

APPENDIX Z

RESPONSES TO COMMENTS ON THE EIS / DRAFT EA REPORT

This document provides a summary of comments received on the Environmental Impact Statement (EIS) / Draft Environmental Assessment (EA) Report. The comment period for the EIS / Draft EA Report was from June 13, 2014 to July 14, 2014. During the comment period, comments were provided from the following agencies, organizations and individuals. Dates received and assigned comment numbers are provided below:

- Brunswick House First Nation Open House (June 5, 2014; Comments #1 to 16);
- Flying Post First Nation Open House (June 18, 2014; Comments #17 to 23);
- Sudbury Open House (June 24, 2014; Comments #24 and 25);
- Mattagami First Nation Open House (June 26, 2014; Comments #26 to 38);
- Métis Nation of Ontario Meeting (June 27, 2014; Comments #39 to 57);
- Betty Naveau and other members of Mattagami First Nation (July 4, 2014; Comment #62)
- Ministry of the Environment and Climate Change (MOECC) – Northern Region – Technical Support – Air (July 4, 2014; Comments #63 to 72);
- MOECC – Timmins District – Permits (July 10, 2014; Comments #73);
- MOECC – Northern Region – Groundwater (July 10, 2014; Comments #75 to 101);
- Sudbury and District Health Unit (July 11, 2014; Comments #102 to 108);
- MOECC – Northern Region – Surface Water draft comments (July 11, 2014; Comments #109 to 114);
- MOECC – Standards Development Branch (July 11, 2014; Comment #115);
- MOECC – Northern Region – Environmental Planning – Air (July 14, 2014; Comments #116 to 122);
- Ministry of Northern Development and Mines (July 14, 2014; Comments #123 to 144);
- Sanatana Resources Inc. (July 14, 2014; Comment #145);
- MOECC – Environmental Approval Branch – Noise (July 14, 2014; Comments #146 and 147); and
- MOECC – Northern Region – Environmental Planning – Land Use (July 14, 2014; Comments #148 to 163).

Comments were also received after the end of the comment period. IAMGOLD endeavored to address all comments received on the EA beyond the comment period; however, to avoid onerous schedule delays, an inclusion cutoff date of September 30, 2014 was set. The following

agencies and organizations submitted late comments that were addressed within the Amended EIS / Final EA Report:

- MOECC – Waste (July 17, 2014; Comments #165 to 168);
- MOECC – Source Protection Programs Branch (July 18, 2014; Comment #169);
- Wabun Tribal Council (July 20, 2014; Comments #170 to 324);
- MOECC – Environmental Monitoring and Reporting Branch – Air (July 21, 2014; Comments #325 to 337);
- MOECC – Environmental Approvals Branch – Wastewater (July 31, 2014; Comments #338 to 349);
- Ministry of Natural Resources and Forestry (MNRF) – Timmins District (August 1, 2014; Comments #350 to 430);
- Canadian Environmental Assessment Agency (CEA Agency) – includes consolidated comments from other Federal departments (August 1, 2014; Comments #431 to 559);
- Environment Canada (August 6, 2014; Comment #699);
- Natural Resources Canada (August 6, 2014; Comment #700);
- Environment Canada (August 7, 2014; Comments #701 to 746);
- MOECC – Environmental Approvals Branch (August 7, 2014; Comments #560 to 621);
- MNRF – Regional Engineering (August 8, 2014; Comments #622 to 627);
- Northwatch (August 8, 2014; Comments #628 to 677);
- MOECC – Northern Region – Surface Water (August 11, 2014; Comments #678 to 697); and
- Ministry of Transportation (August 25, 2014; Comment #698).

Comments were also received from the Métis Nation of Ontario and the MOECC (Hydrology) in October 2014. As these comments were received during finalization of the Amended EIS / Final EA Report, IAMGOLD was not able to formally respond to the comments within the Amended EIS / Final EA Report. IAMGOLD will respond to these comments, along with any other comments received on the Amended EIS / Final EA Report.

Table 1 provides all comments received on the EIS / Draft EA Report up to September 30, 2014. The table also provides IAMGOLD's response to the comment, as well as any changes made to the EA as a result of the comment.

Table 1: Responses to Comments on the EIS / Draft EA Report

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
1	Brunswick House First Nation	Where does Bagsverd Creek flow to?	Bagsverd Creek flows to Neville Lake and then to Mesomikenda Lake, which is part of the Mattagami River watershed. The Mattagami River Watershed has headwaters to the south at the James Bay / Great Lakes watershed divide and flows north for approximately 420 km to a confluence with the Moose River, which subsequently flows to James Bay.	None.	n/a
2	Brunswick House First Nation	So will the water continue to flow south then? Will the realignments change the flow / the direction of the water flow?	As part of the proposed development of the Project, several water features will be fully or partially overprinted. These include Côté Lake and Beaver Pond, portions of Upper Three Ducks Lake, Clam Lake, Clam Creek, the Mollie River and Bagsverd Creek. In order to accommodate the Project components, the Mollie River will be realigned to flow north from Chester Lake into Clam Lake, where it will continue northward through Little Clam Lake into West Beaver Pond and the South Arm of Bagsverd Lake and then will be redirected southeast into Weeduck Lake. From there it will flow south, back into its original watershed in Upper Three Ducks Lake. Additionally, Bagsverd Creek will be realigned to flow west of the Tailings Management Facility (TMF) and connect to Unnamed Lake #2, where it will flow east into Unnamed Lake #1 and then back to Bagsverd Creek, as it continues flowing northward to Neville Lake.	None.	n/a
3	Brunswick House First Nation	Will Bagsverd Creek be diverted?	Yes, Bagsverd Creek will be realigned to flow west of the TMF and connect to Unnamed Lake #2, where it will flow east into Unnamed Lake #1 and then back to Bagsverd Creek, as it continues flowing northward to Neville Lake.	None.	n/a
4	Brunswick House First Nation	What is the rate of flow from Bagsverd? When you dam and reroute, how will the flow change? – I am trying to understand from an ecological perspective – will the realignment hurt, harm or enhance aquatic species in the area?	According to the Hydrology baseline, the current flow in Bagsverd Creek at the outflow ranges from 190 to 3,610 L/s, with an average of 1,101 L/s. There will be a decrease to the annual flow in Bagsverd Creek between 13 to 16% due to the watercourse realignments as well as due to the loss of footprint from the TMF. The watercourse realignments have been designed in such a way to maintain or, wherever possible, enhance the integrity of the aquatic ecology of the area.	None.	n/a
5	Brunswick House First Nation	What is the proposed channel width for the realignments?	The channel width for the proposed watercourse realignments will be approximately 60 metre overall top-width. The actual channel width will be specific to each watercourse realignment, and dependent on location and depth of cut (excavation). The intent of the watercourse realignments is to ensure that the channel's physical shape will vary and comprise a meandering low flow section and wider marshy overbank area: slopes on the channel banks will extend upwards to match existing topography. The deeper the cut (excavation) the wider the overall top-width.	None.	n/a
6	Brunswick House First Nation	Who are the proposed contractors / engineers being considered to design the watercourse realignments?	To date, Calder Engineering has been supporting the design of the watercourse realignments. Contractors / engineers to carry out the design have yet to be selected. Once the feasibility study is completed, IAMGOLD Corporation (IAMGOLD) would be happy to accept bids from local contractors for the development of these realignments.	None.	n/a
7	Brunswick House First Nation	We would like to understand from an aerial perspective how the watercourse realignments will look. Are there pictures that show this from an aerial perspective in the Environmental Assessment.	IAMGOLD has done helicopter tours with government regulators previously, and this is something that IAMGOLD would consider doing again with leadership from local Aboriginal communities. The maps presented in the Amended EIS / Final EA Report show the planned future watercourse realignments from an aerial perspective.	None.	n/a
8	Brunswick House First Nation	Do you have a diagram in the Environmental Assessment outlining what waters will be collected and realigned?	Yes, Figures 5-2 to 5-5 of the EA report present the various stages of the watercourse realignments.	None.	n/a
9	—	This comment has not been included in Appendix Z as it does not relate to the Amended EIS / Final EA Report.	—	—	—

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10	Brunswick House First Nation	We are concerned about tailings ponds leaking out to Bagsverd Creek.	Seepage collection ponds will be placed along or contained by natural topography. Dams / berms will be aligned in low-lying areas. Six collection ponds are proposed around the TMF's northern and southern boundaries and two seepage collection ponds west of the polishing pond dam. Seepage collection ponds will be designed to collect runoff and seepage. They will be designed with enough storage capacity to allow for storage and pumping water to the mine water pond during periods of high or low flow year-round. Seepage collection ponds along the TMF and polishing pond will return water to their respective Project components. The TMF has been designed in such a way that the risk of spills to other water bodies is minimal. There have also been safeguards developed in our accidents and malfunction plan to ensure that there is a plan of action in place for immediate implementation should anything of this nature occur.	None.	n/a
11	Brunswick House First Nation	We've experienced problems with Detour Gold – like highways being shut down during construction and stuff – this makes us realize with a Project such as this, you have a Project footprint, a Water footprint and a footprint of externalities. It is important for us to consider the impact of all of these.	The effects of the Project on traffic and surrounding communities are considered in the socio-economic prediction of effects.	None.	n/a
12	Brunswick House First Nation	I am still trying to get an idea of the impact on flow and the tailings ponds – I will get back to you with more questions about this.	n/a	None.	n/a
13	Brunswick House First Nation	Are there any plans to use staging camps during construction?	At this point IAMGOLD has not begun to fully assess the logistics of the Project during the construction phase. If using staging camps would create less of an interruption to local communities during Project construction, it is something that IAMGOLD could consider.	None.	n/a
14	Brunswick House First Nation	We would like to see as many local suppliers used as possible to avoid traffic and shut downs on highways during the construction phase of the Project.	It is IAMGOLD's intent to use local suppliers, as appropriate, during Project development as this may help to mitigate traffic impacts and provide benefits to local businesses. IAMGOLD does not currently anticipate a need for any shut downs on the Highway during construction. The Project is well supported by local infrastructure.	None.	n/a
15	Brunswick House First Nation	Will you be milling ore and gold here?	IAMGOLD will process the ore at the site with the final product being doré gold bars.	None.	n/a
16	Brunswick House First Nation	What waters will be collected, is there a diagram?	Yes, Figures 5-2 to 5-5 of the Amended EIS / Final EA Report present the various stages of the watercourse realignments.	None.	n/a
17	Flying Post First Nation Open House	Is there an expiry date on an approved environmental assessment?	There is no expiration date on the approval. The Canadian Environmental Assessment Agency (CEA Agency) is looking at including conditions to the approval such that if the Project were to change considerably, the approval would no longer be valid.	None.	n/a
18	Flying Post First Nation Open House	So once the engineering design and feasibility studies are done – and if any big changes are made – will another Environmental Assessment be required?	The approval would be granted for the Project described and assessed in the EA. If a major change to the design was made (i.e., relocation of the TMF) IAMGOLD would likely need to carry out another EA or revise the existing EA. Also, any permits submitted would have to be changed or resubmitted.	None.	n/a
19	Flying Post First Nation Open House	To confirm, as one of the mitigations, IAMGOLD will not allow Project staff to hunt or fish on site?	Correct. Project staff will not be allowed to hunt and/or fish on site during the construction, operations and closure phases of the Project.	None.	n/a

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20	Flying Post First Nation Open House	Since your last presentation, what in terms of the Project design has changed?	IAMGOLD has changed the design of the Mine Rock Area (MRA). Previously IAMGOLD planned for three smaller MRAs, but the current design now has the mine rock placed in one location. This was done to reflect community feedback, and because creating only one MRA will reduce the Project footprint and reduce water and noise effects. Project effluent will be discharged to Bagsverd Creek. The EA revealed that the effect on the environment to Bagsverd is actually smaller compared to Mesomikenda Lake – this is generally because the lack of flow in and out of Mesomikenda. IAMGOLD has also worked to develop a closed-loop on-site water management system to reduce freshwater intake and effluent, which only requires seasonal discharge. IAMGOLD has also selected the Cross-Country Alignment as the preferred alternative for the power supply to the Project. Additionally, there is now only the tailings pipeline on the west of the TMF, the east option no longer exists.	None.	n/a
21	Flying Post First Nation Open House	What is the intake of water per day for the mine?	Although at this time the freshwater removal rate is not expected to be greater than 20% of the process water demand at the ore processing plant, the maximum freshwater removal rate will be determined during the Permit to Take Water application phase. Freshwater will be taken in accordance with conditions associated with the Permit to Take Water, when approved. The water removal is intended to supplement recycled site water and provide for truck washing, potable and fire reserve requirements.	None.	n/a
22	Flying Post First Nation Open House	When I think of non-miners in this community, I don't think they can fully conceptualize the size of the open pit. It would be useful if we could see some images of Projects of a comparable size. It would be a useful tool for the average person.	IAMGOLD understands these concerns and is committed to work closely with Aboriginal communities to maximize Project-related benefits to potentially affected communities. Throughout consultation activities IAMGOLD has made efforts to show comparable examples and IAMGOLD is committed to continue these efforts.	None.	n/a
23	Flying Post First Nation Open House	I think it is important that we think carefully of future generation. With a Project of this size hurting so much of the environment, it is important that it is at least offset with jobs and progress. And while this Project may bring a lot of progress, it has to be worth it, and that can be difficult to judge.	IAMGOLD understands these concerns and is committed to work closely with the First Nations to maximize the benefits to the First Nations communities.	None.	n/a
24	Sudbury Open House	A member of City Council noted that the City very much supports and welcomes the Project.	The comment has been noted. No response required.	None.	n/a
25	Sudbury Open House	A member of the general public noted that the Open House was very well advertised.	The comment has been noted. No response required.	None.	n/a
26	Mattagami First Nation Open House	Is this considered consultation or an information session?	There is not just one event that is 'consultation'. Rather, anytime information is shared with you from either the proponent or the government, it should be considered consultation – it is very much an ongoing process.	None.	n/a
27	Mattagami First Nation Open House	The water has a lot of spiritual importance for us. I would like to continue a dialogue with IAMGOLD that is based on trust. It is important that we develop a relationship that will support our generation and those that will come after us.	IAMGOLD is very supportive of this dialogue and will actively pursue activities that will aim at deepening the relationship with the local First Nations.	None.	n/a
28	Mattagami First Nation Open House	You have not yet talked about us as a species at risk – if you are taking away our fish and mushrooms away from us – you are putting us at risk. We need to think very carefully about how we move forward.	IAMGOLD understand these concerns. It is not expected that the Project will have a measurable effect to the abundance and distribution of plants in the region.	None.	n/a
29	Mattagami First Nation Open House	I am pleased to accept the tobacco that IAMGOLD has offered to us, on the condition that IAMGOLD continues to treat our community with respect.	The comment has been noted. No response required.	None.	n/a

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30	Mattagami First Nation Open House	There was a poster put up in the community requesting input from people who wanted to participate in a TK/TLU study. The poster requested that our information about the land and our uses be specific to the IMG Project area. I would like to inform you that we cannot provide information in the format you are requesting because we use the land beyond the perimeter of the IMG property. I would also like to note as a mother, and as a woman, that we have a responsibility to the water – without water we would not survive, it is very sacred – subsequently, I am requesting that a full ceremony take place at Cote Lake immediately – and I am happy to coordinate that.	IAMGOLD is not involved in the Traditional Knowledge (TK) / Traditional Land Use (TLU) study being conducted by Wabun Tribal Council. IAMGOLD previously provided funding for a TK / TLU specific to the proposed Project and the results of this study were incorporated into the draft EA. IAMGOLD is committed to working with Mattagami First Nation and other Aboriginal communities to honour requests for traditional ceremonies at the Project site and will follow-up on the request for a water ceremony as well as a request that was received for a traditional pipe ceremony.	None.	n/a
31	Mattagami First Nation Open House	What is IAMGOLD going to do about the Eagle's nest? Q: Is the Ministry of Natural Resources aware of this nest?	As committed to during the presentation provided to the community, IAMGOLD will remove the eagle's nest. However, the environmental assessment (EA) studies have identified that the local Eagle population as a whole will not be impacted, as there is sufficient suitable habitat in the region to support the population. As explained in the presentation, during the comment period, all relevant Provincial and Federal ministries were invited to provide comments on the EIS / Draft EA Report.	None.	n/a
32	Mattagami First Nation Open House	Is there a biodiversity report on Cote Lake? Has Chief and Council seen this Report?	IAMGOLD has completed substantial reports on wildlife and vegetation communities in the Project area. Notice of public review of the EIS / Draft EA Report was provided to the community along with a copy of the EIS / Draft EA Report on June 13, 2014.	None.	n/a
33	Mattagami First Nation Open House	I also agree that women need to stand together to provide a dialogue to men with our input in the Project. Our female elders, and other women of the community want to give more guidance and direction on the Project. Traditionally, water ceremonies are led by women – that is the way the process is to be done. You need women's input on the Project – you need to talk to women in the community.	IAMGOLD followed-up with Mattagami First Nation and held a preliminary brainstorming session on July 15, 2014 with interested women from the community. IAMGOLD committed to meeting again with the women of the community at their request to continue discussions.	None.	n/a
34	Mattagami First Nation Open House	How is elders knowledge being incorporated into the EA? For what purpose are you using our elders knowledge?	IAMGOLD funded a TK / TLU study to identify traditional land and resource uses by Aboriginal people at the Project site or adjacent areas. The independent consultant hired to conduct the study interviewed elders from Mattagami First Nation and Flying Post First Nation. As part of the EA, effects were assessed on plant harvesting, hunting, fishing, canoeing, and cultural, spiritual or ceremonial sites for all phases of the Project (construction, operations, closure and post-closure). A youth and elders meeting was also held in May 2014 to identify particular areas of concern and answer questions about the Project.	None.	n/a
35	Mattagami First Nation Open House	The way this material is being presented is inaccessible to non-miners.	IAMGOLD has shared EA-related information in various formats, including an executive summary, a plain language fact sheet of key EA findings, presentations and one-on-one discussions. IAMGOLD will also be available after this presentation to discuss these issues one-on-one with interested individuals.	None.	n/a
36	Mattagami First Nation Open House	Do we have a 100% guarantee that our water will not be affected? If not, then what? What about seepage?	During the presentation, IAMGOLD explained all mitigations and components of Project design that will be implemented to ensure that water quality remains well below criteria and guideline limits.	None.	n/a
37	Mattagami First Nation Open House	I think it is important that IAMGOLD seek information from groups other than just elders. I also use the land, and I've learned traditional practices from my elders that I would like to share	IAMGOLD is committed to effective consultation and information sharing throughout the Project. IAMGOLD is open to feedback from everyone.	None.	n/a
38	Mattagami First Nation Open House	I don't think it is possible to run a mine for 15 years and have it return to the same way it was before. It is going to take a very long time for this land to be healed. I want the land to be protected for my grandchildren – and my concern is for the health of the land- how much rehabilitation can really be done?	IAMGOLD will submit permit applications and will demonstrate financial assurance before proceeding with the development of the Project. Closure permits require that IAMGOLD has the capacity to rehabilitate the land to a productive state. IAMGOLD has committed to revegetate and bring the land back to as natural a state as possible. It should be noted that the open pit will take approximately 50-80 years to fill.	None.	n/a
39	—	This comment has not been included in Appendix Z as it does not relate to the Amended EIS / Final EA Report.	—	—	—
40	Métis Nation of Ontario	The duty to consult is primarily required in the EA process – whereas once a company moves into the permitting phase, it is much more about monitoring impacts to Métis rights – so that is why we are so concerned about identifying our rights.	The comment has been noted. No response required.	None.	n/a

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41	Métis Nation of Ontario	What is the role of other Federal authorities in the EA process?	Response by C Dekker (CEA Agency): Other agencies will advise on EA decisions throughout the EIS comment period, and then later will work on permits with IAMGOLD. During the EA process, CEA Agency will act as the lead regulatory agency.	None.	n/a
42	Métis Nation of Ontario	We would like to see a list of potential permits that will need to be obtained by IAMGOLD in the future and what government authorities are involved in the decision-making around those permits.	Please see Tables 2-1 and 2-2 of the Amended EIS / Final EA Report for lists of required Federal and Provincial environmental approvals, respectively.	None.	n/a
43	Métis Nation of Ontario	What is MNO's timeline to provide TK into the EA – we need to make sure that we get traditional Métis knowledge into EA	IAMGOLD provided a deadline of September 1, 2014 for submission to ensure that the TK study could be incorporated into the EA.	None.	n/a
44	Métis Nation of Ontario	What are the absolute numbers for GHG emissions that will come from the Project?	It has been calculated that the greenhouse gas emissions, based on conservative estimates and including an estimation of greenhouse gases associated with the electricity required by the Project would be approximately 285,818 tonnes of CO ₂ equivalent per year, as a maximum.	None.	n/a
45	Métis Nation of Ontario	What is the percentage of GHG emissions that will come from the Project for the region in which we harvest?	This information is not available and therefore IAMGOLD cannot calculate this number.	None.	n/a
46	Métis Nation of Ontario	Will the blasting affect the fish?	An assessment of the potential effects of blasting on fish is included in the EA. For the most part, the only fish that will be affected are ones that are already in lakes that have been dammed. The area potentially affected will either be overprinted by the construction of dams or is largely profundal (deep) and provides limited spawning habitat for the resident fish within this lake. Having said that, IAMGOLD will keep this potential impact in mind as it moves forward with planning the development of the water channel realignments.	None.	n/a
47	Métis Nation of Ontario	How many kilometres of new channel realignment will be developed?	The proposed watercourse realignments will total approximately 7.9 km.	None.	n/a
48	Métis Nation of Ontario	What is the relevance of the few samples that seem to have an acid generating potential?	The geology at the site is consistent; there are very low levels of sulphur in the rock. Additionally, there is a fair amount of carbonate and IAMGOLD is confident about the very low net potential to generate acid. More test work is ongoing to further increase the level of confidence in these findings.	None.	n/a
49	Métis Nation of Ontario	How will you know if you build a water realignment in an area where the rock is high in sulphur?	A testing and sampling program has been carried out to ensure that the watercourse realignments will be constructed in ground that is non-acid generating.	None.	n/a
50	Métis Nation of Ontario	So is it your understanding that all elevated levels of elements in the water are a result of purely natural sources?	Yes, this is IAMGOLD's understanding.	None.	n/a
51	Métis Nation of Ontario	Do the studies assess where specific vegetation communities grow? Or, do they just list the vegetation communities in the area? I anticipate that this information is something that will come out of our Traditional Knowledge study.	Plant community mapping was initially completed as a desktop exercise using information acquired from the Forest Resource Inventory. Existing information was used to identify habitats with potential to support plant species at risk (SAR). Preliminary desktop mapping of upland and wetland plant communities were ground-truthed and detailed plant species inventories were completed.	None.	n/a
52	Métis Nation of Ontario	In the forestry industry, there is a requirement to leave a buffer zone around any raptors nests. Do those same requirements apply to the mining industry?	Such a buffer zone requirement does not apply to the development of the Project. IAMGOLD will be required to remove one eagle's nest. This removal will take place outside of the breeding season. It is expected that the eagle will relocate to other available nests in the area.	None.	n/a

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53	Métis Nation of Ontario	What policies will be in place (if any), when/if animals invade the Project site?	<p>If animals invade the Project site, both employee health and safety, and animal wellbeing need to be considered.</p> <p>Employee health and safety training will include awareness training for moose, black bear, wolf and other potentially dangerous animals that are likely to be encountered near the mine. Appropriate personal protective equipment will be provided to employees that may be exposed to wildlife. An Emergency Response Plan will be developed for mine operations and will include procedures for incidents involving aggressive wildlife.</p> <p>Wildlife that enter the mine area will be left alone to the extent practicable. There will be temporary suspension of surface blasting if moose, black bear, wolf and other wildlife are observed within the danger zone identified by the blast supervisor. Mitigation measures for wildlife are provided in Table 10-2 of the final Amended EIS / Final EA Report.</p> <p>If a nuisance animal such as a habituated black bear is encountered at the mine site then IAMGOLD will contact the Ministry of Natural Resources and Forestry (MNRF) for guidance.</p>	None.	n/a
54	Métis Nation of Ontario	When you refer to 'suitable habitat', what are you describing, quality and quantity?	Both quality and quantity are considered when referring to suitable habitat.	None.	n/a
55	Métis Nation of Ontario	In the archaeological assessment, was there any distinction made between Métis and First nation pre-contact archaeological sites?	The archaeologist indicated that there are no Métis pre-contact archaeological sites. The later sites are all early mining camps. None of the archaeological sites appear to relate to the Métis peoples settlement.	None.	n/a
56	Métis Nation of Ontario	What are you referring to when you use the term 'risk-based reference' value?	This means that the water quality is compared to the actually species in the water and the use of the water. The Project will then be designed to meet or fall below these values.	None.	n/a
57	Métis Nation of Ontario	Currently, your EIS is void of descriptions of any impact to the Métis – you suggest there are no residual effects – but you do not know what the impact to the Métis. Until we can identify impacts, we need to assume that these impacts are significant.	<p>IAMGOLD is keen to incorporate the Métis TK study into the EA if the information is received in a timely manner.</p> <p>IAMGOLD feels confident that the conclusion that effects on Métis people will not be significant, without the TK information, remains valid. IAMGOLD has considered impacts on Aboriginal people (First Nations and Métis) within the EA. Certainly if the TK study provides information about the use of the site that IAMGOLD is not currently aware of it, it will be given the appropriate level of consideration.</p> <p>As of September 30, 2014 the Métis Tradition TK / TLU study has not been received and therefore its findings and conclusions / recommendations have not been included in the Amended EIS / Final EA Report.</p>	None.	n/a
58	—	This comment has not been included in Appendix Z as it does not relate to the Amended EIS / Final EA Report.	—	—	—
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61	—	This comment has not been included in Appendix Z as it does not relate to the Amended EIS / Final EA Report.	—	—	—
62	Betty Naveau and other members of Mattagami First Nation	<p>How would you like to be involved in the environmental assessment process of the Côté Gold Project?</p> <p>By my voice and genuine concerns to be heard and taken seriously. We teach our young through our teachings passed on from generations and would like our land for generations to come!</p>	The comment has been noted. IAMGOLD is taking all comments seriously and is willing to continue a dialogue with Mattagami First Nation to understand specific concerns about the Project.	None.	n/a

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63	Ministry of the Environment and Climate Change (MOECC) - Northern Region - Technical Support - Air	Air Quality Technical Support Document, S5.2.1, pg 5-2 Document states 'Fugitive dust emissions from the tailings management facility (TMF) were not quantitatively assessed; measures to control dust from the TMF are required to eliminate the potential for dusting from the large exposed area.' Shouldn't this source be included in the estimates with a control efficiency of DBMP Plan accounted for? Include quantitative assessment of fugitive dust emissions from TMF complete with a control efficiency consistent with DBMP Plan.	A quantitative assessment of fugitive dust from the TMF has been included as an Addendum to Appendix F (Air Quality TSD).	The prediction of fugitive dust from the TMF has been included in the Addendum to Appendix F.	Addendum to Appendix F
64	MOECC - Northern Region - Technical Support - Air	Air Quality Technical Support Document, S5.1, Pg 5-1 Document references DBMP for construction phase to be developed. Will this be submitted to Ministry for review? Other similar projects have Construction DBMP submitted to Regional Technical Support Section for review. State whether Construction DBMP to be submitted to the Ministry.	A dust best management practices plan will be developed for both the construction and operations phases, and will be submitted to the Ministry of the Environment and Climate Change (MOECC) as a component of the Environmental Compliance Approval (ECA) application.	None.	n/a
65	MOECC - Northern Region - Technical Support - Air	Air Quality Technical Support Document, S5.2.2, pg 5-2 Maximum emissions scenario to include ore processing in addition to mining activities? This is not mentioned in description of MES. Ensure ore processing is included in MES.	The Emission Scenario considered was based on the maximum ore throughput rate, and the maximum material movement from the open pit which occurs in Year 5. Emissions from ore processing were included in the assessment; it should be noted that the processing is an entirely wet process and no particulate emissions are generated following secondary crushing.	None.	n/a
66	MOECC - Northern Region - Technical Support - Air	Air Quality Technical Support Document, S5.2.3.1, pg 5-8 Table 5-4 shows compliance with O.Reg 419 (excluding background and mobile). What about emissions due to on-site traffic (i.e., mobile, haul trucks)? Were those emissions included in modelling and compared to O.Reg 419 limits? Ensure fugitive emissions due to on-site traffic are included in dispersion modelling.	Emissions from on-site vehicles were calculated and included in the dispersion modelling for comparison of the point of impingement concentrations with the Ambient Air Quality Criteria (AAQC) (Tables 5.2 and 5.3). For assessment against the standards and guidelines of Ontario regulation (O.Reg.) 419/05 (Table 5.4), mobile sources are excluded, and fugitive dust emissions from roadways were not included, as per the guidance published in Section 7.3 of the Emission Summary and Dispersion Modeling Procedure Document (2009). The potential effects associated with the metal constituents of the road dust were, however, considered for those metals with health-based O.Reg. 419/05 limits.	None.	n/a
67	MOECC - Northern Region - Technical Support - Air	Air Quality Technical Support Document, Appendix III: Emission Calculations Emission estimate calculations for generator sets are not clearly shown. Reviewer could not duplicate estimates. Detailed and clear calculations should be shown in ECA submission.	The methodology and calculations for emissions from the diesel generators will be provided as part of the ECA application package. For the diesel generators, the emissions from one of the 2.5MW units was included in the maximum emission scenario for the dispersion modelling assessment, as testing would only be conducted on one unit at a time. For NO _x , Particulate Matter (PM), and CO, the emission rates provided as the manufacturer's specifications for the generator; these rates were: <ul style="list-style-type: none"> ▪ NO_x: 48.11 lb/hr (6.07 g/s); ▪ PM: 0.4 lb/hr (0.050 g/s); and ▪ CO: 5.86 lb/hr (0.739 g/s). As recommended by the United States Environmental Protection Agency, all particulate is assumed to be <1 µm in size, therefore the emission rates for total suspended particulate (TSP), PM ₁₀ , and PM _{2.5} are equivalent. For SO ₂ , the emission rate was calculated based on fuel usage, sulphur content in fuel and the conservative assumption that all sulphur in the fuel is emitted as SO ₂ . Sample calculations have been provided in the Addendum to Appendix F (Air Quality TSD).	Sample calculations for diesel generator emissions are provided in the Addendum to Appendix F.	Addendum to Appendix F

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68	MOECC - Northern Region - Technical Support - Air	Air Quality Technical Support Document, Appendix III: Emission Calculations Estimates for material loading and unloading at stockpiles assume a water control efficiency of 75%. Not clear where control efficiency is from. Other Mining EA's have shown lower control efficiency. No discussion on Best Management Practices Plan provided to verify control efficiency. Revisit control efficiency when Best Management Practices Plan developed to ensure that conservative control efficiency percentage is applied to emission estimate.	Acknowledged. Additional information will be provided in the ECA -Air application. A literature review of published control efficiencies for watering of material handling activities identified a range of efficiencies between 62% and 90% depending on watering intensity and weather conditions, therefore use of a control efficiency of 75% was deemed appropriate for the high level of dust control and mitigation that will be undertaken at the site.	None.	n/a
69	MOECC - Northern Region - Technical Support - Air	Air Quality Technical Support Document, Appendix III: Emission Calculations HCN Emissions from leaching process based on Australian NPI data. Data quality of emission estimate not provided. Provide sufficient supporting documentation to substantiate emission calculation and data quality assessment with ECA submission.	Acknowledged. Additional information will be provided in the ECA - Air application. Note that the Australian NPI documents are considered a standard reference for Emission Summary and Dispersion Modeling development.	None.	n/a
70	MOECC - Northern Region - Technical Support - Air	Air Quality Technical Support Document, Appendix III: Emission Calculations Control efficiency for road dust emissions was assumed to be 85% which the reviewer finds to be in the high end of control efficiency range. Revisit control efficiency when Best Management Practices Plan developed to ensure that conservative control efficiency percentage is applied to emission estimate.	Acknowledged. Additional information will be provided in the ECA -Air application. In accordance with the supporting documents (United States Environmental Protection Agency, AP-42, unpaved roads; International Finance Corporation Environmental, Health, and Safety General Guidelines) the watering could provide up to 95% - 98% control efficiency and the speed limit is up to 80%. In accordance with the recommended guidelines, the control efficiencies of two or more controls in concurrent application are multiplicative. This option was not exercised deliberately to be conservative in the assessment and only one control efficiency of 90% for watering was applied for the road dust emission rates calculation. This is considered to be a conservative approach.	None.	n/a
71	MOECC - Northern Region - Technical Support - Air	Air Quality Technical Support Document, Appendix III: Emission Calculations Emission estimates for CN destruction relied on mfg key data sheet. Data quality is uncertain. When using supplier info for emission estimates, enough supporting documentation should be provided by the proponent to support the emission estimate calculation and for Ministry verification of estimate and data quality assessment.	Acknowledged. Additional information will be provided in the ECA - Air application.	None.	n/a
72	MOECC - Northern Region - Technical Support - Air	Air Quality Technical Support Document, Appendix III: Emission Calculations Emission estimate calculations assumed a silt content of 5.9% (what is this based on?). CEMI 'Guide to the Preparation of BMP Plan for the Control of Fugitive Dust for Ontario Mining Sector Aug 2010' suggests a silt content of 9.14% is typical for Ontario Mining Sites. In addition, a control efficiency of 75% was assumed. At ECA stage, supporting documentation should be provided to support silt content. Also revisit control efficiency when Best Management Practices Plan developed.	The ore mined at the site is contained in hard rock; not softer rock such as limestone. As such, the taconite ore silt content for haul roads to / from the pit was used as an appropriate material of similar hardness. The mine rock used for the roads will not be crushed to the small sizes normally found on unpaved road. As such, there will be minimal silt on the haul roads. Additional information will be provided in the ECA - Air application.	None.	n/a

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73	MOECC - Timmins District - Permits	<p>Based on my review of the draft EA and my knowledge of a typical mining operation. I offer the following comments related to potential ECA's needed prior to the development and operation of this mining site:</p> <ul style="list-style-type: none"> ▪ ECA (industrial sewage works) for the proposed tailings management facility, including the final effluent polishing pond. ▪ ECA (industrial sewage works) for the proposed mine water settling pond for the open pit, including PTTW for the dewater of Cote Lake during the construction phase and the open pit during operation phase of the project. ▪ ECA (industrial sewage works) for the proposed mine rock area, to capture all storm water runoff from this site. ▪ ECA (industrial sewage works) for the proposed low-grade ore stockpile, to capture all storm water runoff from this site. ▪ ECA (industrial sewage works) for any oil/water separators require at the fuel and lubrication facility, maintenance garage, and on-site electrical substation. ▪ ECA (domestic sewage treatment) for the treatment of all domestic waste (human waste) produced at the mill complex, office complex, housing complex, emulsion plant which will be required to accommodate both the construction phase of the project ,approximately 1,500 workers, and the operation phase for the life of the mine with a projected 350-360 workers . This would include any ECA approvals required for the final disposal of all and any processed organic sludge produced by the treatment process. ▪ ECA (domestic sewage treatment) for the treatment of any back wash water from the proposed potable and process water treatment facility that will service the milling complex and accommodations complex. This would include any ECA for the final disposal of process organic sludge produced by the treatment process. ▪ ECA (waste disposal site) for the final disposal of all waste materials generated on site both during the construction phase and operation phase for the life of the mine. This would include any areas developed for the storage of any recycled materials to be stored on site while awaiting for shipment off site to an approved recycling facility. I do note that the size of the project, will require the company to address Ontario Regulation 102/94 – Waste Audits and Waste Reduction Work Plans, Part IV – Large Construction Projects for this mining project. ▪ ECA (industrial air) site wide for the proposed ore processing complex, maintenance garage complex, fuel and lubrication complex, warehouse complex, administration complex, accommodations complex, explosives manufacturing complex, electrical substation and on-site diesel power generators. ▪ ECA (waste management system) for the transportation of all and any waste materials off-site onto provincial highways. ▪ PTTW for the taking of fresh water from Mesomikenda Lake, projected portions of Three Duck Lakes, Chester Lake, Clam Lake, Mollie River and Bagsverd Creek to be either dammed or realigned for the development of the open pit and tailings management facility. ▪ Waste Generator Registration under Ontario Regulation 347 for the generation, storage and disposal of any hazardous and liquid industrial waste produced at the site. 	<p>Thank you for the information. Table 2-2 of the Amended EIS / Final EA Report, which identifies environmental approvals expected to be required for development of the Project, has been updated to reflect this information.</p>	<p>Table 2-2 in Chapter 2 of the EA has been updated to includes relevant ECAs listed by the MOECC, including:</p> <ul style="list-style-type: none"> ▪ industrial sewage works ECAs for the polishing pond and refuelling / oil / lubrication areas; ▪ sewage works ECAs for treatment of domestic waste produced at the Project site including back wash and sludge produced in the sewage treatment plant; ▪ ECA waste management system for the transportation of waste materials off-site and over Provincial highways; ▪ ECA air and noise for refuelling areas, the administration complex and other Project buildings; ▪ Permits to Take Water for water takings to supplement the process plant water balance and as required for realignment and dam construction; and ▪ waste generator registration for the generation, storage and disposal of any hazardous waste. 	<p>Chapter 2 - Table 2-2</p>
74	—	This comment number has not been assigned.	—	—	—

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75	MOECC - Northern Region - Groundwater	<p>§5.3.4—Open Pit Material Geochemical Characterization/§6.3.4.3—Summary/Appendix J—Water Quality TSD (Attachment II—Water Quality Modelling Report, §2.4—Modelled Parameters)</p> <p>Section 5.3.4 states "...the likelihood of net acid conditions occurring in the mine rock piles is considered to be very low. Therefore, inclusion of any PAG materials with the bulk of the waste will likely be an appropriate management method and segregation of any PAG materials does not appear to be necessary." This approach may not be adequate based on the combined impact of PAG material and ML. It was noted that elevated levels of As, Bi, Cu, Se, Cd, and Mo are present in mine and waste rock and short term leach tests showed elevated levels of V, Ag, Cr, and Cu frequently above PWQO criteria, among other metals that were less frequently in exceedance.</p> <p>Section 6.3.4 confirms that PAG material does exist within the mine rock and mine waste rock. However, the alternative of separating material with ARD/ML potential from inert mine wastes was not considered.</p> <p>The Water Quality Monitoring Report does not consider pH or alkalinity in the model used for predictions of water quality. It is assumed that the small quantity of PAG material was not expected to significantly change the pH and alkalinity of the receiving environment. Including pH and alkalinity in the model would help to provide evidence that PAG material is not a significant concern for this project, justifying the statements made in §5.3.4.</p> <p>The alternative of separating material with ARD/ML potential from inert mine wastes and the impact of this undertaking on the project should be assessed in the EA.</p> <p>The Water Quality Model should be expanded to include pH and alkalinity to help to fully assess the impacts of the PAG material that does exist.</p>	<p>Potential changes to pH and alkalinity were qualitatively assessed and considered as part of the water quality effects assessment. The pH and alkalinity in the surface water receivers are not expected to materially change from the baseline conditions. As presented in Appendix E (Geochemical Characterization Report; Table 7-6), 5 of 236 samples (2%) of mine rock had a Neutralization Potential Ratio (NPR) less than 1, and 8 of 236 samples had a carbonate NPR less than 1 (3%). Furthermore, using Leco carbon and sulphur analyses, as presented in Appendix E (Table 7-8), only 25 of 912 samples (3%) had an NPR less than 1. Based on the acid-base accounting presented in Appendix E, any acidity produced by the 2-3% of rock will be neutralized by the surplus in neutralization potential in the remaining 97-98% of the mine rock (i.e., the neutralization capacity will overwhelm any acidity produced). Therefore, there is no value in segregating the materials. Furthermore, including pH and alkalinity in the water quality modelling is not necessary given the clear non-acid generating nature of the overall mine rock pile.</p>	None.	n/a
76	MOECC - Northern Region - Groundwater	<p>§5.6.5.2—Cyanide Use and Destruction</p> <p>The third chemical reaction depicted on page 5-15 of the draft EA appears to be unbalanced with respect to oxygen: $2CN^- + Na_2S_2O_5 + O_2(g) + H_2O \rightarrow 2CNO^- + Na_2SO_4 + H_2SO_4$</p> <p>This mistake is expected to be a simple typographical error.</p> <p>Please correct this error in the EA and provide a description of any impacts to the project that this change may have on the project.</p>	<p>Thank you for noting this typographical error. This has been corrected in the Amended EIS / Final EA Report.</p>	<p>Corrected formula in Chapter 5 to: $2CN^- + Na_2S_2O_5 + 2O_2(g) + H_2O \rightarrow 2CNO^- + Na_2SO_4 + H_2SO_4$</p>	Section 5.6.5.2
77	MOECC - Northern Region - Groundwater	<p>§5.10.4—TMF Water Management</p> <p>In this section there was no mention of retention time or water balance in the TMF. It is anticipated that the cyanide that does report to the TMF will need adequate exposure to an appropriate environment (temperature and UV) to further decompose.</p> <p>In the EA discuss how adequate retention time for the water within the TMF will be achieved.</p>	<p>The water balance for the TMF was developed during prefeasibility-level design of the facility, and is discussed in Appendix I (Hydrology TSD). With respect to sufficient retention time for cyanide degradation in the TMF reclaim pond, a water management strategy has been designed to maintain a closed-loop between the processing plant and the reclaim pond. The reclaim to the process plant as a water management strategy will be used in combination with cyanide treatment (at the processing plant) to manage cyanide in the reclaim pond at appropriate operating levels. Because the water in the reclaim pond is required to meet the processing plant demand, water from the reclaim pond does not report to the polishing pond for discharge to the environment. As a result, the residence time in the reclaim pond is controlled largely by the reclaim rate back to the ore processing plant and has limited relevance with respect to cyanide management.</p>	None.	n/a
78	MOECC - Northern Region - Groundwater	<p>§5.13—Fuel and Chemical Management</p> <p>Fuel (diesel) tanks are to be located onsite. It has been assumed that these tanks will be located above ground, however, no discussion of secondary containment was provided.</p> <p>Confirm the accuracy of this assumption and provide details on secondary containment of the fuel tanks.</p>	<p>Fuel tanks will be double-walled and secondary catchment will be provided as well.</p> <p>The Amended EIS / Final EA Report has been revised to include the above.</p>	<p>The following text has been added to Section 5.13: "Fuel tanks will be double-walled and secondary catchment will be provided."</p>	Section 5.13, second paragraph

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79	MOECC - Northern Region - Groundwater	<p>§5.14—Domestic and Industrial Waste Management</p> <p>Domestic waste generated onsite is to be transferred to the MNR Chester Township Landfill, which will need expanding to serve the project for the life of the mine. The draft EA does not appear to indicate what studies have been done to verify that expansion of this waste disposal site (WDS) is reasonable or provide acknowledgement of the permitting requirements and timeline of such an undertaking.</p> <p>In the EA, provide details on the feasibility of the expansion of the proposed WDS and a discussion of the process and timeline involved in acquiring and expanding the WDS.</p>	<p>IAMGOLD is working with MNRF on a licence agreement which would delegate MNRF's management responsibilities for the landfill to IAMGOLD in return for MNRF completing the required studies for the expansion of the facility.</p> <p>The details of the MNRF study are beyond the scope of the EA and are within MNRF's responsibility.</p> <p>The landfill is included in the effects assessment of the Project.</p>	None.	n/a
80	MOECC - Northern Region - Groundwater	<p>§5.14—Domestic and Industrial Waste Management</p> <p>The wording of the second last paragraph of this section is unclear. It should be noted that all waste oils, lubricants, solvents and cleaners are stored with appropriate secondary containment.</p> <p>Verify, in the EA, that no matter how these waste products are stored, appropriate secondary containment will be in place.</p>	<p>All waste oils, lubricants, solvents and cleaners will be stored with appropriate secondary containment.</p> <p>The Amended EIS / Final EA Report has been revised accordingly.</p>	<p>Section 5.14 has been revised to:</p> <p>"Spent solvents and cleaners will also be stored with appropriate secondary containment and periodically removed for off-site disposal at a licensed facility using appropriately licensed haulers."</p>	<p>Section 5.14, second last paragraph, second last sentence</p>
81	MOECC - Northern Region - Groundwater	<p>§5.14.1.1—Air Emissions</p> <p>The draft EA notes that water from the mine water pond will be used for dust suppression on roads. However, a discussion of the quality of this water and its suitability for direct discharge to the environment was not provided.</p> <p>In the EA, provide details on how it will be ensured that the quality of the water used for dust suppression will be of a quality appropriate for discharge to the environment. It is expected that this water should meet PWQO criteria.</p>	<p>Mine water pond water will be used for dust suppression in areas that drain towards the open pit or the MRA collection ponds. Should dust suppression be required in other areas IAMGOLD would either use other dust suppression measures or fresh water.</p>	<p>Replaced the following text: "throughout the Project site)." With</p> <p>"in areas that drain towards the open pit or the MRA collection ponds). Should dust suppression be required in other areas of the Project site, then other dust suppression measures or a separate fresh water source will be used."</p>	<p>Section 5.14.1.1, second paragraph</p>
82	MOECC - Northern Region - Groundwater	<p>§5.16.2.2—Mine Rock Area (also mentioned in §5.17—Table 5-2)</p> <p>This section suggests that there will be flat surfaces within the MRA where water could potentially pool.</p> <p>The waste pile(s) within the MRA should be graded to promote surface drainage and eliminate the pooling of water. The EA should reflect this MRA design detail.</p>	<p>The MRA will generally be porous and designed to promote drainage. Although not expected, some temporary minor pooling on the stockpile could occur (e.g., tire ruts). This will not affect stockpile stability. Areas that receive overburden and are vegetated will be designed to prevent runoff from pooling, although moisture retention is considered desirable for vegetation growth. The Amended EIS / Final EA Report has been modified to include this MRA design detail.</p>	<p>Added a new sentence "Areas which receive a layer of overburden will be designed to prevent pooling of water."</p>	<p>Section 5.16.2.2, second paragraph, and Table 5-2</p>
83	MOECC - Northern Region - Groundwater	<p>Appendix H—Hydrogeology TSD §2.7—Effect Prediction/Attachment II—Groundwater Model</p> <p>The groundwater model presented does not appear to be calibrated, which is a necessary tool to assess model accuracy.</p> <p>In the EA, provide details on the calibration of the groundwater model and discuss the accuracy of the model. It is anticipated that updated hydrogeology results will be provided upon adequate calibration of the model.</p>	<p>The base case model provides a reasonable approximation of site and regional conditions based on available mapping and borehole, water level, and hydraulic testing data. In addition, the hydraulic gradients are very flat, which results in difficulty of calibrating the model and arriving at a unique solution. As such, a secondary sensitivity analysis model was completed instead of calibrating the model, which provides a conservative interpretation of the base case with respect to increasing pit dewatering rates. It is our opinion that, between these two models, the range of potential impact that could occur in the field is encompassed.</p>	None.	n/a

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84	MOECC - Northern Region - Groundwater	<p>Appendix H—Hydrogeology TSD §2.7—Effect Prediction/Attachment II—Groundwater Model</p> <p>The tailings management facility (TMF) was not explicitly considered in the groundwater model. It was assumed by IAMGOLD that the distance between the open pit and the TMF was sufficient to assume no interactions.</p> <p>Even though the TMF is removed from the open pit, the groundwater system in the area of the TMF is an important aspect of the project. The groundwater flow regime surrounding the TMF and seepage from the TMF need to be simulated to help assess the impact of the TMF, including an estimate of seepage that is expected to bypass the tailings dam seepage ponds (TDSPs).</p> <p>The low grade ore stockpile was not included in the groundwater model since ponds will be placed in low lying areas surrounding the stockpile to collect seepage. This is not a valid reason to exclude such a large mine feature from the model. The groundwater flow regime in the area will be altered by the stockpile and quantification of the seepage from the stockpile, including an estimate of seepage that will bypass the collections ponds, is required to assess the impact of the stockpile on the environment.</p> <p>Include the TMF and low grade ore stockpile in the groundwater model for the EA. The groundwater flow regime in the areas of the TMF and stockpile, groundwater interactions in these areas with other mine components, seepage from the TMF and stockpile, and a prediction of the seepage that will bypass the TDSPs and stockpile seepage collection ponds should be provided in the EA.</p> <p>Include an estimate of the quantities of the seepage from the TMF and stockpile that are expected to reach nearby surface water bodies in the EA.</p>	<p>Seepage control measures were included in the TMF and MRA designs. The seepage control measures put in place follow standard industry practice with the intent of reducing, to the extent practical, seepage losses from both the MRA and TMF. At the TMF, seepage control measures include the seepage collection ditches and ponds as well as the use of geomembrane liner in the perimeter containment embankments. A total of 6 pump stations are planned to be provided at topographic low points around the perimeter of the TMF dams to collect and pump seepage back to the TMF. At the MRA, seepage control measures include seepage collection ditches and ponds in low lying areas. It should be noted that the low-grade ore stockpile is located within the extent of drawdown of the open pit, and as such, seepage from the low-grade ore stockpile would report to the open pit from where it is pumped to the mine water pond and treated prior to discharge.</p> <p>As part of the design of the MRA and TMF, the effectiveness of the proposed seepage control measures were evaluated with a two dimensional seepage analyses for steady state condition using the SEEP/W module of the commercially available software package GeoStudio 2007. Details of this seepage modelling are included in the Addendum to Appendix H (Hydrogeology TSD).</p> <p>The seepage estimates that were calculated for the TMF and MRA were subsequently included in the Water Quality Modelling and are included as a load to the receiving environment.</p>	Additional information has been provided in the Addendum to Appendix H (Hydrogeology TSD).	Appendix H
85	MOECC - Northern Region - Groundwater	<p>Appendix H—Hydrogeology TSD §2.7—Effect Prediction/Attachment II—Groundwater Model</p> <p>While groundwater contour maps were provided, no maps depicting the groundwater flow direction were included in the draft EA, which are helpful in assessing site hydrogeology. In the EA, please include maps depicting the groundwater flow direction.</p>	Groundwater flow maps have been included in the Addendum to Appendix H (Hydrogeology TSD).	Groundwater flow maps have been provided in the Addendum to Appendix H (Hydrogeology TSD).	Appendix H

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86	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD §2.4—Selection of Effects Assessment Indicators</p> <p>Groundwater quality is not considered an effects assessment indicator (EAI) in the draft EA since it is assumed that groundwater discharges locally to surface water. However, groundwater can be used as an indicator to assess impact to water quality before it has discharged to surface water. The monitoring wells installed onsite can be used to assess groundwater quality and identify water quality issues before surface water bodies have been impacted.</p> <p>Groundwater should be included as an EAI in the EA and appropriate assessments on groundwater quality should be completed.</p>	<p>As discussed in Section 2.4 of Appendix J (Water Quality TSD), the effects on groundwater quality as an effects assessment indicator are not considered explicitly, although predictions of seepage concentrations were completed as part of source-term derivation for the evaluation of the potential effects to surface water receivers. The purpose of the EA is to evaluate potential effects on the environment and human health due to development of the Project. Because groundwater is not currently used as a source of drinking water within the immediate area, and because it is assumed that future use of groundwater in the area as a drinking water supply would include proper treatment, there is no need to evaluate groundwater as an effects assessment indicator with respect to human health. Furthermore, groundwater as an effects assessment indicator is not applicable to ecological health due to a lack of exposure pathways. Therefore, there are no receptors to evaluate the potential impact to groundwater explicitly, which is the reason groundwater is not considered as a separate effects assessment indicator for the purposes of the EA.</p> <p>It is agreed that groundwater quality data is useful information and that monitoring wells on-site will yield important information to assess groundwater quality and identify water quality issues during the construction, operations, closure and post-closure phases of the Project. As detailed in Section 5.2.2 of Appendix J, IAMGOLD is committing to the installation of a monitoring well network that will include nested monitoring wells at key locations downgradient of the MRA, low-grade stockpile, TMF, and polishing pond. The monitoring well network will be sampled during the operations, closure, and post-closure phases, as required. The monitoring details, including groundwater quality monitoring, are expected to be further defined through consultations with Federal and Provincial government agencies, Aboriginal groups, the public and other stakeholders through the environmental approvals and permitting processes that will occur following the EA. This groundwater quality data will be used along with other monitoring data to guide adaptive management should the groundwater quality monitoring data indicate that effects to surface water quality may differ from those predicted as part of the water quality effects assessment.</p>	None.	n/a
87	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD §4.3.1—Conceptual Model/Attachment II—Water Quality Modelling Report</p> <p>The water quality model assumes that the effluent discharge from the site does not contain cyanide from the processing plant, nor any constituents generated by the cyanide leaching or destruction process. This assumption is not reasonable since it is fully expected that the TMF will contain cyanide (Attachment II—Water Quality Monitoring Report), which eventually discharges to the environment via the process plant, mine water pond and polishing pond. While it is anticipated that destruction of cyanide will take place, it cannot be expected that destruction will be complete.</p> <p>Remove, or adequately justify, the assumption that the effluent discharge from the site will contain no cyanide or constituents generated by the cyanide leaching or destruction process from the EA and provide updated water quality predictions.</p>	<p>As described in Section 1.1.4 of Appendix J (Water Quality TSD), drainage from the TMF, including the process water containing cyanide, will be directed toward a central reclaim pond within the TMF. The water management strategy is designed to recycle water from the reclaim pond for use at the processing plant. Figure 3 of Appendix J, Attachment II has been corrected to remove an erroneous arrow denoting flow from the processing plant to the mine water pond. Water that reports to the mine water pond, which is then pumped to the polishing pond, consists largely of runoff and seepage from the open pit, MRA, and low-grade ore stockpile. The water that reports to the mine water pond and polishing pond does not include input from the TMF reclaim pond (i.e., the TMF reclaim pond has been designed to not discharge water to neither the mine water pond nor the polishing pond). Therefore, the water management has been designed such that the effluent discharge to the environment from the polishing pond does not contain cyanide.</p>	The figures have been corrected. The erroneous arrows denoting flow from process plant to the mine water pond have been removed.	Chapter 5, Figure 5-2, Appendix J, Attachment II, Figure 3

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
88	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD §4.3.1—Conceptual Model/Attachment II—Water Quality Modelling Report</p> <p>The water quality model appears to assume that all seepage is captured in the seepage collection ponds. This assumption is not reasonable and the quality and quantity of seepage from major mine components (MRA, TMF and low grade ore stockpile) that bypasses the collection ponds needs to be quantified with associated loadings to surface water bodies predicted.</p> <p>In the EA, quantify the volume of seepage that bypasses the collection ponds and provide predictions of associated loadings from major mine features (MRA, TMF, low grade ore stockpile) to surface water bodies.</p>	<p>Estimates of seepage that bypass the collections systems and discharge into the surface water environment were accounted for in the water quality effects predictions. The water quality model assumes a loading rate into surface water features due to seepage from the MRA and TMF. The seepage, and associated mass load, from the low-grade ore stockpile is assumed to report to the open pit, as the drawdown cone due to dewatering of the open pit extends beyond the perimeter of the low-grade ore stockpile; the low-grade ore stockpile is assumed to be processed prior to closure and will not be present during the post-closure phase.</p> <p>Seepage from the MRA is assumed to report to Chester Lake, Three Duck Lakes, Delaney Lake and a portion of the Mollie River system feeding Dividing Lake. The MRA seepage was allocated on a subwatershed basis based on estimated bypass flows as presented in the Addendum to Appendix H (Hydrogeology TSD). Seepage from the TMF is assumed to report to Bagsverd Lake, Un-named Lake #1, Un-named Lake #2 and Bagsverd Creek.</p> <p>The seepage loading rates from the MRA and TMF are presented in table format in the Addendum to Appendix J (Water Quality TSD).</p>	Seepage loading rates have been provided in the Addenda to Appendix H and Appendix J.	Addenda for Appendix H and Appendix J
89	MOECC - Northern Region - Groundwater	<p>§4.5.1—Conceptual Model/ Attachment II—Water Quality Modelling Report</p> <p>In several areas in these sections it is mentioned that there will be vegetative cover on 25% of the MRA. This 25% value does not appear to be explained, however, the value is used to predict a reduction in contact water associated with runoff in the MRA.</p> <p>Please discuss in the EA why only 25% of the MRA is expected to be covered with vegetation and show how the runoff from this 25% will not eventually come into contact with the non-covered portions of the MRA.</p>	<p>The assumption that 25% of the MRA will be revegetated was based on the Conceptual Closure and Reclamation Plan, as described in Section 5.16 of the EA. According to the Conceptual Closure and Reclamation Plan, approximately 25% of the total MRA surface area (i.e., the flat surfaces on the benches) will be covered with a layer of overburden and vegetated.</p> <p>During the post-closure phase, precipitation that lands on the vegetated surface of the MRA will be subject to evapotranspiration with the remaining surplus assumed to infiltrate into the MRA subsurface. The mine rock source term in the water quality model for post-closure assumes that about 25% of the precipitation that lands on the vegetated surface will be lost back to the atmosphere through evapotranspiration. It is assumed that the remaining 75% of the water that lands on the vegetated surfaces of the MRA becomes contact water, either through runoff or subsurface flow. Assuming that about 25% of the precipitation that lands on the vegetated surface is lost is reasonable because greater than 30% of water has been shown to be lost via evapotranspiration from vegetated lands including cover systems (MOE, 2003; Ayres et al., 2012). The text of the water quality modelling report has been revised to clarify this assumption.</p>	Further clarification for the referred to water quality modelling assumption has been provided.	Appendix J, Attachment II, Section 2.5.3.1
90	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD §5.2.3—Sediment</p> <p>This section states that there will be no analyses for nutrients (including ammonia) or cyanide species conducted on sediment samples collected. The presence of nutrients and cyanide species within sediment samples will help to assess the impacts of the project on the environment.</p> <p>In the EA, include nutrients and cyanide species as parameters to be analysed in sediment samples.</p>	The parameters total nitrogen, total phosphorous and total cyanide have been added to the sediment quality monitoring commitments in Appendix J (Water Quality TSD), Section 5.2.3 and Appendix Y.	Added parameters total nitrogen, total phosphorous and total cyanide to the sediment quality monitoring commitments.	Chapter 16, Table 16-1, Appendix J, Section 5.2.3; Appendix Y
91	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD §5.2.2—Groundwater</p> <p>The groundwater monitoring plan seems reasonable but it will be expected that additional information will be provided during the approvals process.</p> <p>Nothing required for the EA but please note that additional information, including monitoring well installation locations and sampling frequency will be required during the approvals process.</p>	The comment has been noted. No response required.	None.	n/a

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92	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD §5.3—Groundwater Quality</p> <p>This section states that aesthetic parameter guidelines are not considered in the draft EA. Aesthetic parameters are to be included as an assessment of groundwater quality in the EA.</p>	<p>The section referenced in the comment is Section 5.3, which is in Appendix J (Water Quality TSD), Attachment I. Aesthetic objectives are “established for parameters that may impair the taste, odour or colour of water or which may interfere with good water quality control practices” and are presented in the context of drinking water objectives that are not based on potential adverse health effects. Parameters that have aesthetic objectives include: chloride, copper, dissolved organic carbon, iron, manganese, sulphate, total dissolved solids and zinc. Of these parameters, only manganese, and to a lesser extent iron, are occasionally present in the existing groundwater at concentrations greater than the aesthetic objectives. This fact does not change the conclusions of the water quality effects assessment. Furthermore, groundwater at the Project site is not expected to be used as a source of drinking water, and if so, it is assumed that any potential use of groundwater as a drinking water supply would include proper treatment and involve appropriate monitoring. Therefore, comparing baseline groundwater quality to aesthetic objectives is not relevant nor does it add value to the EA.</p>	None.	n/a

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93	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD Attachment II—Water Quality Modelling Report: §2.5.3.1—MRA Contact Water</p> <p>The first 20 weeks of humidity cell test results were neglected as they were classified as “first flush”. This omission does not appear reasonable and additional information is required for its justification.</p> <p>Provide additional information in the EA to justify why it is appropriate to omit the first 20 weeks of humidity cell test results. Based on the information provided, it may be deemed necessary by the MOECC that these results be included in water quality predictions.</p>	<p>The humidity cell loading rates from weeks 20 through 34 were applied as a means of selecting data to model the longer term, “steady state” release rates of mass from the MRA, low-grade ore tockpile, and open pit. This is a reasonable approach given the water quality model simulates the ultimate extent of the Project components after 15 years of mining. It is important to understand what the “first flush” represents in a humidity cell and the evolution of the MRA with respect to the deposition of fresh material during the operations phase.</p> <p>The mass released as part of a “first flush” from a humidity cell is dominated by the early time oxidation kinetics; this is when the rate is at its maximum, which is further enhanced by the design of humidity cell test methods and is short-lived. Over time, the rate of oxidation will decrease exponentially due to: i) increased pathways of oxygen ingress to the reaction front, and ii) the formation of secondary alteration rims around reactive particles that create a barrier through which the oxygen has to diffuse to reach the reactive minerals (Gunsinger et al., 2006; Wunderly et al., 1996; Davies and Ritchie, 1986). The characteristic exponential decrease in oxidation rates is exhibited by the general pattern of the decrease in sulphate loading rates in the humidity cells containing samples of Côté Gold Project mine rock (Appendix E, Geochemical Characterization Report, Graphic 7-31).</p> <p>During the first few years of the operations phase, the mine rock piles and open pit surfaces will be relatively small, the flow pathways will be relatively short, and the water-rock interactions occur within fresh material resulting in a greater probability that soluble products generated during the early stages of oxidation will be flushed from the mine rock. Therefore, mass release rates from the MRA and open pit wall during the early stages of operations would be perhaps better characterized by including the short-lived “first flush” humidity cell conditions. However, as the mining operations progress, the mine rock pile and the surface area of the open pit become larger, which results in a smaller percentage of fresh material relative to the whole mine rock pile or open pit. At the end of operations, the mine rock pile is considerably larger, the flow pathways are much longer, and the freshly deposited material within the hydrologically connected zones would represent an immaterially small volume of the overall mine rock tonnage. For example, during year 15 of operations, less than 1% of the overall mine rock will be deposited into the MRA. Therefore, during the later stages of operations, the mass loading rates are better represented by the steady state humidity cell conditions that incorporate the controls on oxidation rates and oxidation product solubility.</p> <p>The water quality model, including the derivation of mass loading rates to simulate contact water quality, uses a scientifically sound approach with the available information to provide conservative, to at-worst realistic predictions of effects to water quality. When comparing the predicted water quality of the drainage from the MRA, low-grade ore stockpile, and open pit to the discussions and data presented in Appendix E (Geochemical Characterization Report), the simulated water qualities of the contact water from the various mine site components aligns well with the general geochemical characteristics of the mine rock. Conducting additional modelling on potential deviations from the predicted effects does not add value to the EA, as the effects predictions are based on the Project as it is currently understood. Given that all model predictions carry some uncertainty, IAMGOLD is committing to conduct water quality monitoring of mine site components and receiving groundwater / surface water environments. Information attained through ongoing monitoring will be used to adjust the adaptive management plan for the Project, on an as needed basis.</p>	None.	n/a
94	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD Attachment II—Water Quality Modelling Report: §2.5.3.1—MRA Contact Water</p> <p>During geochemical testing of the rock materials onsite, diorite was classified as either high arsenic diorite or low arsenic diorite. This idea does not seem reasonable as it is possible that arsenic is fairly consistent within the diorite onsite and average levels of arsenic would be more appropriate.</p> <p>Provide further discussion on the classification of high arsenic diorite and low arsenic diorite in the EA and include details on the changes of the water quality model results that would be observed if an average arsenic level was used for all diorite.</p>	<p>The water quality model was updated with the most recent humidity cell data and simulations were completed by equitably applying the diorite humidity cell loading rates to the total tonnage of diorite. As such, in the revised model, the “higher arsenic” and “lower arsenic” mine rock tonnage designations that were weighted in the original model were removed to evaluate the potential differences in arsenic concentrations when deriving a mass loading rate from the total tonnage of diorite by equally weighting the updated loading rates from all the diorite humidity cells. The results of the simulation with the revised model inputs with respect to arsenic concentrations are presented in the Addendum to Appendix J (Water Quality TSD). Based on these results, the conclusions of the effects predictions presented in the Water Quality TSD are unchanged.</p>	<p>Provided discussion and results of revised model results that equitably apply the diorite humidity cell loading rates to the total tonnage of diorite in Addendum to Appendix J (Water Quality TSD).</p>	Addendum to Appendix J

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95	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD Attachment II—Water Quality Modelling Report: §2.5.3.1—MRA Contact Water</p> <p>Where reported values of parameters were below detection limits, a loading of 50% of the detection limit was assumed for water quality model predictions. It is the opinion of the MOECC that a more conservative approach should be used given the variability of analysis results at parameter levels near detection limits.</p> <p>In the EA, show the sensitivity of the water quality model to these values varied between 50% of the detection limit and 100% of the detection limit.</p>	<p>Applying one half of a method detection limit (MDL) as part of formulating water quality model inputs is a widely used and reasonably conservative approach. There is the possibility that by using one half of the MDL the concentration used in deriving the water quality model input is underestimated by up to 50%. However, the actual concentration could vary below the MDL by several orders of magnitude. Therefore, it is equally or more more probable that by using one half of the MDL the concentration used in deriving the water quality input is overestimated by 50%, or by even an order of magnitude or more. As such, the approach used is considered appropriate and reasonably conservative for the purposes of the EA. Given that the overall approach to modelling the source term is conservative, conducting sensitivity analyses on the way MDLs were applied as part of deriving the MRA loading rates would not add value to the effects predictions.</p>	None.	n/a

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96	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD Attachment II—Water Quality Modelling Report: §2.5—Input Data/§2.5.3—Contact Water Runoff and Seepage/ §2.5.3.1—MRA Contact Water (Table 7—Adjustments to Scaled-Up Waste Rock Loading Rates)/§2.5.5—TMF Runoff and Seepage</p> <p>The values used as adjustment factors for loading rates in the water quality model are not discussed in detail. Further information is required to assess the validity of these values.</p> <p>No water quality model results were provided representing the case where no adjustment factors were used. This scenario would represent a worst case, show the sensitivity of the model to these adjustment factors and provide insight into potential impacts to the environment.</p> <p>An adjustment factor was applied to the loadings of the tailings material due to the assumed discrepancies in the size of material between the tailings and that used for humidity cell testing. However, it is expected that tailings material will be similar in size to the pulverized material used for humidity cell testing since tailings material will be comparatively crushed during processing.</p> <p>Please provide additional details and discussion in the EA regarding the development and use of these adjustment factors. Include model results using no adjustment factors to represent a worst case scenario.</p> <p>Please include such discussion and apply this same approach to all adjustment factors outlined in §2.5—Input Data.</p> <p>Please provide discussion in the EA detailing the comparison in size of material between that used for humidity cell tests and that of the tailings.</p>	<p>Adjustment factors were applied to the predictive water quality model to upscale the humidity cell mass loading rates to the full-scale field loading rates. Humidity cell tests are designed to accelerate leaching under ideal weathering conditions that may otherwise take months or years to occur. Mineral weathering rates determined in the field are commonly orders of magnitude lower than those observed in the laboratory. Differences in climate conditions (i.e., temperature, moisture, air pressures) can affect reaction rates, differences in particle size distribution can affect the surface area that is available for reactions, and the relative contact by infiltrating water with the reactive surfaces decreases as the size of the waste rock pile increases. The application of scaling / adjustment factors to mass loading rates calculated from humidity cell test results is needed to account for differing laboratory and field conditions and is an industry-standard practice. The differences between the humidity cell loading rates and field loading rates are well known, and the Mine Environment Neutral Drainage Program (MEND, 2009) discusses these differences in various parts of the Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. In fact, the guidance provided in MEND (2009), as presented from Figure 4.2, provides recommended steps for the prediction of drainage chemistry and states the following (italics added):</p> <p>“Predict drainage chemistry as a function of time for each mine component (Chapter 7), based on adjustments to static and kinetic test results for the expected flow, contributing mass and degree of aeration or submergence (Chapter 6 and 20 to 21).”</p> <p>Therefore, adjustments need to be made to the geochemistry inputs to reflect the expected site-specific nature of the predicted mass loading rates. Water flow through waste rock piles, for example, will follow preferential flow pathways, particularly under higher surface infiltration rates that occur during the spring freshet or storm rainfall events (Neuner et al., 2012). The higher surface infiltration rates results in the bulk of the water to be transported through hydrogeologically isolated areas where water-rock interaction is with larger, less-reactive particles and for shorter periods of time. Given that humidity cell tests are completed on relatively fine-grained materials, the purpose of the water-rock interaction adjustments are to account for the effect to mass loading rates due to water flowing through preferential flow pathways in the mine rock pile. In addition to differences in flow pathways, key variables that are different between laboratory-scale and full field-scale leaching rates include: temperature, reactive surface area, particle size, gas transport, and other site-specific important characteristics.</p> <p>Literature examples that discuss the differences between laboratory and field leaching rates are as follows:</p> <p>Bailey (2000) presents a study on mine rock from Diavik Diamond Mine investigated effluent from three lined experimental mine rock piles in order to assess the potential to scale results from laboratory studies to field investigations. Predicted mass loadings from humidity cells (using the release rate of sulphate normalized to the mass of rock, surface area of rock and the mass of sulphur in the rock) were compared to those from field lysimeters over a five year period. The normalized sulphate release rates from the field tests were within an order of magnitude to the humidity cell release rates when corrected for the same physicochemical characteristics of the waste rock. The average sulphate release rates from the field tests were about two orders of magnitude less than those from the humidity cells.</p> <p>Malmström et. al. (2000) present results of a study at the well-characterized Aitik site in northern Sweden where mineral weathering rates determined in the laboratory were compared to those determined in the field. Weathering kinetics were compared over three experimental scales (small batch experiments, large-scale column experiments and field observations) using bulk-averaged physicochemical parameters. The field weathering rates were determined to be one to three orders of magnitude lower than the batch experiments, with there being three orders of magnitude difference between the laboratory and full-scale field observations. Maelstrom et. al. (2000) suggest that physicochemical characteristics, such as average temperature, pH, mineral content, flow paths, particle size distribution and potentially other site-specific important characteristics between the scales be considered and represented by scaling factors.</p> <p>Malmström et al. (2000) note that the scale-dependence observed at the Aitik site is consistent with other studies.</p> <p>Response continues on next page.</p>	Appendix J (Water Quality TSD), Attachment II has been revised to reflect the rationale for the adjustment factor.	Appendix J (Water Quality TSD), Attachment II, Section 2.5.5.1

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96 cont	See previous page.	See previous page.	<p>Kennedy et. al. (2012) present results of a study at the Teck Coal Line Creek Operation in the Elk Valley region of British Columbia. Laboratory column and humidity cell test results were compared to results from field barrel and leach pile testing. Sulphate and selenium leaching rates decreased from one to two orders of magnitude, depending on lithology, between the humidity cell results and the leach pile results. Kennedy et. al. (2012) noted another order of magnitude decrease in leaching rates, for a total difference of three orders of magnitude, when the laboratory leaching rates were compared to the estimated valley wide rate.</p> <p>Bertrand et. al. (2006) compared humidity cell test results and field test results for waste rock from the Cumberland Resources Ltd. Meadowbank Gold Project in Nunavut Territory, Ontario. Field cell leaching rates were two orders of magnitude lower than the humidity cell test leaching rates for alkalinity, major ions and arsenic as a result of lower flushing rates and lower surface area under field conditions. Field cell leaching rates were one to two orders of magnitude lower for metals for lithologies where acid rock drainage (ARD) conditions had not developed, and three orders of magnitude lower where the field cells contained rock of varying ARD potential. The differences were attributed to differences in flushing rates and grain size for cells containing the non-acid generating rock and to increased buffering capacity and differences in flushing rates for cells containing rock of varying ARD potential.</p> <p>Overall, the total adjustment factors to upscale the humidity cell loading rates to the full-scale mine rock pile for the effects predictions for the Côté Gold Project range from 0.005 to 0.019. These are considered to be reasonable given that differences between laboratory-scale loading rates and full-scale field loading rates commonly differ by two to three orders of magnitude (Bailey, 2013; Kennedy et al., 2012; Bertrand et al., 2006; Malmström et al., 2000). Modelling without adjustment factors would therefore result in an overly conservative prediction of loading rates that do not provide reasonable guidance for site management or monitoring requirements.</p> <p>The rationale for the tailings humidity cell adjustment factor is to assist with the upscaling of the loading rates from the laboratory-scale humidity cells to the full-scale mine rock pile. As discussed above, the adjustment factor of 0.1 was applied to the tailings humidity cell loading rates to account for differences in rates of reactions that are exhibited due to the different conditions that a humidity cell test sample is subjected versus the on-site ambient conditions in the field. Given that the conditions the tailings are subjected to (as part of humidity cell testing) are created to facilitate the advancement of the weathering reactions, the difference between the laboratory conditions and climatic conditions needs to be accounted for in the water quality model. Therefore, the use of the adjustment factor of 0.1 for the tailings loading rates is valid and conservative, and the text in Appendix J (Water Quality TSD), Attachment II has been revised to reflect the above discussed rationale.</p> <p>The water quality model, including the derivation of mass loading rates to simulate contact water quality, uses a scientifically sound approach with the available information to provide conservative, to at-worst realistic, predictions of effects to water quality. When comparing the predicted water quality of the drainage from the MRA, low-grade ore stockpile, and open pit to the discussions and data presented in Appendix E (Geochemical Characterization Report), the simulated water qualities of the contact water from the various mine site components aligns well with the general geochemical characteristics of the mine rock. Conducting additional modelling on potential deviations from the predicted effects does not add value to the EA, as the effects predictions are based on the Project as it is currently understood. Given that all model predictions carry some uncertainty, IAMGOLD is committing to conduct water quality monitoring of mine site components and receiving groundwater / surface water environments during all Project phases. Information attained through monitoring will be used to adjust the adaptive management plan for the Project, on an as needed basis. The approach to the water quality modelling is consistent with standard industry approaches recommended by MEND (2009), Price (1997) and INAP (2014), and is consistent with the requirements under Ontario closure regulations (O.Reg. 240/00).</p>	See previous page.	See previous page.

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97	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD Attachment II—Water Quality Modelling Report: §2.5.4—Residual Explosives Inputs</p> <p>It was assumed that half of the residual explosive material would stay in the pit while half would be associated with the material that will be removed from the pit. This assumption does not seem reasonable as it is expected that the majority of the explosives residual would be removed from the open pit during progression excavation, increasing the predicted concentration of associated contaminants reporting to the MRA, low grade ore stockpile and processing plant.</p> <p>Please provide justification for this assumption in the EA.</p>	<p>As detailed in Appendix J (Water Quality TSD), Section 1.1.6, the contact water from the open pit, the MRA and the low-grade ore stockpile is directed to the mine water pond. Surplus water in the mine water pond not required for processing activities is directed to the polishing pond and eventually discharged to the environment in accordance with Federal and Provincial discharge requirements. As the predicted water quality in the mine water pond already incorporates the combined residual explosives load from the open pit, the MRA, and the low-grade ore stockpile, adjusting the percentage of residual explosives assigned to the MRA / low-grade ore stockpile to be higher would not materially change the conclusions of the effects predictions.</p>	None.	n/a

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98	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD Attachment II—Water Quality Modelling Report: §2.5.5—TMF Runoff and Seepage</p> <p>The geochemistry of the tailings material was assumed to be the average of the geochemistry results from the mine rock since no tailings specific tests were conducted. This approach does not seem reasonable since tailings material will be more concentrated than the mine rock and will be associated with additional contaminants related to ore processing.</p> <p>For the EA, conduct geochemical tests on material representing the expected tailings and update the geochemistry and water quality model accordingly.</p>	<p>At the time of the effects prediction stage of the EA, and prior to the EA submission, no site-specific data was available for neither the geochemistry of the tailings nor the process water quality produced by the processing plant. For the purposes of the water quality modeling, the tailings geochemistry, including metal leaching characteristics, were assumed to be similar to the mine rock; and as such, the model input for the tailings geochemistry was assigned based on MRA loading rates. Process water quality was derived using knowledge of analogue gold mining project sites and professional judgement; the exception was cyanide concentrations in the process water that were assumed based on the concept-level cyanide destruction treatment specifications.</p> <p>Subsequent to the EA submission, humidity cell testing was performed on three tailings samples produced for the Côté Gold Project. The samples were composites of various tailings prepared as part of IAMGOLD's bench-scale metallurgical testing program. The humidity cells were initiated in March of 2014. Preliminary geochemical source terms are based on the average loading rates obtained over 18 weeks of testing of the three tailings humidity cells. Furthermore, laboratory analysis was performed on the process water quality through an ageing test procedure on Day 0, Day 7, Day 29 and Day 60. The Addendum to Appendix J (Water Quality TSD) provides a tabular comparison of the: i) originally assumed versus most recent average tailings humidity cell loading rate input data, and ii) originally assumed versus most recent process water quality input data.</p> <p>The new tailings humidity cell loading rates and process water quality data were input into the water quality model and predictions were re-simulated. The TMF reclaim pond has been designed to not discharge water to neither the mine water pond nor the polishing pond. The only expected discharge from the TMF to the receiving surface water environment is via seepage to Bagsverd Lake, Unnamed Lake and Bagsverd Creek, all located within the Mesomikenda Lake Watershed. It is important to note that seepage was incorporated into the simulations of both the original (i.e., as presented in the EA) and revised versions of the water quality model. The Mollie River watershed does not receive seepage from the TMF, and the predicted water qualities for receivers in the Mollie River Watershed are therefore unchanged from those presented in the EA.</p> <p>To assess the effect that applying the new tailings humidity cell loading rates and process water quality inputs have on the surface water receiving environment, the original predicted water qualities of key surface water effects assessment locations in the Mesomikenda Lake Watershed were compared to the revised predictions. These comparisons are presented in tables that can be found in the Water Quality TSD addendum. For the average, dry and wet year conditions, the following parameters show a marginal increase in concentrations due to the revised tailings humidity cell loading rates and process water quality data: aluminum, calcium, cobalt, copper, iron, molybdenum, nitrate, potassium, sodium, strontium and sulphate. For the average, dry and wet year conditions, the following parameter concentrations were unchanged due to the revised tailings humidity cell loading rates and process water quality data: total ammonia, un-ionized ammonia, antimony, arsenic, boron, cadmium, chloride, lead, manganese, nickel, total phosphorus, uranium, vanadium and zinc. For the average, dry and wet year conditions, the following parameters show a decrease in concentrations due to the revised tailings humidity cell loading rates and process water quality data: barium, cyanide (total), cyanide (free) and magnesium.</p> <p>The limited change to the water quality predictions is related to the transport pathway between the TMF and the surface water receiver, which is through seepage only. Because the seepage rates that bypass the seepage collection system are low relative to the flow in the surface water receivers (e.g., Bagsverd Creek), changes to the seepage water concentrations have limited effect on the overall mass load within the surface water environment. As such, the revised tailings humidity cell loading rates and process water quality inputs did not result in material changes to the effects predictions or conclusions of the effects predictions. The original model assumptions for tailings geochemistry and process water quality were therefore reasonable and the revised model results do not change the outcome of the impact assessment.</p>	<p>Provided revised model results that include the site specific tailings humidity cell data and process water quality in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>

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99	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD Attachment II—Water Quality Modelling Report: §2.5.5—TMF Runoff and Seepage</p> <p>It was assumed in the draft EA that copper is adsorbed during seepage through the TMF. No discussion of the capacity of the TMF for this adsorption process was provided.</p> <p>Please provide additional information on copper adsorption within the TMF and discuss the copper adsorption capacity of the material relating to the life of the mine and anticipated volume of copper associated with the tailings material.</p>	<p>To not overestimate the copper loadings into the receiving surface water environment from the TMF, an attenuation factor has been applied to the groundwater exiting the TMF to account for the limited mobility that is characteristic of copper in groundwater environments. Copper in aqueous solution is expected to adsorb onto mineral phases (e.g., alumino-silicates, ferric hydroxides, manganese and aluminum hydroxides) as the seepage moves through the subsurface.</p> <p>In addition to the strong adsorption properties of copper (Lund et al., 2008; Dzombak and Morel, 1990), the mobility of copper in the subsurface, including within tailings, is limited by precipitation of discrete copper phases and co-precipitation with non-discrete secondary minerals, such as ferric oxyhydroxides and hydroxysulphates (Gunsinger et al., 2006; Galan et al., 2003; Webster et al., 1998). The formation of secondary precipitates, which is largely driven by the release, transport and solubility of iron and sulphate, will sequester copper through co-precipitation reactions, but also will act as additional subsurface media for copper adsorption. Through these solubility-controlled processes of precipitation, co-precipitation and adsorption under circum-neutral pH, a self-sustaining cycle of copper transport mitigation is expected throughout the life of mine.</p>	None.	n/a

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100	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD Attachment II—Water Quality Modelling Report: §2.5.6—Process Water Quality</p> <p>No tests results were provided to confirm the assumptions made regarding the quality of the process water.</p> <p>Provide test results to confirm the process water quality within the EA.</p>	<p>At the time of the effects prediction stage of the EA, and prior to the EA submission, no site-specific data was available for the quality of the process water that will be produced by the processing plant. As such, assumed concentrations were derived using a combination of typical process water compositions observed at analogous gold mining sites and by using professional judgment; with the exception of cyanide, for which information about the cyanide destruct circuit and estimated treatment specifications was used to derive the cyanide process water input concentration.</p> <p>Subsequent to the water quality modeling and EA submission, ageing tests were conducted on three composite tailings samples that were produced using bench-scale metallurgical tests for the Côté Gold Project. Laboratory analysis was performed on the ageing test decants on Day 0, Day 7, Day 29 and Day 60. The water quality model has been updated using these ageing test results. The process water quality input is now derived from the average concentration of the Day 0 decants for the three composite tailings samples, which is an accepted and widely adopted approach for estimating process water quality at an EA stage of a project. Using the Day 0 results is conservative as the concentrations generally decrease with time through the ageing tests, with some concentration decreasing considerably, which would be expected as solubility controls result in the precipitation and sequestration of metals. Furthermore, cyanide concentrations significantly decrease between Day 0 and 60, as degradation mechanisms take effect.</p> <p>To predict the effect that applying the new tailings humidity cell loading rates and process water quality inputs have on the surface water receiving environment, the original predicted water qualities of key surface water features in the Mesomikenda Lake Watershed were compared to the revised predictions. These comparisons are presented in tables that can be found in the addendum to Appendix J (Water Quality TSD). For the average, dry and wet year conditions, the following parameters show a marginal increase in concentrations due to the revised tailings humidity cell loading rates and process water quality data: aluminum, calcium, cobalt, copper, iron, molybdenum, nitrate, potassium, sodium, strontium and sulphate. For the average, dry and wet year conditions, the following parameter concentrations were unchanged due to the revised tailings humidity cell loading rates and process water quality data: total ammonia, un-ionized ammonia, antimony, arsenic, boron, cadmium, chloride, lead, manganese, nickel, total phosphorus, uranium, vanadium and zinc. For the average, dry and wet year conditions, the following parameters show a decrease in concentrations due to the revised tailings humidity cell loading rates and process water quality data: barium, cyanide (total), cyanide (free) and magnesium.</p> <p>The limited change to the water quality predictions is related to the transport pathway between the TMF and the surface water receiver, which is through seepage only. Because the seepage rates that bypass the seepage collection system are low relative to the flow in the surface water receivers (e.g., Bagsverd Creek), changes to the seepage water concentrations have limited effect on the overall mass load within the surface water environment. As such, the revised tailings humidity cell loading rates and process water quality inputs did not result in material changes to the effects predictions or conclusions of the effects predictions. The original model assumptions for tailings geochemistry and process water quality were therefore reasonable and the revised model results do not change the outcome of the impact assessment.</p>	<p>Provided discussion and results in Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>
101	MOECC - Northern Region - Groundwater	<p>Appendix J—Water Quality TSD Attachment II—Water Quality Modelling Report: §3.0—Model Results</p> <p>This section included no discussion of the water quality results. While a reference to Appendices A through C, which include tabularized data, was provided, no interpretation or discussion of the results was included.</p> <p>In the EA, provide discussion and interpretation of the water quality model results, including anticipated accuracy of the results and potential impacts to the environment.</p>	<p>The EA is organized in a fashion such that technical details, analysis and interpretation are provided in the TSDs. The information provided in the TSDs, including the water quality model results presented in the Water Quality TSD (Appendix J, Attachment II), is used in the main EA report to provide a focused and less technical discussion on how the selected EA indicators are expected to change for each Project phase. Chapter 9 provides a brief summary of the results and describes the effects on water quality in each Project phase. In Chapter 11, the significance of these potential impacts is then assessed, based on the effects described in Chapter 9 and inclusive of the mitigation measures described in Chapter 10.</p>	<p>None.</p>	<p>n/a</p>

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102	Sudbury and District Health Unit	ES-9 Last bullet, EX -10 Project Phases Calculations indicate that the sewage discharge for the site, including bunkhouses, will exceed 10,000L per day, and therefore will be permitted by the Ministry of Environment. However, an indication of the type of sewage system being considered; sewage treatment plant, subsurface discharge or haulage to a municipal sewage treatment system, should be included.	Table ES-2 identifies the preferred alternative for domestic sewage treatment for the Project (package sewage treatment plant). Domestic sewage treatment is discussed in Section 5.14.2, and the alternatives for the domestic sewage system were assessed in Chapter 7 (Section 7.3.14; Appendix U8). All necessary permits required will be applied for pending final approval of the EA for development of the Project, and all regulatory requirements will be complied with.	None.	n/a
103	Sudbury and District Health Unit	Page 4-9 Please include the Sudbury & District Health Unit as a potential government ministry/ agency of interest.	The EA has been revised to include Sudbury and District Health Unit as a potential government ministry / agency of interest.	The Sudbury and District Health Unit has been added to the list of potential government ministries / agencies of interest.	Chapter 3
104	Sudbury and District Health Unit	Page 5-21, Sec 5.10.3 Potable water for consumption and domestic use will be required to meet requirements under the Camps in Unorganized Territory, Regulation 554 R.R.O. 1990. Additionally the SDHU suggests that a potable water storage system be considered as a back-up, in the event that issues arise with the treatment system.	You comment has been noted. IAMGOLD will involve Sudbury & District Health Unit to ensure compliance with the regulation prior to the development of the Project site.	None.	n/a
105	Sudbury and District Health Unit	Page 5-29, Sec 5.11.1 The accommodations complex will be subject to requirements under the Camps in Unorganized Territory, Regulation 554 R.R.O. 1990. Prior to accommodation facilities being put into use, an inspection by an SDHU public health inspector is required to ensure compliance with the above noted regulation. The local SDHU public health inspector is also available for consultation regarding requirements of regulation, prior to initiation, and during construction.	You comment has been noted. IAMGOLD will involve Sudbury & District Health Unit to ensure compliance with the regulation prior to the development of the accommodation complex.	None.	n/a
106	Sudbury and District Health Unit	Page 12-8, Sec 12.3.5, 2nd Bullet Given the typically heavily mineralized nature of native soils found in areas with mining, consideration should be given as to whether "general" Ontario soils are a reasonable comparison for future deposits, or alternatively, should local soil composition be used.	The approach taken to assessing changes in ambient concentrations of trace elements in soil, and by extension vegetation and wildlife, was based on an evaluation of changes in soil chemistry resulting from wet and dry deposition over the lifetime of the Project. As a conservative measure, the quantities of trace metals deposited were assumed to mix in the top one centimeter of soil only. Information on local background concentrations of different elements in soil indicated that concentrations are within the range considered background for Ontario soils. As such, for the purpose of the Human and Ecological Health Risk Assessment (HEHRA), results of depositional modelling were compared to the Table 1 Site Condition Standards (SCS) developed by the MOECC. These are based on an extensive sampling program of undisturbed urban and rural parkland across Ontario. The Table 1 SCS are based on the 98 th percentile of the sampling dataset to account for natural variability. As the depositional modelling did not predict an increase in soil concentrations for any parameters evaluated approaching the Table 1 SCS, it could be concluded that there would be no acceptable risk via direct and indirect soil contact pathways inclusive of uptake by plants and grazing animals.	The following text has been added to Appendix W (HEHRA), Sections 2.1.3.2 and 3.1.2.2: "Incremental changes in soil quality were assessed against criteria representative of "background" soil quality in Ontario (i.e., Table 1 SCS; MOE, 2011). Table 1 SCS were developed by the Ontario Ministry of the Environment and Climate Change and are based on an extensive sampling program of undisturbed urban and rural parkland across Ontario. The Table 1 SCS are based on the 98 th percentile of the sampling dataset to account for natural variability. Information on local background concentrations of different elements in soil indicates that concentrations are within the range considered background for Ontario soils."	Appendix W (HEHRA TSD), Sections 2.1.3.2 and 3.1.2.2
107	Sudbury and District Health Unit	Appendix C-1, Page 11-2, Table 11-1 Please include the Sudbury & District Health Unit in the list of approvals for on-site accommodations and food.	The Terms of Reference (ToR) has been finalized and approved. IAMGOLD understands that approval is required from the Sudbury & District Health Unit for on-site accommodations and food and will seek approval as required at an appropriate time; however, the EA includes and lists only environmental related approvals.	None.	n/a
108	Sudbury and District Health Unit	Appendix C-1, Page 11-1, Sec 11-2 (paragraph 2) Please include the Sudbury & District Health Unit in the list of approvals for on-site accommodations and food.	The ToR has been finalized and approved. IAMGOLD understands that approval is required from the Sudbury & District Health Unit for on-site accommodations and food and will seek approval as required at an appropriate time; however, the EA includes and lists only environmental related approvals.	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
109	MOECC - Northern Region - Surface Water - draft comments	<p>Chapter 5.0—Project Description: 5.10.5 Final Effluent Quality and Discharge</p> <p>This section states that it is expected a receiving water assimilative capacity study will be carried out as part of provincial approvals process to determine acceptable receiving water effluent loadings that will not compromise receiving water aquatic life.</p> <p>Environmental effects cannot be fully evaluated in the absence of receiving-water assimilative capacity study and receiving-water based effluent criteria.</p> <p>The proponent needs to more fully evaluate the alternatives for effluent treatment and discharge by assessing receiving-water assimilative capacity, modeling the mixing zones, and developing receiving-water based effluent criteria. Effluent criteria to be developed taking into consideration the Ministry's "Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters, July 1994".</p>	<p>The design of the Project is not advanced enough to complete a meaningful assimilative capacity study and develop the effluent discharge criteria. As is typically completed, the assimilative capacity study of the receiver and development of effluent discharge criteria will be part of the ECA application process that would follow EA approval. At the permitting stage of the Project, the design will be advanced sufficiently to provide meaningful input to the assimilative capacity study to support the development of the effluent discharge criteria.</p> <p>The purpose of the EA is to assess environmental effects of the Project. For the water quality component, the objective is to assess potential effects to water quality and the significance of any effects due to development of the Project. Water quality modelling was completed to predict changes to the water quality of the surface water receiving environment and provide input to the effects and impact assessments; these predictions included all the major water features adjacent to the Project site. As is standard practice for EAs, the objective of the water quality component of the EA has been achieved through scientifically sound effects predictions and impact assessment.</p>	None.	n/a
110	MOECC - Northern Region - Surface Water - draft comments	<p>Appendix J Water Quality: 4.1 Effects Assessment Indicator Parameters and Comparison Criteria</p> <p>This section states that for effects predictions for water quality of surface water receivers, the simulated concentrations of parameters are compared to the 95th percentile baseline concentrations and against a set of Water Quality Guidelines. The only exception is free cyanide, where a Site Specific Criterion (SSC) of 0.0098 mg/L was derived from the Water Environment Research Foundation (WERF) document titled: Scientific Review of Cyanide Ecotoxicology and Evaluation of Ambient Water Quality Criteria (WERF 2007)."</p> <p>When comparing long-term monthly monitoring data to water quality guidelines the 75th percentile is normally used to characterize background as per the Ministry guidance document "Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters, July 1994".</p> <p>A single baseline percentile value was calculated for the entire study area; this does not take into account spatial variability. Baseline characterization needs to be site-specific.</p> <p>The WERF-proposed criterion for free cyanide of 0.0098 mg/L is not endorsed by this Ministry. The proponent should:</p> <p>(1) Use the 75th percentile to define background water quality, in accordance with the Ministry's "Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters, July 1994".</p> <p>(2) Characterize baseline water quality according to individual sampling locations. This may require additional water sampling where too few data are available to adequately characterize temporal (seasonal/annual) variability.</p> <p>(3) Use the PWQO and CWQG for cyanide.</p>	See response to Comment #679.	None.	n/a

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111	MOECC - Northern Region - Surface Water - draft comments	<p>Appendix J Water Quality: 4.3.1 Conceptual Model</p> <p>This section states the model assumes effluent will not contain cyanide.</p> <p>Process water containing cyanide will be discharged to the TMF.</p> <p>Include cyanide in the assimilative capacity assessment and effluent criteria development.</p>	<p>As described in Section 1.1.4 of Appendix J (Water Quality TSD), drainage from the tailings, including the process water containing cyanide, will be directed toward a central reclaim pond within the TMF. The water management strategy is designed to recycle water from the reclaim pond for use at the processing plant. Figure 3 of Appendix J, Attachment II has been corrected to remove an erroneous arrow denoting flow from the processing plant to the mine water pond. Water that reports to the mine water pond, which is then pumped to the polishing pond, consists largely of runoff and seepage from the open pit, MRA, and low-grade ore stockpile. The water that reports to the mine water pond and polishing pond does not include an input from the TMF reclaim pond (i.e., the TMF reclaim pond has been designed to not discharge water to neither the mine water pond nor the polishing pond). Therefore, the water management has been designed such that the effluent discharge to the environment from the polishing pond does not contain cyanide.</p> <p>The assimilative capacity of the receiver and effluent discharge criteria will be evaluated as part of the ECA application process that would follow EA approval.</p>	The figures have been corrected. The erroneous arrows denoting flow from process plant to the mine water pond have been removed.	Chapter 5, Figure 5-2, Appendix J, Attachment II, Figure 3
112	MOECC - Northern Region - Surface Water - draft comments	<p>Appendix J Water Quality: Water Quality Modeling Report 2.4 Modeled Parameters</p> <p>Modeled parameters did not include mercury.</p> <p>Watercourse re-alignments will result in flooding of land. There is high potential for existing elemental mercury to be converted to its bio-available form, methyl-mercury, leading to increases in the concentration of methyl-mercury in rivers, lakes and residing fish.</p> <p>The proponent should (1) define baseline conditions for water chemistry and fish tissue using advanced sampling and analytical protocols for low level total and methyl mercury according to guidance from MOECC Northern Region; and (2) model the potential impact of flooding on mercury levels in fish tissue (e.g. Johnson et al. 1991. Can. J. Fish Aquatic. Sci. 48: 1468-1475)</p> <p>Also include evaluation of the potential for increased sulphate levels to influence mercury methylation.</p>	See response to Comment #681.	None.	n/a
113	MOECC - Northern Region - Surface Water - draft comments	<p>Appendix J Water Quality: Water Quality Modeling Report 2.4 Modeled Parameters</p> <p>Modeled parameters did not include Total Dissolved Solids (TDS).</p> <p>Previous experience at mine sites shows that discharge of effluent high in TDS can result in meromictic stratification of receiving lake.</p> <p>The proponent should evaluate the potential for effluent TDS to produce meromixis in proposed receivers of mine effluent.</p>	See response to Comment #682.	None.	n/a

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114	MOECC - Northern Region - Surface Water - draft comments	<p>Appendix J Water Quality: Water Quality Modeling Report 2.4 Modeled Parameters</p> <p>Total Phosphorus (TP) was modeled using GoldSim. The majority of TP sample analyses had a high detection limit (20 ug/L).</p> <p>The province's recommended model for TP in Ontario lakes on the Precambrian Shield is the Lakeshore Capacity Model. This model can calculate water quality effects from point source discharges and shoreline development.</p> <p>Model input includes TP data, measured with low detection limit, to characterize average ice-free period lake TP concentration.</p> <p>The TP Interim PWQO and Revised PWQO for Precambrian Shield Lakes are intended to help maintain recreational water quality and to protect cold water fish habitat. Cold water fish habitat in Neville Lake is located in a proposed mixing zone. Mesomikenda Lake, another of the proposed receivers, contains lake trout.</p> <p>The proponent should: (1) Obtain low-level TP data for potential receivers; (2) Determine the impact of the mine on TP concentrations and cold water dissolved oxygen habitat.</p> <p>Guidance on TP sampling, analysis and modeling are provided in the document "Lakeshore Capacity Assessment Handbook Protecting Water Quality in Inland Lakes on Ontario's Precambrian Shield. May 2010 " prepared by Ministry of Environment, Ministry of Natural Resources, and Ministry of Municipal Affairs and Housing.</p>	See response to Comment #683.	None.	n/a
115	MOECC - Standards Development Branch	<p>Human and Ecological Health Risk Assessment (May 2014), Appendix W of the Draft Environmental Assessment Report (Version 4) for the Côté Gold Project.</p> <p>Our reviewers concluded that the report is missing key aspects and information needed to conduct a proper review. Through the report, there are multiple references to sections and other Appendices (e.g. Appendices F, G, J and K, L, M and N) of the EAR that appear to contain some of this information. However, it cannot be expected for the reviewers to have to navigate through all these sections and appendices in order to extract all the relevant information needed to support the RA.</p> <p>Base on the above and in order for SDB to conduct a proper review, it is recommended that a consolidated RA report be prepared including all the information required to supports the RA. This report should be re-submitted to the MOE for review.</p>	The risk assessment relies on information, data and modelling completed by many other disciplines in the EA process. Where other appendices are referenced in the HEHRA, these are being provided to point the reader to the complete source document for additional detail. Information from those sources that is directly relevant to the evaluation of human or ecological risk is provided within the risk assessment itself. As such, there should be little need for a reviewer to navigate multiple appendices unless they are verifying information, which presumably will be reviewed by other discipline experts. The report was structured in this manner to minimize the duplication of information.	None.	n/a
116	MOECC - Northern Region - Environmental Planning - Air Quality	<p>EIS report, Section 6.3.2 pages 6-7 – 6-13 and Appendix F - Air Quality TSD, Section 4 and Appendix I.</p> <p>For the background air quality, baseline air quality data was obtained from a number of sources including the Environment Canada National Air and Pollution Surveillance (NAPS) Network and the Atmospheric Environment Service's Canadian Air and Precipitation Monitoring Network (CAPMoN). In addition, an on-site air quality monitoring was also conducted for approximately three months in 2013, including TSP and metals in TSP, PM₁₀, SO₂ and NO₂ for comparison to long-term air quality data. Average and 90th percentile of values were presented and compared with standards/AAQCs. The report indicated that regional air quality data from MOE stations (Sudbury, Sault Ste Marie and North Bay) was considered to be conservative when used as baseline data for the regional study area considering the remote location of the study area, but it was not clear what the background concentration for each compound is</p> <p>The report should clearly state what the background concentration is for each contaminant.</p>	A table summarizing the background concentrations for each effects assessment indicator has been prepared and included in the Addendum to Appendix F (Air Quality TSD).	Background concentrations have been included in an Addendum to Appendix F (Air Quality TSD).	Addendum to Appendix F

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117	MOECC - Northern Region - Environmental Planning - Air Quality	EIS report, Section 6.3.2 page 6-11 The report stated that "A number of these metals have Ambient Air Quality Criteria (AAQCs) in Ontario (MNR, 2012a) based upon the potential health impacts" The reference cited should be MOE instead of MNR Revisit and revise the reference.	The comment has been noted. The citation has been corrected, and the reference remains accurate. Two additional MNR references and a citation have been corrected.	The citation (MNR, 2012a), provided in Section 6.3.2 has been corrected to (MOE, 2012). The citation (MNR, 2012b) provided in Section 6.4.7.2, first paragraph, has been corrected to (MNR, 2012a). The following reference: "Ontario Ministry of Natural Resources (MNR). 2012b. Draft Significant Wildlife Habitat Ecoregion 3E Criterion Schedule." has been corrected to: "Ontario Ministry of Natural Resources (MNR). 2012a. Draft Significant Wildlife Habitat Ecoregion 3E Criterion Schedule." The following reference: "Ontario Ministry of Natural Resources (MNR). 2012c. Meeting with MNR. November, 2012." has been corrected to: "Ontario Ministry of Natural Resources (MNR). 2012b. Meeting with MNR. November, 2012."	Sections 6.3.2, under "Other Parameters Associated with Ore Mining and Processing" Section 6.4.7.2, first paragraph. Section 19.6, Chapter 6 references
118	MOECC - Northern Region - Environmental Planning - Air Quality	EIS report, Section 6.3.2 Table 6-6, Appendix F, Section 4.2.5 Table 4-6 and Appendix I Section 3.2.5 Table 3-11. Background metals concentrations were summarized in the above tables based on the monitoring results from air samples collected at the on-site Cote Gold station. Average concentrations for some metals, for instance chromium, lead and nickel were less than method detection limits, but no information was provided as to how the average concentrations were calculated. Provide an explanation on the calculation of the average concentrations when metals concentrations are lower than detection limits.	Non-detectable concentrations were handled in accordance with the recommendations of the MOECC's Operations Manual for Ambient Monitoring in Ontario. All non-detects were reported as ½ the detection limit, and the average concentrations were calculated based on ½ the detection limit. As a result, samples sets with mainly non-detectable levels are reported as an average that is below the detection level.	None.	n/a
119	MOECC - Northern Region - Environmental Planning - Air Quality	Appendix F, Appendix I Cote Gold Project Baseline Report Air Quality Final Version. In the List of Appendices, it showed Appendix A: Air Quality Baseline and Background Monitoring Data, but Appendix A was not included in the document. Appendix A should be included in the report.	The comment has been noted. Appendix A, of Appendix I of Appendix F (Air Quality TSD) has been included in the Amended EIS / Final EA Report.	The appendix has been included with Appendix F of the Amended EIS / Final EA Report.	Appendix A, of Appendix I, of Appendix F

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120	MOECC - Northern Region - Environmental Planning - Air Quality	EIS report, Section 9.2 Page 9-13, Section 11.2.1 Table 11-3, and Appendix F, Section 5.1 Page 5-1. The report indicated that air quality effects from construction phase will be less, and of shorter duration compared to those from the operations phase. The Proponent also stated that air quality impacts had been assessed to be not significant with the application of mitigative measures, but no air quality assessment was conducted for the construction phase. It is recommended that an assessment for construction phase be conducted to support the statements provided by the Proponent. The air quality assessment for the construction phase should include TSP, PM ₁₀ , PM _{2.5} and NO _x and compare with relevant applicable criteria.	A quantitative comparison of the material movements and on-site traffic during construction and material movements and on-site traffic during operations is provided as part of the Addendum. The comparison demonstrates that there is less activity during this period, and therefore emissions rates will be less. As such, construction effects will be of a lower magnitude than those during the maximum year of the operations phase that was assessed as not significant within the EA.	None.	n/a
121	MOECC - Northern Region - Environmental Planning - Air Quality	Appendix F, Section 5.2.3. The cumulative air quality impacts including background concentrations for PM and CACs were mentioned and compared with the provincial AAQCs, but no results were included in the report. Results for all pollutants with both modelled concentrations and background concentrations should be provided and presented in a single table, e.g. in Tables 5-2 and 5-3, and also presented graphically (isopleths) for cumulative assessment. It is recommended that the frequency analysis also be completed on the cumulative impacts including background concentrations, and presented graphically to provide information on the specific locations potentially frequent exceedances of the AAQCs.	Table 5.3 of Appendix F (Air Quality TSD) demonstrates that the predicted effects at all sensitive points of reception were well below the respective AAQC, even when the cumulative effect of background + modelled effects were considered. Other locations where exceedances are noted are at or near the property boundary with limited potential for human exposure.	None.	n/a
122	MOECC - Northern Region - Environmental Planning - Air Quality	EIS report, Section 16.4 Table 16-1, and Appendix F, Section 7.0 Page 7-1 and Table 7-1. An ambient air monitoring program was proposed by the Proponent to assess the air quality effects and the effectiveness of the mitigative measures implemented during construction and operations phases. The proposed air quality monitoring program includes TSP and metals, and passive sampling for SO ₂ /NO _x throughout the duration of the construction and operation phases. PM ₁₀ , PM _{2.5} and hydrogen cyanide should also be included in the monitoring program based on the modelling results. It should be noted that passive sampling will just give approximations of long term exposure, but no information about acute short term impacts. Significant long term impacts from site vehicles, generators and blasting etc. are unlikely to occur. The monitoring parameters should also include PM ₁₀ , PM _{2.5} , dustfall and hydrogen cyanide, in addition to TSP (including metals) based on the modelling results. It is suggested a continuous NO _x monitoring be conducted instead of the passive sampling considering about the short term impacts and modelling results. In addition, prior to initiating ambient air quality monitoring, a monitoring plan should be submitted to the ministry for review and approval. The air monitoring program should follow the ministry's guidance document - Operations Manual for Air Quality Monitoring in Ontario (PIBS 6687e).	IAMGOLD will directly manage emissions from Project point sources associated with mining and ore processing activities, as stipulated in the applicable Provincial ECAs. In addition, the Provincial ECA for mining operations will require an ambient air monitoring program as a condition of approval to assess effects of fugitive dust from roads, stockpiles and open pit operations. The air monitoring program will be developed in consultation with the MOECC in order to ensure that it is appropriate and protective of ambient air quality. A monitoring plan will be submitted to MOECC for approval that details the target parameters, methodologies, and the number and location of monitor stations. It is expected that the monitoring will include TSP and metals on the TSP size fraction, PM ₁₀ , dustfall and passive monitoring for NO ₂ and SO ₂ . The PM _{2.5} concentrations would be monitored as a fraction of the PM ₁₀ ; this monitoring for PM _{2.5} is appropriate as it is the larger size fractions that are of primary concern from material handling and mining activities, while PM _{2.5} is emitted from combustion sources and not mining and material handling fugitive dust sources. Further, significant transboundary influences of PM _{2.5} are not anticipated from this site as the maximum effects were modelled along the property boundary. The final selection of target parameters and station locations would be done as part of the ECA approval process with the MOECC.	None.	n/a
123	Ministry of Northern Development and Mines	Are there any rehabilitated hazards en route the proposed transmission corridor? - If so under the <i>Mining Act</i> , they are required to seek Director approval to disturb any previously rehabilitated mine features (including the mine proposed areas and the area associated with the proposed transmission line). Site should be identified prior to moving forward with construction so permissions can be given. NOTE- this is not a 'permit' but simply authorization through a formal request/letter to the Director.	So far, during the baseline work carried out, no rehabilitated hazards have been identified that would be disturbed by construction and operation of the transmission line. Should any previously rehabilitated mine features be discovered during further Project planning, authorization will be sought.	None.	n/a
124	Ministry of Northern Development and Mines	Section 2.2 In the list of Provincial EA's the Disposition of Crown resources is listed. MNDM requires that their Class EA (Class Environmental Assessment for Activities of the MNDM under the <i>Mining Act</i>) for the discretionary tenure decision related to the disposition of surface rights for mining and mining related purposes be included in this list specifically.	The MNDMs EA for the Disposition of Crown Resources has been added to the list of Provincial EAs in Section 2.2.	The list of EAs has been updated to include "the Class EA for activities of the Ministry of Northern Development and Mines (MNDM) under the <i>Mining Act</i> ."	Section 2.2

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
125	Ministry of Northern Development and Mines	Section 4.4.2 talks about the comments received by Aboriginal groups and generally what they were related to. Is there somewhere within the or throughout the document that you address specifically lets say the effect on fish habitat with regards to the comments or concerns of the First Nations group? It would be good to tie the two together and not just mention the concerns and then not specifically address them in the alternatives (which you may do, I just haven't gotten there yet).	Section 9 of the EIS / Draft EA Report includes a series of tables that addresses comments and concerns raised by government, Aboriginals and the public during the EA consultation phase. For example, comments that pertain to aquatic biology, including fish, are addressed in Table 9-8. All comments raised during review of the EIS / Draft EA Report, included those by Aboriginal groups, have been addressed through this response matrix included as Appendix Y of the Amended EIS / Final EA Report. The Amended EIS / Final EA Report has been updated to reflect comments raised during review of the EIS / Draft EA Report. Column 6 of this table provides a summary of where the Amended EIS / Final EA has been revised to address comments on the Draft EA. The evaluation of alternatives was undertaken in consideration of comments received and the results of consultation and discussions with the general public, Aboriginal communities and government reviewers. Information collected during this engagement helped to determine the choice of alternatives considered and the relative importance of the individual performance objectives. For example, initial MRA alternative locations were to the northeast, southeast and south of the open pit. As a result of engineering design and comments received, one MRA to the south of the pit will be developed.	None.	n/a
126	Ministry of Northern Development and Mines	Section 4.4.4.1 Small quantity of mine rock is potentially acid generating - what is the specifics of this? The calculations should be discussed in more detail in the document. I know that it is within Appendix E as well. Rob Purdon will comment further on this.	As described in Section 6.3, the vast majority of overburden and mine rock have been analysed to be non acid generating. These findings have been incorporated in the prediction of effect for water quality, in Section 9.6. Detailed geochemical results are provided in Appendix E (Geochemical Characterization Report) and the water quality modelling results are provided in Appendix J (Water Quality TSD).	None.	n/a
127	Ministry of Northern Development and Mines	Section 4.4.4.6 The last sentence in this section - reads ...two mine rock areas close to Mesomikenda Lake have not been removed from the proposed project. I think you mean to say ...have NOW been removed? Since you just have the one MRA proposed.	Summaries of comments and responses that were received prior to preparation of the EA are now located in Tables 4-7 (Aboriginal Communities), 4-11 (Stakeholders and Public) and 4-15 (Government Agencies). Reference to multiple mine rock areas near Mesomikenda Lake has been removed.	Chapter 4 has been reorganized to present comments by stakeholder and Aboriginal community.	Chapter 4
128	Ministry of Northern Development and Mines	Section 5.5.1 It might be more helpful to have more of a description of the ditching and seepage collection ponds around the MRA. Is there only going to be one ditch, will it be all the way around the MRA, is there room for two ditches to ensure the collection of any flow through the mine rock, are two ditches not necessary, why? etc. etc.	The water management system proposed is described in Section 5.10. A series of ponds will be established around the MRA. As shown in Figure 5-3, 14 ponds are currently planned to be established around the MRA.	None.	n/a
129	Ministry of Northern Development and Mines	Section 5.7 Same as above. More details on the ditching and collection ponds would be nice here.	See response to Comment #128.	None.	n/a
130	Ministry of Northern Development and Mines	Section 5.10.4 It is noted that most of the rocks will be non-acid generating, if there are tailings that are acid generating will they be handled differently and how? There is no mention of how the TMF will manage these if they are found to be more common than expected. Since tests are still ongoing and it cannot be determined with confidence that the tailings will be completely non-acid generating it might be wise to describe and plan for handling of the acid-generating tailings/rock.	An assessment of 93 simulated tailings samples indicated that the tailings are non-acid generating. Average NPR of the tailings samples was 11, indicating that significant neutralization capacity was present.	None.	n/a
131	Ministry of Northern Development and Mines	Section 5.16.2-5.16.4.4 The two stages of post closure was an interesting way of describing the different phases. The monitoring program for post closure is not described in detail here, which is fine, however that detail will be required in the actual closure plan.	The comment has been noted. No change to the EA is required.	None.	n/a

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132	Ministry of Northern Development and Mines	Section 6.5.2 Is it mentioned how the knowledge gained through the background research and the TK/TLUs was taken into consideration for the development of the various components of the project? How the project was changed to mitigate or avoid areas of cultural significance for instance.	The TK / TLU study conducted on behalf of the Wabun Tribal Council identified cultural sites and uses near the Project area. Cultural sites and uses included a wildlife point (bald eagle nest) that will be removed outside of the breeding season. IAMGOLD is in ongoing discussions with First Nations and the Métis Nation of Ontario to minimize effects on these groups.	None.	n/a
133	Ministry of Northern Development and Mines	Section 6.5.2.2. It states that no information was provided about the waterfowl hunting route or portage route and if these were currently being used, along with other examples of information that would have been useful. Did IAMGOLD do further consultation specifically to get these answers (current use of the sites) to help them develop/ alter the project? Is this covered in Section 10?	IAMGOLD provided funding to the Wabun Tribal Council so that their preferred consultant, W.C McKay Consulting Services (W.C. McKay) could conduct a TK / TLU study with the Wabun member communities potentially affected by the Project. The TK / TLUs were conducted under data sharing agreements between Mattagami First Nation and Flying Post First Nation and IAMGOLD. IAMGOLD has carried out consultation activities throughout the EA process, which are detailed in Chapter 4. Mitigation measures specific to hunting and the use of the canoe route are outlined in Chapter 10.	None.	n/a
134	Ministry of Northern Development and Mines	Table 11-3 In the Traditional Land use on page 11-33 it discusses the cultural, spiritual and ceremonial sites - effects and the mitigation for this. The mitigation measure is to inform workers of locally nesting raptors, but then it says under magnitude that the project does not overlap important cultural sites. Why are nesting raptors under this section? explain a bit more if that is where it belongs.	Nesting raptors were included in this section due to the importance of the eagle in traditional Ojibwe culture. A more detailed description of why nesting raptors are important to Aboriginal people will be included in Table 11-3.	The following mitigation measure has been added: "Consult with Mattagami First Nation and Flying Post First Nation on how the removal of an eagle's nest can be conducted in a culturally sensitive manner, and be open to hosting a traditional ceremony (ies) on site should one be requested."	Tables ES-3, 10-3, and 11-3
135	Ministry of Northern Development and Mines	Section 14.2.1 Operational mines - Hollinger open pit - Goldcorp. Is a new one that should also be calculated into the cumulative effects analysis. I see you have it as a note, but it is a significant mine that should be in the list of operation mines.	Agreed, the Hollinger Mine has been added to the list of active mines. This does not change any conclusions of the cumulative effects analysis.	Hollinger Mine has been added to the list of active mines in Section 14.2.1. The following text has been removed: "Note that Goldcorp's Hollinger Mine has recently commenced mining activities."	Section 14.2.1
136	Ministry of Northern Development and Mines	Cumulative effects should also take into consideration the past mines or larger exploration projects in the area. (AMIS sites may come into play here).	Historic mining and exploration activities are not expected to have effects on the Project. Existing exploration projects are included in Section 14.2.1.	None.	n/a
137	Ministry of Northern Development and Mines	Sudbury Prospectors and Developers should read Sudbury Prospectors and Developers Association.	The Amended EIS / Final EA Report has been revised to correct this typographical error.	This typographic error has been corrected in the Amended EIS / Final EA Report.	Executive Summary, Chapter 3
138	Ministry of Northern Development and Mines	The table for impact assessment matrix is helpful and addresses items directly impacted by the Cote Gold Project operation site. Is there another table that lists this for the hydro line? Will or has this been looked at. There are a number of mining claims along the hydro line corridor proposed, as well as a number of AMIS sites which should be taken into consideration.	The transmission line is included in the existing impact assessment matrices. IAMGOLD is currently working on obtaining all easement requirements along the transmission line. So far, during the baseline work carried out, no rehabilitated hazards have been identified that would be disturbed by construction and operation of the transmission line. Should any previously rehabilitated mine features be discovered during further Project planning, authorization will be sought.	None.	n/a

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139	Ministry of Northern Development and Mines	<p>Section 5.3.4, Appendix E, Geochemical Characterization Report</p> <p>I concur with the proponent's conclusion that the bulk of the open pit materials and overburden will not have a high net potential for acid rock drainage. However I note the following:</p> <ul style="list-style-type: none"> ▪ Most mine rock has low total sulphur concentrations, however, some samples returned up to ¼% sulphide and up to 7% of the samples were identified as Potentially Acid Generating (PAG). Additionally, some samples were identified with low Neutralizing Potential (NP). ▪ The proponent has used a proxy approach to estimate NP and potential acidity to guide future characterization of mine rock. <p>I am generally supportive of proxy techniques provided they are supported by appropriate technical justification and an ongoing auditing program.</p> <p>The proponent needs to provide details of a program to audit the proxy technique for characterization of mine rock using the proposed Leco Carbon and Sulphur analyses to estimate NP and MPA during operations.</p> <p>I am concerned that there is no proposed segregation of PAG vs. non-PAG mine rock. The proponent contends that such segregation is not required given the overall low sulphide content combined with the neutralization potential which should be sufficient to mitigate any local acid generating conditions. This would occur in an ideal situation where PAG material is adequately mixed so that local ARD would be mitigated by adjoining material with a net neutralization potential. If this ideal situation does not develop, we could see pockets of PAG rock situated in oxidizing areas of the waste rock pile generating low pH runoff. Unfortunately, it does not appear that the proponent has constructed a block model to map out the three dimensional distribution of the PAG material. This would be very helpful in determining the spatial distribution of the PAG relative to the mining sequencing and could better inform decision making regarding the need to segregate PAG from non-PAG rock.</p> <p>If there is to be no segregation and separate storage of PAG from non-PAG materials, the proponent needs to construct a block model to illustrate the spatial distribution of PAG materials and provide details as to how the PAG rock will be handled in the mining sequence so as to mitigate the potential for ML/ARD.</p> <p>I note that the proponent has not performed any humidity cell work on the tailings and has only preliminary data from the humidity cells for mine rock and other materials. This is a key component that is missing from the geochemical characterization as it will speak to the potential for long term water quality impacts for the tailings and waste rock piles which, in turn, have ramifications for efforts to mitigate such impacts following closure.</p> <p>The proponent should provide results of humidity cell work on tailings samples from test milling to provide an indication of the ML/ARD characteristics of the tailings and provide insight as to the lag time to the onset of acidic conditions.</p>	<p>Analysis of the acid-base accounting and proxy data for the waste rock has not indicated that any discernible spatial trends are present regarding the distribution of sulphides or neutralization potential. The occurrence of occasional higher sulphide concentrations appears to be random and not controlled by any lithological or structural features. It is anticipated that these occasional higher sulphide concentrations, and their resulting lower NPR values, will occur as minor random volumes within the pit rock that will be surrounded by low sulphide materials with high neutralization potential that will neutralize any acidity that could occur from these low NPR volumes.</p> <p>IAMGOLD intends to conduct a monitoring and verification program of the mine rock geochemistry during operations. Chapter 16, Table 16-1, of the EA report.</p> <p>Kinetic testing is continuing on mine rock samples and has been underway since March 2014 on three tailings composite samples produced during the test milling program.</p> <p>Results from the tailings testwork indicate that the tailings leachates are circum-neutral with low metals concentrations. These results are consistent with the static testing results that indicate the vast bulk of the tailings are non-acid generating with a low content of sulphide and metals. This test monitoring program is ongoing and will be updated periodically with results provided for review and comment.</p>	None.	n/a
140	—	This comment number has not been assigned.	—	—	—

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
141	Ministry of Northern Development and Mines	<p>Section 5.16.2.1</p> <p>There is potential for Mine Rock to leach metals despite the low volume of PAG material, however the Project Description indicates that “issues with regards to the flooded open pit water chemistry are not anticipated.” Additionally, Appendix J – Water Quality Technical Support Document describes mitigation measures and modelling conclusions on water quality and speaks to a lack of exceedances of Water Quality Guidelines. This does not appear to recognize the requirements of the Mine Rehabilitation Code.</p> <p>The proponent should be advised that the Mine Rehabilitation Code requires that the surface water quality of a closed out site shall meet the PWQO or, where the proponent establishes that it is not practicable to meet the objectives set out therein, shall meet the background levels for water quality if the proponent establishes scientifically what those levels were. While the proponent has presented sufficient information to move the project to the next stage, the proponent should be advised that MNM will be seeking more clarity around surface water quality and contingency plans through the Closure Plan.</p>	The comment has been noted. No change to the EA is required.	None.	n/a
142	Ministry of Northern Development and Mines	<p>Section 5.16.2.2</p> <p>The Project Description indicates that “flat surfaces of the Mine Rock Area will be partially covered with a layer of overburden and partially vegetated”.</p> <p>One of the ways to control/reduce water quality impairments from waste rock piles is to grade surfaces to shed water and reduce infiltration. It is not clear how extensive these “flat areas” will be but the proponent must contour all surfaces of the Mine Rock Area to reduce infiltration.</p>	The comment has been noted and the EA has been revised accordingly (see response to Comment #82).	Added a new sentence “Areas which receive a layer of overburden will be designed to prevent pooling of water.”	Section 5.16.2.2, second paragraph, and Table 5-2
143	Ministry of Northern Development and Mines	<p>Section 5.16.4.1</p> <p>The Project Description indicates that, if water quality of the Mine Rock Area is not deemed suitable for direct discharge to the environment once the pit lake has flooded begins to discharge, the proponent will continue to pump water from the seepage collection ponds into the pit.</p> <p>It is not clear how directing impaired water into the open pit (which could have water quality impairments as well) will improve overall discharge water quality from the site in the second closure stage. The proponent should be advised that more details with respect to their contingencies for dealing with potential surface water quality impairments from the Mine Rock Area will be required to support a Closure Plan submitted for filing.</p>	Comment noted. Additional details for post closure water management contingencies will be provided in the closure plan.	None.	n/a
144	Ministry of Northern Development and Mines	<p>Section 5.16.2.4</p> <p>The proponent has described how the Tailings Management Facility will be closed with the assumption that the tailings will be NAG. This assumption is based on Acid Base Accounting and elemental content work. However, the proponent has not performed any kinetic testing on samples of tailings produced during test milling and it may be premature to conclude that ML/ARD will not be a long term issue in the absence of the kinetic testing.</p> <p>The proponent should provide results of humidity cell work on tailings samples from test milling to provide an indication of the ML/ARD characteristics of the tailings and provide insight as to the lag time to the onset of acidic conditions.</p>	<p>Kinetic testing is continuing on mine rock samples and has been underway since March 2014 on three tailings composite samples produced during the test milling program.</p> <p>Results from the tailings testwork indicate that the tailings leachates are circum-neutral with low metals concentrations. These results are consistent with the static testing results that indicate the vast bulk of the tailings are non-acid generating with a low content of sulphide and metals. This test monitoring program is ongoing and will be updated periodically with results provided for review and comment.</p>	None.	n/a

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145	Sanatana Resources Inc.	In Sanatana Resource Inc.'s view, the information contained in the Draft EA Report, particularly the impact assessment matrices is misleading as the Draft EA Report does not disclose (i) Sanatana's long standing position that the proposed easements for the project will materially impact Sanatana and (ii) that the access changes have not been granted by the Mining Commissioner and are subject to the Mining Commissioner Proceedings and other legal proceedings. At a minimum, in order to rectify what Sanatana views as misleading disclosure, the Draft EA Report must disclose: (a) that it is Sanatana's position that proposed easements, if granted, will materially impact Sanatana; (b) that the proposed overlaps or changes to access will limit, among other things, Sanatana's ability to exercise exploration activities; and (c) the existence of the Mining Commissioner Proceedings in order to clarify that the proposed access changes, as such changes pertain to the Watershed Property, have not yet been granted and may never be granted.	The Project overlaps or changes access to some mining claims but will not limit the ability of adjacent mineral rights holders' ability to exercise exploration activities. IAMGOLD continues to be of the opinion that adjacent mineral rights holders, including the mineral claims held jointly with Sanatana, will not be impacted by Project development and operations. IAMGOLD has edited the Amended EIS / Final EA Report to note Sanatana's concerns.	A new paragraph has been added to Section 9.10 of the Amended EIS / Final EA report and Appendix O (Land and Resource Use TSD) which states: "Sanatana Resource Inc. (Sanatana) submitted a comment on the EIS / Draft EA Report stating "Sanatana's long standing position that the proposed easements for the Project will materially impact Sanatana" and that "the access changes have not been granted by the Mining Commissioner and are subject to the Mining Commissioner Proceedings and other legal proceedings." IAMGOLD continues to be of the opinion that adjacent mineral rights holders, including the mineral claims held jointly with Sanatana, will not be impacted by Project development and operations."	Section 9.10 and Appendix O, Section 3.1.2.1
146	MOECC - Environmental Approvals Branch - Noise	The N&V Report states that construction activities will take place at night time. It needs to be confirmed with Municipality that night time construction activities are allowed and indicated in the N&V Report.	The Project does not fall within the boundary of a specific municipality and therefore this comment does not apply to this EA.	None.	n/a
147	MOECC - Environmental Approvals Branch - Noise	Table 2-2 of the N&V Report indicates that receptors include cottage residential sites, recreation access points, and tourist establishment areas, but not the vacant lots in the study areas that are zoned for future noise sensitive uses. Such vacant lots need to be assessed to demonstrate that the facility will operate in compliance with Ministry Publication NPC-300.	Vacant lots were not identified at the time of the assessment. However, the only accessible vacant lot identified is very close to POR12. IAMGOLD expects that to be compliant with the NPC-300 limit. This vacant lot will be included in the assessment during the ECA process.	None.	n/a
148	MOECC - Northern Region - Environmental Planning - Land Use	Section 9, Description of Project Effects , S.9.2, p. 9-12 "Air Quality" It is not clear from the description provided whether potential effects related to the on-site aggregate pits were assessed. Clarify whether effects related to proposed on-site aggregate pits were considered.	There are currently two aggregate pits (designated as Category 9 – Aggregate Pit on Crown Land, "Pit above Water" - under the <i>Aggregate Resources Act</i>) permitted within the Project site which contain approximately 500,000 m ³ of aggregate. The mine will provide additional NAG mine rock for tailings dam construction and haul road aggregate, as needed. The potential effects of aggregate removal from these pits for construction and mine / TMF development will be detailed in the Addendum.	The effects from aggregate pits have been included in the Addendum to Appendix F. No changes in the EA report are required.	Addendum to Appendix F
149	MOECC - Northern Region - Environmental Planning - Land Use	Section 9, Description of Project Effects, S. 9.3, "Noise and Vibration", S 9.3.2.1, 9.3.2.2 (p. 9-18 – 9-20) It is not clear from the description provided whether potential effects related to the on-site aggregate pits were assessed. Clarify whether effects related to the proposed on-site aggregate pits were included.	Effects related to the proposed aggregate pits were not included. An addendum to Appendix G (Noise and Vibration TSD) has been developed which includes an assessment of noise effects from the aggregate pits. In summary, the inclusion of the aggregate pits does not change the magnitude of the effects on receptors nor the impact assessment conclusions.	The effects from aggregate pits have been included in the Addendum to Appendix G.	Appendix G
150	MOECC - Northern Region - Environmental Planning - Land Use	Section 9, Description of Project Effects, S. 9.10, "Land and Resource Use", S 9.10.2.3 (p. 9-61) This section addresses effects remaining "at the end of the closure phase", but does not speak to potential effects during closure activities. Address potential effects during closure phase.	The text has been modified to indicate that the effects described in the operations phase will continue but will gradually decrease with time.	Added sentence stating: "At the commencement of the closure phase, effects will be similar to effects during the operations phase. These effects are expected to gradually decrease as reclamation of the Project occurs."	Section 9.10.2.3

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151	MOECC - Northern Region - Environmental Planning - Land Use	<p>Section 10, Mitigation Measures, Table 10-3, p. 10-38 "Land Use"</p> <p>Table refers to use of 300 m (minimum setbacks as per the MOE D-Series Guidelines).</p> <p>Note that, in the absence of technical studies which identify an actual influence area of less than 1000 metres, the minimum required separation distance between sensitive land uses and Class III Industrial Facilities is 1000 metres. Where an actual influence area of less than 1000 metres is identified through the completion of technical studies, the minimum required separation distance may be reduced to a distance equal to or greater than the identified influence area. Separation distances less than 300 metres between sensitive uses and Class III Industrial Facilities would not be supported by the D-Series Guidelines.</p> <p>Clarify how the D-Series Guidelines have been interpreted and applied to sensitive uses within the study areas.</p>	<p>IAMGOLD understands that separation distances outlined in Procedure D-6-3 Separation Distances (MOE, 1995) indicate a 300 metre minimum separation distance between a proposed Class III Industrial Use and the closest sensitive land use. In the case of the proposed Project, the closest sensitive land use is considered to be cottagers. There are no cottagers located within 1000 metres of the proposed Project site.</p> <p>IAMGOLD has completed several technical studies, including noise, air quality, water quality and hydrology, that identify that there would be no significant impact on cottagers, the closest of which are greater than 1000 metres away.</p>	None.	n/a
152	MOECC - Northern Region - Environmental Planning - Land Use	<p>Section 10, Mitigation Measures, Table 10-3, p. 10-38 "Land Use"</p> <p>Table indicates that mitigation measures for potential loss of BMAs are "to be determined through consultation between the MNR and any affected BMA holders".</p> <p>Proposed mitigation should be determined during the EA process and identified in the final EA document to meet requirements of the EA process.</p> <p>Identify any proposed mitigation during the EA process.</p>	<p>IAMGOLD does not anticipate a significant impact to bear management areas (BMAs) at the Project site or along the Transmission Line Alignment due to the limited area that may be impacted (see Appendix O, Table 3-5). Through an information request fulfilled by the MNR on August 16, 2013, IAMGOLD has determined that, "BMA areas are allocated according to a provincial procedure and size/boundaries may include areas that they are not readily able to use" (pers. comm. Suzanne DeForest, Ministry of Natural Resources, August 16, 2013) The Ministry noted that the procedures for compensation are equivalent to other non-traditional land users (e.g., trappers); therefore, no compensation is required for BMA holders. Interested BMA holders can apply for another BMA area through Provincial application processes, should they decide to relinquish their license. The text in the Amended EIS / Final EA Report has been revised to clarify this.</p>	<p>The mitigation measure for the loss of BMAs has been changed as follows: "The MNR has advised that the affected BMA holder can apply to obtain licenses to additional BMAs in the Timmins District to augment the loss of access to the northern portion of the affected BMA."</p>	<p>Table 10-3, ("Land Use", "Hunting – loss of BMAs")</p> <p>Tables ES-3, ES-4, ES-5, ES-6, 11-3, 11-4, 11-5 and 11-6 ("Land Use", "Hunting")</p>
153	MOECC - Northern Region - Environmental Planning - Land Use	<p>Section 10, Mitigation Measures, Table 10-3, p. 10-39 "Land Use"</p> <p>Table indicates that mitigation measures for potential loss of trapline area are to be determined through consultation between the MNR and affected trappers.</p> <p>Any proposed mitigation should be determined during the EA process and identified in the final EA document to meet requirements of the EA process.</p> <p>Identify any proposed mitigation during the EA process.</p>	<p>IAMGOLD has determined, through an information request fulfilled by the MNR on August 16, 2013 that no compensation is required for trap line losses. "If a trapper decides that he no longer wants his trapline (for whatever reason), he can relinquish it to the Crown. In keeping with our provincial trapline policies, we cannot just transfer the head trapper to another trapline. All trappers apply for vacant traplines they are interested in acquiring, and a provincial point system is used to determine the allocation of each vacant line." (pers. comm. Suzanne DeForest, Ministry of Natural Resources, August 16, 2013). The text in the Amended EIS / Final EA Report has been modified to reflect this.</p>	<p>Change mitigation as follows: "Based on discussion with the MNR no compensation is required for trap line losses."</p>	<p>Table 10-3, ("Land Use", "Trapping – loss of access to trapline area (GO031)")</p> <p>Tables ES-3, ES-4, ES-5, ES-6, 11-3, 11-4, 11-5 and 11-6 ("Land Use", "Trapping")</p>
154	MOECC - Northern Region - Environmental Planning - Land Use	<p>Section 10, Mitigation Measures, Table 10-3, p. 10-39 "Land Use"</p> <p>Table states that mitigation measures for relocation of trapper cabins or buildings are to be determined through consultation between the MNR and affected trappers.</p> <p>Any proposed mitigation should be determined during the EA process and identified in the final EA document to meet requirements of the EA process.</p> <p>Identify any proposed mitigation during the EA process.</p>	<p>IAMGOLD has determined, through an information request fulfilled by the MNR on August 16, 2013 that no compensation is required for trap line losses. "If a trapper decides that he no longer wants his trapline (for whatever reason), he can relinquish it to the Crown. In keeping with our provincial trapline policies, we cannot just transfer the head trapper to another trapline. All trappers apply for vacant traplines they are interested in acquiring, and a provincial point system is used to determine the allocation of each vacant line." (pers. comm. Suzanne DeForest, Ministry of Natural Resources, August 16, 2013). The text in the Amended EIS / Final EA Report has been modified accordingly.</p>	<p>The following has been added to mitigation tables: "Based on discussion with the MNR no compensation is required for trap line losses. For the trapper (GO031) whose cabin is located on IAMGOLD's leased property alternative accommodations will be provided during trapping campaigns."</p>	<p>Tables ES-3, ES-4, ES-5, 10-3, 11-3, 11-4, 11-5 ("Land Use", "Trapping")</p>

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155	MOECC - Northern Region - Environmental Planning - Land Use	<p>Section 11, Impact Assessment, Table 11-3, p. 11-32 "Land Use"</p> <p>For "Cottages and Outfitters", under "Magnitude", the table indicates that "The Project is proximal to cottage areas or areas used by outfitters and may require the removal of a few cottages but will not limit the use of these areas by most cottagers/outfitters."</p> <p>If removal of some cottages is being proposed as a potential mitigation measure it should be identified as such, and directly linked to a potential effect.</p> <p>The potential removal of area cottages to address potential impacts warrants further detailed discussion in Section 10 - Mitigation Measures (if applicable).</p> <p>Regardless of whether cottage removal is proposed as a mitigation measure or for other reasons, it warrants further discussion in Appendix O - Land and Resource Use Technical Support Document.</p> <p>Identify cottage removal as a mitigation measures (if applicable) and link to potential effect(s).</p> <p>Include detailed discussion of potential cottage removal in Section 10 (if applicable) and in Appendix O.</p>	<p>IAMGOLD has undertaken technical studies that identify that with application of mitigation methods for noise (such as limiting nighttime operations; (see Table 10-1 of Chapter 10) regulatory limits will be met at all receptor locations.</p> <p>The effects prediction for the construction phase indicates that regulatory limits will be met at all receptor locations for both daytime and nighttime, as such no removal of cottages is warranted during the construction phase. The magnitude level provided in Table 11-3 for Land Use - Cottages and Outfitters is based on the levels of magnitude described in Table 11-2.</p> <p>Although not required as mitigation during the construction phase, IAMGOLD may negotiate with some cottage owners to purchase the property if limiting operations (see response to Comment #156) is not preferred. Removal of cottages has been added as a potential mitigation measure.</p>	Potential removal of cottages has been added as a mitigation measure.	Tables ES-3, ES-4, ES-5, 10-3, 11-3, 11-4, 11-5 ("Land Use", "Cottagers and Outfitter Camps")
156	MOECC - Northern Region - Environmental Planning - Land Use	<p>Section 11, Impact Assessment, Table 11-4, p. 11-51 "Land Use"</p> <p>For "Cottages and Outfitters" under "Magnitude", the table indicates that "The Project is proximal to cottage areas or areas used by outfitters and may require the removal of a few cottages but will not limit the use of these areas by most cottagers/outfitters."</p> <p>If removal of some cottages is being proposed as a potential mitigation measure it should be identified as such, and directly linked to a potential effect.</p> <p>The potential removal of area cottages to address potential impacts warrants further detailed discussion in Section 10 - Mitigation Measures (if applicable).</p> <p>Regardless of whether cottage removal is proposed as a mitigation measure or for other reasons, it warrants further discussion in Appendix O - Land and Resource Use Technical Support Document.</p> <p>Identify cottage removal as a mitigation measures (if applicable) and link to potential effect(s).</p> <p>Include detailed discussion of potential cottage removal in Section 10 (if applicable) and in Appendix O.</p>	<p>IAMGOLD has undertaken technical studies that identify that with application of mitigation methods for noise (such as limiting nighttime operations; see Table 10-1 of Chapter 10) regulatory limits will be met at all receptor locations.</p> <p>However, IAMGOLD may negotiate with some cottage owners to purchase the property if limiting operations is not preferred.</p> <p>Removal of cottages has been added as a potential mitigation measure.</p>	Removal of cottages has been added as a potential mitigation measure.	Tables ES-3, ES-4, ES-5, 10-3, 11-3, 11-4, 11-5 ("Land Use", "Cottagers and Outfitter Camps")
157	MOECC - Northern Region - Environmental Planning - Land Use	<p>Section 11, Impact Assessment, Table 11-5, p. 11-70 "Land Use"</p> <p>For "Cottages and Outfitters" under "Magnitude", the table indicates that "The Project is proximal to cottage areas or areas used by outfitters and may require the removal of a few cottages but will not limit the use of these areas by most cottagers/outfitters."</p> <p>If removal of some cottages is being proposed as a potential mitigation measure it should be identified as such, and directly linked to a potential effect.</p> <p>The potential removal of area cottages to address potential impacts warrants further detailed discussion in Section 10 - Mitigation Measures (if applicable).</p> <p>Regardless of whether cottage removal is proposed as a mitigation measure or for other reasons, it warrants further discussion in Appendix O - Land and Resource Use Technical Support Document.</p> <p>Identify cottage removal as a mitigation measures (if applicable) and link to potential effect(s).</p> <p>Include detailed discussion of potential cottage removal in Section 10 (if applicable) and in Appendix O.</p>	<p>IAMGOLD has undertaken technical studies that identify that with application of mitigation methods for noise (such as limiting nighttime operations (see Table 10-1 of Chapter 10) regulatory limits will be met at all receptor locations.</p> <p>The effects prediction for the closure phase indicates that regulatory limits will be met at all receptor locations for both daytime and nighttime, as such no removal of cottages is warranted during the closure phase. The magnitude level provided in Table 11-3 for Land Use - Cottages and Outfitters is based on the levels of magnitude described in Table 11-2.</p>	Removal of cottages has been added as a potential mitigation measure.	Tables ES-3, ES-4, ES-5, 10-3, 11-3, 11-4, 11-5 ("Land Use", "Cottagers and Outfitter Camps")

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158	MOECC - Northern Region - Environmental Planning - Land Use	<p>Appendix O, Land and Resource Use Technical Support Document, S.3.1, p. 3-1 "Construction Phase"</p> <p>There is no indication as to which specific project components were considered during modelling and assessment of potential effects. For example, were the impacts of proposed aggregate pits and the proposed waste disposal site considered?</p> <p>Clarify which project components were considered during evaluation of potential effects.</p>	<p>Please refer to Section 5.1.5.1, Operations Phase, for the list of Project components / activities considered.</p>	None.	n/a
159	MOECC - Northern Region - Environmental Planning - Land Use	<p>Appendix O, Land and Resource Use Technical Support Document, S3.1.1.1, p. 3-3 "Effects Management Strategies"</p> <p>This section refers to minimum setback requirements of 300 metres for Class III Industrial Facilities, based on the MOE D-Series Guidelines. Please be advised that, in the absence of technical studies which identify an actual influence area of less than 1000 metres, the minimum required separation distance between sensitive land uses and Class III Industrial Facilities is 1000 metres. Where an actual influence area of less than 1000 metres is identified through the completion of technical studies, the minimum required separation distance may be reduced to a distance equal to or greater than the identified influence area. Separation distances less than 300 metres between sensitive uses and Class III Industrial Facilities would not be supported by the D-Series Guidelines.</p> <p>Further detail should be included to clarify how these principles have been applied to sensitive land uses within the study areas (i.e.: what are the actual influence areas that have been identified through technical studies?)</p> <p>Add further detail to clarify how the D-Series Guidelines have been interpreted and applied to sensitive uses with in the study areas.</p>	<p>IAMGOLD has completed several technical studies, including noise, air quality, water quality and hydrology, and will meet all regulatory guidelines at sensitive receptor locations. Sensitive receptor locations are greater than 1,000 metres away from the proposed Project components.</p> <p>Further, Appendix O (Land and Resource Use TSD), Section 3.1.1.1, "Effects Management Strategies" has been changed to the following:</p> <p>In consideration of potential Project effects on sensitive receptors, the MOECC D-series guidelines were considered and technical studies were completed. IAMGOLD has determined that there are no sensitive receptors within 1,000 m of closest Project components. Therefore, no effects management strategies are proposed for land use policies.</p>	<p>Section 3.1.1.1 of Appendix O (Land and Resource Use TSD) has been updated with the following text:</p> <p>"In consideration of potential Project effects on sensitive receptors, the MOE D-series guidelines were considered and technical studies were completed. IAMGOLD has determined that there are no sensitive receptors within 1,000 m of closest Project components. Therefore, no effects management strategies are proposed for land use policies. "</p>	Appendix O, Section 3.1.1.1
160	MOECC - Northern Region - Environmental Planning - Land Use	<p>Appendix O, Land and Resource Use Technical Support Document, S3.1.5, p. 3-14 "Access to Trapline Areas and Cabins"</p> <p>The document states:</p> <p>"The potential exists for effects to occur to trapper cabins along the Shining Tree TLA, most notably in trapline areas G0028, G0032, and F0033. Currently, the exact location of these trap cabins is unknown, and therefore it is not known if cabins would need to be moved due to incompatibility with the TLA."</p> <p>The exact location of the trap cabins must be identified, and potential impacts assessed during the EA process, with the results included in the in the final EA document, in order to meet requirements of the EA process.</p> <p>Identify exact trap cabin locations, assess potential impacts, and propose mitigation (if necessary) during the EA process.</p>	<p>The locations of the trapper cabins are presented in Figure 13 of Appendix O (Land and Resource Use TSD), Appendix I (Baseline Study Report).</p> <p>These trapper cabins are located in close proximity to the Shining-Tree transmission line alternative. This alternative is no longer being considered for use on this Project, therefore there will be no effects to trapper cabins along this alignment. If in the future the Project or any other local uses requires the reestablishment of the existing corridor between the Project site and the Shining tree substation, effects on Trapper cabins or activities would be minimal.</p>	None.	n/a
161	MOECC - Northern Region - Environmental Planning - Land Use	<p>Appendix O, Land and Resource Use Technical Support Document, S.3.1.7, p.3-18 "Cottages and Outfitters"</p> <p>The document states:</p> <p>"Numerous cottages and outfitters are located near the Project site."</p> <p>It would be helpful to describe the approximate distance between individual cottage and outfitter sites and the project site and/or various relevant project components.</p> <p>Generally describe applicable distances in the text.</p>	<p>IAMGOLD has undertaken technical studies that identify that mitigation methods for noise (such as limiting operations) may not require removal of cottages.</p> <p>However, IAMGOLD may negotiate with some cottage owners to purchase the property if limiting operations is not preferred.</p> <p>Removal of cottages has been added as a potential mitigation measure in Chapter 10.</p>	Removal of cottages has been added as a potential mitigation measure.	Tables ES-3, ES-4, ES-5, 10-3, 11-3, 11-4, 11-5 ("Land Use", "Cottagers and Outfitter Camps")

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162	MOECC - Northern Region - Environmental Planning - Land Use	Appendix O, Land and Resource Use Technical Support Document, S. 3.2, p. 3-22 "Operations Phase" There is no indication as to which specific project components were considered during modelling and assessment of potential effects. For example, were the impacts of proposed aggregate pits and the proposed waste disposal site considered? Clarify which project components were considered during evaluation of potential effects.	Please refer to Section 5.1.5.2, Operations Phase, for the list of Project components / activities considered.	None.	n/a
163	MOECC - Northern Region - Environmental Planning - Land Use	Appendix O, Land and Resource Use Technical Support Document, Appendix I, Land and Resource Use Baseline Study Report, S5.3.4, p. 5-12 In discussing the residential cottage area on Mesomikenda Lake in Neville Township, the document states "This cottage area is north of the Project Site but within the footprint of the Project components." Additional detail should be included to clarify which project components, and to provide approximate distance between individual cottage sites and various project components. Provide further detail in text to clarify distance between individual cottage sites and specific project components.	The referenced cottage area on Mesomikenda Lake is north of the TMF. The distance from the TMF to the nearest cottages are 1,100 and 1,330 metres away. All other cottages are 2,225 metres away or greater. Cottage locations are shown in Figure 6-10 of the EA report and Appendix O (Land and Resource Use TSD), Appendix I, Figure 16.	None.	n/a
164	MOECC - Northern Region - Environmental Planning - Land Use	Appendix O, Land and Resource Use Technical Support Document, Appendix I, Land and Resource Use Baseline Study Report, Fig. 16. Local Recreational Sites, Trails, Tourist Establishment Areas and Cottage Residential Areas Figure 16 map symbols are not consistent with the legend, potentially causing confusion to readers. (Cottage Residential Sites are shown as gold/yellow in legend and lime green on map.) Revise Figure to ensure symbols are shown consistently on map and in legend.	The legend on Figure 16 has been updated to reflect the symbols and colours portrayed in the map area.	Figure 16 in Appendix O and Figure 6-10 in the EA Report have been updated to improve legend symbols.	Figure 6-10 in the EA and Figure 16 in Appendix O
165	MOECC - Waste	The large scale project proposed by IAMGOLD involves the creation of a "Mine Rock Area". The Mine Rock being placed for final disposal in the stockpile is a designated waste under Regulation 347 however it is a waste that is exempt from approval under Part V of the EPA as per s. 3(1) of the regulation. As a result, no Environmental Compliance Approval for a Waste Disposal Site would be required for the area. The stockpiles would include full wastewater management infrastructure including a variety of collection ponds that redirect to a single mine water pond where it is redirected for use in the ore processing facility and/or polishing pond. The EA report considers the effect of acid generation and metal leaching from the mine rock but claims that there is low potential for acid generation as a result of geochemical testing although further testing is still being completed. Given the size of the stockpiles, it may be prudent to assume that untreated run-off and leachate may be of a lesser quality than anticipated and contingencies should be explored. However, this can be performed at the EPA application stage. Ultimately the ore processing water is discharged to the Tailings Management Facility and polishing ponds where it is discharged to a nearby receiver.	The comment has been noted. No change to the EA is required. It should be noted that process water is planned to be within a closed loop system, such that process water contained within the tailings and discharged into the TMF, will not be discharged to the polishing pond. Excess water within the mine water pond will be seasonally pumped to the polishing pond for release and will not have had contact with any ore process plant processes.	None.	n/a
166	MOECC - Waste	Tailings from the mine are also wastes that are exempt from Part v of the EPA as per s. 3(1) of Regulation 347 provided the tailings are not being mixed or comingled with other wastes. Comments on the tailings management pond should be provided by the wastewater team here at EAB.	The comment has been noted. No change to the EA is required.	None.	n/a
167	MOECC - Waste	Liquid and hazardous wastes that are generated from the project are to be managed by the proponent until such a time as it is hauled by ministry approved carriers and disposed of at licensed disposal facilities. Generators managing their own wastes do not require an Environmental Compliance Approval for storing and handling their own generated wastes. However, final disposal or processing of any of these wastes would require an ECA to do so.	The comment has been noted. No change to the EA is required.	None.	n/a

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168	MOECC - Waste	In section 5.11.2 of the EA report, the proponent states that solid, non-hazardous wastes from on-site operations would be "disposed of using the existing MNR Neville Township Landfill ... 2 km from the Project site". The proposal considers the possibility for IAMGOLD to acquire, expand and operate the landfill and assume all responsibilities for closure and maintenance or to simply contract use of the landfill from MNR wherein all responsibilities would continue to remain with the Crown. MNR is currently conducting a capacity study on the existing landfill to see if it will meet Project requirements and the future requirements of the existing local residences. It is unclear how much waste has been estimated for disposal though the consultant claims in Chapter 7 of the report that the landfill would likely require approval for an expansion. Other alternatives include trucking waste to an existing landfill or develop an on-site landfill. EAB staff should review the MNR capacity study as well as the current performance of the existing landfill before the recommendation of the consultant can be supported. It should be noted that approvals for new landfills greater than 40,000 cubic metres in capacity are subject to approval under the <i>Environmental Assessment Act</i> as well as the <i>Environmental Protection Act</i> with landfills greater than 40,000 cubic metres requiring undergoing the Environmental Screening Process and landfills greater than 100,000 cubic metres requiring an Individual Environmental Assessment. Any new landfill to be proposed within the project site may be subject to the requirements of Regulation 232/98 depending on the site capacity. Any landfill site proposed will require, as a minimum, long term environmental monitoring and care as well as adequate Financial Assurance.	Please refer to Section 5.14 for the description of domestic and industrial waste management for the Project. IAMGOLD thanks the MOECC for an indication of permitting requirements. IAMGOLD is aware of permitting requirements should an expansion of the landfill be pursued, or should a new landfill be considered for development on site.	None.	n/a
169	MOECC - Source Protection Programs Branch	The proposed undertaking is in an area within the watershed of the Mattagami river which supplies water to the City of Timmins. The distance of the operation from the intake is great, so the operation would not impact the water supply to Timmins. However, if there are residents near the proposed undertaking on private systems, the area is part of a highly vulnerable aquifer and that should be taken into consideration in the EA.	It is acknowledged that the Mattagami River system is the source of the Municipal Supply for the City of Timmins. Mattagami River Conservation Authority (MRCA) mapping shows that the highly vulnerable aquifer for MRCA is 9,500 km ² . A review of groundwater users and water well records in the vicinity of the Project is provided in Appendix H (Hydrogeology TSD). IAMGOLD has been in contact with the MRCA with respect to Project development and the MRCA has not expressed concern with the Project and the aquifer designation.	None.	n/a
170	Wabun Tribal Council	G-1. Project Definition. The Côte Gold Project has undergone several changes over the past couple of years further to consultations undertaken by the Proponent to optimize its layout and design. As a result of this process, the Project has been improved but there are some inconsistencies in the Project design between documents within the EIS, likely as a result of component studies having been completed earlier than the EIS. In other cases, there appear to remain some opportunities for further optimization or further clarity is required to determine the optimal approach.	Your comment has been noted. Detailed responses are provided for the specific comments below.	None.	n/a
171	Wabun Tribal Council	G-2. Aquatic Environment. Overall, the Proponent has appropriately sited the Project activities to minimize the footprint and aquatic disturbance of what is a very large project. Our main concerns relating to the assessment of the effects on the aquatic environment are the need for a more complete and better-described baseline data set. This would include more consistent sampling of reference and potentially affected waters and addressing missing baseline data (i.e. mercury in fish tissue, zooplankton, phytoplankton and periphyton). The Proponent has not presented or summarized data for specific water bodies, but has provided descriptive statistics for populations of lakes, ponds and streams and uses these as input to predictive models. Baseline data and interpretation for geochemistry are not well elaborated. The lack of clarity regarding the points of effluent discharge and the water management plan do not provide high confidence in the impact assessment, which contains uncertainties that go unaddressed.	Your comment has been noted. Detailed responses are provided for the specific comments below.	None.	n/a

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172	Wabun Tribal Council	G-3. Terrestrial Environment. In general, the existing environment conditions are well-described from the perspective of potentially affected flora and fauna. We have some concerns regarding survey methods used, completeness of the assessment of the avian communities, and a lack of wildlife population/density data, which limits the ability to assess potential adverse effects on populations. In particular, we are concerned with the amount of effort expended within the area of the actual Project footprint. Impact to numbers of harvestable resources is an important consideration for regional ecology and for First Nations' harvesting. Potential impacts to Species at Risk and related mitigation measures have been poorly addressed. Finally, almost no effort has been expended on a functional assessment of effects to the terrestrial environment, and there is almost no quantification of effects on flora and fauna.	Your comment has been noted. Detailed responses are provided for the specific comments below.	None.	n/a
173	Wabun Tribal Council	G-4. Human Environment. Our review of the materials presented in the EIS respecting the human environment focused on the potential socio-economic and land use implications of the proposed Project for the FPFN and MFN. The Proponent has identified many of the appropriate valued components and indicators for assessing the potential implications of the proposed Project for First Nation socio-economic conditions. However, for reasons that are not always explained in the EIS, the relevant information is often not provided or unavailable for the potentially affected First Nations. As a result, impact pathways are not fully developed, ultimately limiting the predictive value of the assessment, the identification of appropriate mitigation and enhancement measures as well as the design of socio-economic effects management. Recommendations are made for further discussion between the affected First Nations, the Proponent and relevant government departments.	For information within the scope of this assessment best efforts have been made to collect data from potentially affected First Nations. Data available during preparation of the EA was incorporated to the extent practicable. In addition, IAMGOLD hired a local member of Mattagami First Nation to conduct key informant interviews in Mattagami First Nation to inform the socio-economic baseline studies. A local member of Flying Post First Nation was also hired to conduct socio-economic key informant interviews within Flying Post First Nation to inform socio-economic baseline studies. IAMGOLD is of the opinion that the socio-economic impact assessment, including the identification of assessment indicators is fully developed and of a level suitable to identify the socio-economic impacts of the Côté Gold Project. IAMGOLD will work with potentially affected Aboriginal groups to develop a socio-economic / community management plan to address potential Project-related socio-economic / community effects identified through the EA process and/or at later stages of the Project.	None.	n/a
174	Wabun Tribal Council	G-5. Aboriginal Consultation. In general, the information provided in the EIS has not addressed the requirements of the EIS Guidelines, particularly in relation to Aboriginal and Treaty Rights and key comments and concerns. Clarity is sought from the Proponent and the Provincial and Federal Agencies concerning the delegation of consultation responsibilities, and suggestions are provided to assist the Proponent in meeting the requirements of the EIS Guidelines.	Your comment has been noted. Detailed responses are provided for the specific comments below.	None.	n/a
175	Wabun Tribal Council	WTC-IR#1: Waste Disposal, Chapter 1, Section 1.2 "Non-hazardous domestic solid wastes will likely be deposited in an on-site landfill, unless a suitable off-site landfill with sufficient capacity is identified." (p.1-3) The alternative means analysis suggests that an off-site landfill has been identified. Please confirm the expected approach to dealing with non-hazardous wastes.	The Amended EIS / Final EA Report has been revised to properly reflect the preferred alternative.	The following wording in Section 1.2: "Non-hazardous domestic solid wastes will likely be deposited in an on-site landfill, unless a suitable off-site landfill with sufficient capacity is identified." has been replaced with: "Non-hazardous domestic solid waste will likely be deposited in the existing nearby MNRF Landfill (see Figure 1-2)."	Section 1.2

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176	Wabun Tribal Council	<p>WTC-IR#2:Transmission Line Route and Rehabilitated Mine Hazards, Chapter 4, Section 4.4.4.3</p> <p>"Stakeholders have expressed some concerns about how AMIS or mine hazards will be identified and assessed in the Environmental Assessment. AMIS or Mine Hazards are existing features primarily related to other sites, although these sites do have the potential to affect the ultimate transmission line route.</p> <p>However, IAMGOLD has identified that assessing alternative methods for mitigating these features is not within the scope of the Environmental Assessment for the Project. IAMGOLD will however, assess alternative methods for mitigating these features in the Project planning and contingency plans." (p.4-32)</p> <p>AMIS or mine hazards are existing features of the environment and since they have the potential to affect the ultimate transmission line route are therefore appropriately assessed as part of the effects of the environment on the Project.</p> <p>a) Please explain how AMIS or mine hazards have the potential to affect the ultimate transmission line route, making reference to any specific known mine hazards and their locations.</p> <p>b) Please assess the alternative methods for mitigating the effects of the mine hazards as part of the consideration of the effects of the environment on the Project.</p>	<p>So far, during the baseline work carried out, no rehabilitated hazards have been identified that would be disturbed by construction and operation of the transmission line.</p> <p>As such, there is no need for mitigation of mine hazards on the transmission line or vice versa.</p> <p>Should any previously rehabilitated mine features be discovered during further Project planning, authorization will be sought and mitigations measures will be developed, as necessary.</p>	None.	n/a

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177	Wabun Tribal Council	<p>WTC-IR#3: Mine Closure, Chapter 4, Section 4.4.4.5</p> <p>"IAMGOLD must file Closure Plans and post financial assurance with Provincial authorities so the funds are available for closure and reclamation, if required. Current closure plans are to return the Project site to a naturalized state at closure, however IAMGOLD is interested in Aboriginal communities providing insight into the management objectives of the closure plan." (p.4-32)</p> <p>With respect to insight into the management objectives of the closure plan, the mine closure objectives for Be Beers' Victor Diamond Project were developed collaboratively between De Beers Canada and the Attawapiskat First Nation (AttFN) and are as follows:</p> <ul style="list-style-type: none"> a) Prevent, reduce or mitigate the adverse environmental effects associated with each phase of the Project, including closure and post-closure phases; b) Provide for the reclamation of all affected sites and landscapes to a stable and safe condition; c) Provide for the return of all affected ecosystems to health and sustainable functioning; d) Provide for reclamation and re-vegetation research activities in order to identify the optimal growing conditions and best species for re-vegetation; e) Establish conditions that permit productive use of the affected sites and the natural resources of the area including the possibility of carrying out traditional harvesting activities by aboriginal peoples, similar to its original use or an alternative as developed by De Beers in consultation with AttFN and Ministry of Northern Development and Mines; f) Reduce the need for long-term monitoring and maintenance by designing for closure and instituting progressive reclamation; g) Provide for long-term monitoring and maintenance of the sites affected by the Project; h) Provide estimated costs for completing the work under the Closure Plan; i) Provide appropriate mechanisms for financial assurances; and j) Provide for mine closure using the most current available proven technologies in a manner consistent with sustainable development. <p>The overall intent of the Closure Plan is to achieve the AttFN's desire for site restoration to a high ecological land value; to maximize the potential for its use by the AttFN; and maximizing other benefits and opportunities to the AttFN.</p> <ul style="list-style-type: none"> a) Please provide the draft table of contents, and draft proposed objectives for the Côté Gold Project Closure Plan. b) Please indicate the form(s) of financial assurance being contemplated by IAM Gold for closure of the proposed Côté Gold Project. 	<p>IAMGOLD is committed to complying with all applicable Acts and regulations for closure, as well as consideration of Aboriginal communities, to yield a naturalized area compliant with best industry practices for future enjoyment and/or use of the land. The conceptual closure plan is presented in Section 5.16.</p> <p>The Closure Plan needs to be filed and approved prior to Project construction. IAMGOLD is committed to consulting on the Closure Plan prior to approval by the Ministry of Northern Development and Mines.</p>	None.	n/a
178	Wabun Tribal Council	<p>WTC-IR#4: Mine Rock Areas, Chapter 4, Section 4.4.4.6</p> <p>"Based on public comments received, technical suitability, cost and environmental effects two mine rock areas close to Mesomikenda Lake have not been removed from the proposed Project." (p.4-33)</p> <p>Please confirm that the above statement is correct as it appears to be at odds with Figure 1-2, which shows only a single mine rock area, and no areas located adjacent to Mesomikenda Lake.</p>	Reference to multiple mine rock areas near Mesomikenda Lake has been removed.	The wording in Chapter 4 has been updated to remove reference to multiple mine rock areas.	Chapter 4

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179	Wabun Tribal Council	<p>WTC-IR#5: Tailings Management Facility, Chapter 4, Section 4.4.4.7</p> <p>"While the final design of the TMF is still in progress IAMGOLD is committed to recycling as much water as possible to reduce demands on water systems and releases." (p.4-33)</p> <p>The above phrase is unclear. Are major changes to the TMF still anticipated?</p> <p>Please clarify how the TMF could still change during final design in relation to the volume, footprint, treatment efficacy, discharge location, polishing pond design, capacity, water management and any other matters relevant to the consideration of environmental effects.</p>	<p>Final design of the TMF is focused on the optimization of the design. This optimization will not affect the preferred configuration or location as major changes are not anticipated. The effects prediction and assessment consequently will not change.</p>	None.	n/a
180	Wabun Tribal Council	<p>WTC-IR#6: Transmission Line Alignment, Chapter 4, Section 4.4.4.9</p> <p>"Stakeholders have expressed some concerns about the construction of a new 230 kV transmission line in the Project area. Subsequently, IAMGOLD is addressing these concerns in the EA by outlining the potential effects on wildlife and potential increase in traffic in the area. Furthermore, IAMGOLD has taken these concerns into consideration by proposing that the transmission line would be removed at closure to rehabilitate the site, unless otherwise negotiated with Aboriginal groups and local communities." (p.4-34)</p> <p>Elsewhere in the EIS at Section 5.16.2.9, the following is noted:</p> <p>The off-site portion of the 230 kV transmission line will be evaluated at the end of the Project for transfer to the local utility for care and maintenance and/or potential reuse. Should the transfer to the local utility prove itself not feasible it will be dismantled. Rehabilitation would include removal and recycling/reuse of electrical equipment. Poles would be removed or cut at grade, and either reused or disposed of.</p> <p>The two proposals are not the same.</p> <p>Please clarify the fate of the transmission line following mine closure and whether it will be removed and, if so, under what conditions.</p>	<p>As described in the EA it is assumed that IAMGOLD will remove the transmission line, unless otherwise transferred to another operator as needed to service regional needs. This will be determined in consultation with stakeholders near the end of the operations phase.</p> <p>The Amended EIS / Final EA Report has been revised to be consistently worded.</p>	<p>Wording referring to closure options for the transmission line has been removed from Chapter 4.</p> <p>Section 5.16.2.9 has been revised for consistency.</p>	Chapter 4, Section 5.16.2.9
181	Wabun Tribal Council	<p>WTC-IR#7, Project footprint, Chapter 5, Section 5.1</p> <p>"The preliminary site plan showing the proposed Project site is shown in Figure 1-2, and the proposed Project footprint will cover approximately 1,700 ha (17 km²) during operations, without the transmission line alignment footprint." (p.5-1)</p> <p>The footprint area is not an accurate reflection of the area that will no longer be available for traditional uses, considering additional areas around and between the actual project footprint that will be unusable or unused due to issues of safety, air quality, noise and other ongoing effects of the proposed Project. This "effective" footprint will be larger than the physical footprint of the infrastructure.</p> <p>a) Please indicate on a revised version of Figure 1-2 the extent of the effective project footprint including considerations for safety, access, human health, noise and other factors that will inhibit Aboriginal traditional land use.</p> <p>b) Justify the effective footprint established in part a)</p>	<p>a) As described in the impact assessment provided in Chapter 11, no additional areas outside the Project footprint would likely be rendered unavailable for traditional uses. However, some areas around the Project footprint may require controlled access and traditional uses may continue dependent on Project activities in the area.</p> <p>b) The preliminary site plan showing the proposed Project site is shown in Figure 1-2, and the proposed Project footprint will cover approximately 1,700 ha (17 km²) during the operations phase, without the transmission line alignment footprint.</p> <p>The Project is designed to:</p> <ul style="list-style-type: none"> ▪ respect the interests of other land uses and users in the area; ▪ use well-known, conventional and environmentally sound mining and processing technologies commonly used in northern Ontario, based on IAMGOLD's experience with other gold mining operations; ▪ minimize the overall footprint and associated potential effects; ▪ manage water effectively and efficiently; ▪ mitigate or compensate for effects on fish and fish habitat; and ▪ accommodate effective planning for final closure and site abandonment, rendering the site suitable for other compatible land uses and functions. 	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
182	Wabun Tribal Council	<p>WTC-IR#8: Open Pit Design, Chapter 5, Section 5.3.1</p> <p>"Alternative means for pit dewatering, such as perimeter and in-pit wells and drainage holes in the pit walls, may also be investigated." (p.5-2)</p> <p>Alternative means for pit dewatering could substantially change the volume of water being managed on site and could have very different implications for nearby groundwater/surface water interconnections as well as water quality. These alternative means need to be assessed in the EIS.</p> <p>In our opinion, this is a requirement of section 5.6 of the EIS Guidelines:</p> <ul style="list-style-type: none"> ▪ A description, including a diagram, of the overall water management system including all water management facilities (all of the proposed measures to control, collect and discharge surface drainage and groundwater seepage to the receiving environment from all key components of the mine infrastructure {see section 6 – Scope of Project}). <p>Please provide an assessment of the alternative means of dewatering the open pit.</p>	<p>Section 5.10.6 details water management structures for the Project, and the proposed water management system is shown in Figure 5-2 - an open pit sump will be installed to pump water to the mine water pond. Seepage and perimeter runoff collection has been considered in Appendix H (Hydrogeology TSD) and Appendix I (Hydrology TSD) for modelling purposes and effects assessment.</p> <p>An assessment of alternatives for dewatering the open pit is not warranted as the method for dewatering is already determined and no suitable alternative exists given the rock conditions at the site. The text referred to in the comment provides some text allowing for optimization of the dewatering techniques, which could potentially be identified during ongoing engineering studies.</p> <p>The means of dewatering the pit are not anticipated to substantially change the rate of water pumping and water management volumes. As described in Section 5.4.2.2 of the Amended EIS / Final EA Report and Appendix H, the predicted groundwater inflow rate to the pit will stabilize with progressive deepening of the pit. The primary pathway for groundwater inflow continues to occur through the shallow flow system (overburden and upper 50 m of rock mass), with limited inflow from the deep flow system.</p>	None.	n/a
183	Wabun Tribal Council	<p>WTC-IR#9: Makeup water requirements, Project Description, Section 5.10</p> <p>"Mesomikenda Lake is also expected to provide a potential source of makeup water for use in the ore processing plant, as needed. This uptake would not exceed 20% of the daily flow, and would occur seasonally when sufficient flow is available. (p.5-20)</p> <p>Freshwater will be taken from Mesomikenda Lake via a single-walled HDPE freshwater pipeline to a tank located in the ore processing plant. This freshwater pipeline intake will be designed to meet applicable Federal guidelines so as to prevent the impingement and entrainment of fish." (p.5-23)</p> <p>It is unclear how "sufficient flow" would be defined and determined on a day-to-day basis.</p> <p>We have been unable to locate in the EIS sufficient information concerning the timing, seasonality, frequency and extent of water taking that are proposed from Mesomikenda Lake or an assessment of the potential environmental effects of this activity.</p> <p>a) Please describe how "required flow" would be determined and how the takings would be related to 20% of required flow.</p> <p>b) Please indicate the location in the EIS where the potential effects of water taking from Mesomikenda Lake are assessed, or complete and provide the assessment.</p>	<p>a) Although at this time the freshwater removal rate is not expected to be greater than 20% of the process water demand at the ore processing plant, the maximum freshwater removal rate will be determined during the Permit to Take Water application phase. Freshwater will be taken in accordance with conditions associated with the Permit to Take Water, when approved. The water removal is intended to supplement recycled site water and provide for truck washing, potable and fire reserve requirements.</p> <p>b) The predicted change to flow and water level in Mesomikenda Lake are assessed under operational conditions in Appendix I (Hydrology TSD). An Addendum to Appendix I has been prepared which includes the sensitivity of Mesomikenda Lake to various climate and removal scenarios.</p>	Addendum to Appendix I prepared to address sensitivity of Mesomikenda Lake to various climate and removal scenarios.	Appendix I
184	Wabun Tribal Council	<p>WTC-IR#10: Domestic and Industrial Waste Management, Chapter 5, Section 5.14</p> <p>"A burn area may be established at the Project site subject to environmental approvals for seasonal open air burning of clean wood packaging and similar materials that are not returned to the vendor or reused, to help preserve landfill capacity." (p.5-34)</p> <p>Please provide further details concerning potentially suitable locations for the burn area, the anticipated frequency of burning, the seasonal timing of burning and the duration of burning.</p>	Upon review, it is currently not anticipated that any burning will likely occur during the construction and operations phases of the Project.	The following text about burning has been removed: "A burn area may be established at the Project site subject to environmental approvals for seasonal open air burning of clean wood packaging and similar materials that are not returned to the vendor or reused, to help preserve landfill capacity."	Section 5.14, second paragraph

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185	Wabun Tribal Council	<p>WTC-IR#11: MRA Revegetation, Chapter 5, Section 5.17 and Appendix S, Section 4.3.2</p> <p>"For the MRA, its exterior slopes will be graded and stabilized, if/where required, to ensure long-term stability and drainage, once the maximum height is reached. Flat surfaces of the MRA will be partially covered with a layer of overburden and partially vegetated to expedite the growth of indigenous plants and trees. It is expected that progressive rehabilitation of the MRA will be carried out during operations as the final configuration is reached to minimize the amount of rehabilitation effort required at the time of closure." (p.5-49)</p> <p>"During the closure phase, mitigation inherent in the Project design includes partial vegetation of the MRA, especially on the faces of the MRA which will be seen by receptors. The revegetation will improve the look of the MRA and in turn will become part of the natural landscape." (p.4-3)</p> <p>Members of the affected First Nations have expressed concerns about the ultimate conditions at the site following mine closure.</p> <p>a) Please comment on the nature and extent of vegetation expected to be present on the MRA 50 years following mine closure based on similar mine rock areas located in the region.</p> <p>b) Please provide aerial and ground photos of these similar mine rock areas that have been revegetated in the manner contemplated for the proposed Project.</p>	<p>a) It is expected that within approximately 50 to 70 years post-closure, the vegetation quality will be of comparable productivity to baseline conditions.</p> <p>b) There are no projects of similar size and scope that have implemented a similar closure scenario 50 years ago. However, recent projects have approved closure plans with comparable closure concepts. These projects are still in development or operation.</p>	None.	n/a
186	Wabun Tribal Council	<p>WTC-IR#12: Climate Change, Chapter 8, Section 8.4</p> <p>"Climate change over the course of the life of the Project could potentially result in shifts in weather conditions (temperature, precipitation levels) and/or the frequency of extreme weather events (droughts or floods). These changes could increase the risk of environmental effects due to malfunctions and/or accidental events, however, any such changes in the climate would be minor relative to the Côté Gold Project timelines." (p.8-9)</p> <p>In this section of the EIS and elsewhere, the Proponent makes reference to the "Project timelines". However, the mining of additional resources in the immediate area and processing of this additional ore in the proposed processing plant could extend the Project timelines.</p> <p>Please provide the range of the potential extension to the operational timeline for the proposed Project (in years) based on current information about potential additional mineral resources in the region.</p>	<p>a) It is expected that within approximately 50 to 70 years post-closure, the vegetation quality will be of comparable productivity to baseline conditions.</p> <p>b) There are no projects of similar size and scope that have implemented a similar closure scenario 50 years ago. However, recent projects have approved closure plans with comparable closure concepts. These projects are still in development or operation.</p>	None.	n/a
187	Wabun Tribal Council	<p>WTC-IR#13: TMF Dam Failure, Chapter 13, Section 13.2.7 and Chapter 1, Figure 1-2</p> <p>"Under extreme or unlikely circumstances, a breach of the TMF dam, even if only partial, could result in the release of tailings solids and effluent to the surrounding environment. Based on the TMF's location, the water bodies at risk would be the Bagsverd Creek, Unnamed Lake #1 and #2, and the planned Bagsverd Creek watercourse realignment proposed to the east of the TMF. Bagsverd Lake and Mesomikenda Lake are considered to be at a sufficient distance from the TMF to evade any potential effects in the event of a breach of the TMF dam." (p.13-10)</p> <p>Figure 1-2 appears to show a dam across Bagsverd Creek directly south of the TMF. Failure of this dam or failure of the TMF along its southern boundary would result in release of tailings into Bagsverd Lake.</p> <p>Please clarify why Bagsverd Lake is considered to be at a sufficient distance from the TMF to evade any potential effects in the event of a breach of the TMF dam.</p>	<p>The text has been revised to clarify that if there is a breach of the tailings dam along the southern boundary there is a potential for an accidental release to Bagsverd Lake. This change will not alter the impact assessment conclusions.</p> <p>Due to recent sensitivity on the topic of tailings dam breaches, additional information on accidents and malfunctions with regards to potential tailings dam breaches has been added to Chapter 13 of the Amended EIS / Final EA Report.</p>	<p>Chapter 13 has been revised to include Bagsverd Lake in the list of water bodies at risk during a potential release of tailings. The text has been corrected to state that the Bagsverd Creek realignment is located to the west of the TMF, rather than the east.</p> <p>Additional details on design and operational safeguards for the TMF have been added.</p>	Chapter 13

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
188	Wabun Tribal Council	<p>WTC-IR#14: Insufficient data for Impact Assessment, Appendix J, Attachment I – Water Quality Baseline Report and Appendix J – Technical Support Document: Water Quality</p> <p>Page 5 of the Water Quality Baseline Report states: “monthly or quarterly sampling is ongoing and will continue throughout the EA review process”.</p> <p>Baseline surface water quality data presented in the EIS does not encompass two years of multi-seasonal data. A representative baseline is not possible within a period of less than two years, since this increases the uncertainty associated with the water quality measurements.</p> <p>The following is a sample of water features that may be impacted by the Project (e.g. seepage, runoff, discharge of treated effluent) and the number of times they have been sampled (as inferred from the baseline report):</p> <ul style="list-style-type: none"> - Neville Lake, 4 times; - Mesomikenda Lake, 1 time; - Chester Lake, 1 time; - Clam Lake, 1 time; - Bagsverd Lake, 1 time; - Three Duck Lake, 1 time; - Delaney Lake, 1 time; - Dividing Lake, 1 time; and - Un-named Lake 1, 0 times. <p>Insufficient data has been used to document baseline conditions and evaluate project impacts. Please update the baseline report to include two (2) years of baseline data for all water features that may be affected by the proposed Project (from construction, operations, closure, and post-closure activities).</p>	<p>The water quality baseline report presents data up to May 2013, as there was a need to finalize the water quality baseline report prior to the initiation of the effects predictions for the EA. This resulted in the water quality baseline report presenting fewer sampling rounds for some stations in the EA. Baseline surface water quality monitoring has continued since May 2013 and is still ongoing in order to develop receiver-based effluent criteria as part of the permitting process. Nonetheless, the data presented in the water quality baseline report is considered to be sufficient for the purposes of the EA, of which the objective is to assess the potential for effects on water quality with respect to the environment and human health.</p> <p>To date, a multi-year dataset is available from 2011 to present at all key surface water quality stations. Many stations have been sampled on a quarterly to monthly basis during this time period to provide a dataset that well covers the various seasons over multiple years. Sampling at lake stations now covers periods of thermal stratification and lake turnover. Furthermore, the surface water quality dataset includes multi-year and seasonal data from reference stations that are located upstream of the Project, such as: Somme River, Wolf Lake, Schist Lake and the lower basins of Mesomikenda Lake (which are separated from the Project by a watershed divide). It is anticipated that additional reference stations would be added to the surface water quality monitoring network prior to construction of the Project.</p> <p>The collection of baseline water quality data included sampling at lake outflows and lake stations (water column profile locations). Some of the sampling events identified in the reviewer’s comment were for the lake stations and not the lake outflows that also represent lake water quality. Other lakes that are mentioned in the reviewer’s comment refer to lakes that were added after the original baseline monitoring program had commenced and which have subsequently been sampled monthly or quarterly. For clarity, details of the sampling program as it relates to the above mentioned lakes are summarized below:</p> <p>Monthly sampling at the outflows of Neville Lake and Mesomikenda Lake was initiated in January 2013 and was conducted monthly until May 2014, at which time the frequency was reduced to quarterly throughout 2014. Lake stations in Neville Lake and Mesomikenda Lake have been sampled quarterly since May 2013 and sampling is ongoing.</p> <p>The outflows of Chester Lake and Clam Lake were sampled monthly from January 2012 through May 2014, at which time the frequency was reduced to quarterly throughout 2014. The lake station in Clam Lake has been sampled quarterly since May 2013 and sampling is ongoing. The lake station in Chester Lake was sampled quarterly between May 2013 and February 2014 and has since been discontinued due to its shallow depth; noting that the outflow of Chester Lake is still being sampled.</p> <p>The outflow of Bagsverd Lake was sampled monthly from March 2012 until May 2014, at which time the frequency was reduced to quarterly throughout 2014. The lake station was sampled quarterly since May 2013 and sampling is ongoing.</p> <p>The outflow of Three Duck Lakes was sampled monthly from February 2012 until May 2014, at which time the frequency was reduced to quarterly throughout 2014. The two lake stations in Three Duck Lakes have been sampled quarterly since May 2013 and sampling is ongoing.</p> <p>The outflows of Delaney Lake and Dividing Lake were sampled quarterly beginning in spring 2014. Sampling at Dividing Lake is ongoing, while sampling at Delaney Lake has been discontinued due to its shallow depth.</p> <p>Due to their close proximity and small size, Un-named Lake #1 is expected to have similar chemistry to Un-named Lake #2, for which the outflow was sampled monthly from March 2012 until April 2014, at which time the frequency was reduced to quarterly throughout 2014.</p> <p>Response continues on next page.</p>	<p>An updated statistical summary of baseline water quality results to May / June 2014 is provided in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>

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188 cont	See previous page.	See previous page.	<p>An updated statistical summary of the baseline water quality results to May / June 2014 are provided in the Addendum to Appendix J (Water Quality TSD). The baseline water quality data is used for two main purposes in the water quality effects assessment:</p> <ul style="list-style-type: none"> ▪ to develop a single set of benchmark values that represent the upper limit of baseline to be used as part of the magnitude designation as part of the impact assessment; and ▪ to develop a natural runoff water quality input for the water quality model. <p>As part of the Addendum to Appendix J (Water Quality TSD), the updated statistical summary (to May / June 2014) is compared to the statistics that were originally presented in the Water Quality TSD (to May 2013); the comparison shows that it is clear that the additional year of data does not materially change the water quality effects assessment based on data up to May 2013. The baseline water quality data presented in the Water Quality TSD serves well the above two purposes, and is sufficient to assess potential water quality effects as part of the EA.</p>	See previous page.	See previous page.
189	Wabun Tribal Council	<p>WTC-IR#15: Lack of historical data, Appendix J, Attachment I – Water Quality Baseline Report, Section 5.2</p> <p>No historical data were presented. As a water body within the Project's local study area is downstream of a previously existing plant to treat mine water from the dewatered Chester Mine, historical monitoring data should exist for the location. However, no studies or information gathered by Chester Mine in regards to monitoring of this site were included in the baseline study. Historical data would add to the baseline study, providing greater information on the current state of water quality, past impacts and potential impacts of future mine activity on water quality.</p> <p>Please provide data collected by previous studies and/or surveys conducted on water features within the local study area.</p>	<p>The water quality effects assessment is intended to evaluate potential environmental effects through predictions of change to the existing water quality during the construction, operation, closure, and post-closure phases of the Project. The baseline water quality data collected at the surface water monitoring location MP (as presented in Appendix J (Water Quality TSD), Attachment I, Appendix A), which is situated downstream of the former treatment plant associated with the Chester Mine dewatering, was considered during the effects assessment. Monitoring station MP is upstream of the northern basin of Three Duck Lakes; as such, any ongoing effects to water quality due to the former Chester Mine would be captured in the baseline characterization of Three Duck Lakes and therefore captured as part of the water quality effects assessment.</p>	None.	n/a

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190	Wabun Tribal Council	<p>WTC-IR#16: No measures for methylmercury, Appendix J, Attachment I – Water Quality Baseline Report, Section 4.3 and Appendix J, Attachment I – Water Quality Baseline Report, Appendices A and C</p> <p>Methylmercury was not measured in baseline water samples. Methylmercury is a toxin that may be transformed from mercury naturally present at the site runoff as a result of flooding of wetlands, soils and vegetation - activities that are proposed for the Côté Gold Project. To model and predict the impact the Project will have on methylmercury concentrations, and to provide a baseline for future comparisons it is important to know the current concentrations in local waters and sediment.</p> <p>Please update the baseline report with methylmercury information. If no methylmercury information exists, collect additional samples to improve upon baseline data collection.</p>	<p>As noted in the aquatic impact assessment, potential effects associated with methyl mercury production due to flooding are expected to be very limited because currently the areas that will be flooded (i.e., Chester Lake and parts of the south arm of Bagsverd Lake) are inundated seasonally. Generally, any methyl mercury production associated with flooding of shallow areas, such as those proposed for the Côté Gold Project, is realized within 2 to 3 years of flooding and does not represent long-term issues as observed at large reservoirs (Bodaly et. al, 1997; Canada-Manitoba Governments, 1987). Therefore, the seasonal flooding of the areas of concern are not expected to significantly contribute to methyl mercury production upon development of the Project. Additional information regarding methyl mercury production at the Project site has been added in the Addendum to Appendix N (Aquatic Biology TSD).</p> <p>The key issue with methyl mercury is the increase in tissue concentrations of fish that reside in the lakes where flooding of terrestrial areas is expected. It is important to note that fish within the local area are currently restricted for consumption due to regionally elevated mercury levels. Thus, if any small increases in methyl mercury occurred in fish tissues, these increases will not likely change the consumption restriction on the fish. More information on fish tissue concentrations are discussed in Appendix W (HEHRA) as they relate to the possible impacts associated with human consumption of fish.</p> <p>Methyl mercury that is generated from inorganic mercury that is sequestered by terrestrial vegetation from the atmosphere typically occurs at very low total concentrations (i.e., nanograms per litre). The generation of methyl mercury depends upon the development of favourable geochemical conditions (i.e., sulphate reducing) to allow for sulphate reducing bacteria to transform the inorganic mercury to organic mercury. The rate of the microbial-induced methylation of the mercury depends on a number of factors including: distribution and concentrations of inorganic mercury in biodegradable organic matter, geochemical conditions (pH, redox, temperature), presence of compounds that can complex with inorganic mercury (e.g., dissolved organic carbon and sulphide), and presence and activity of sulphate-reducing bacteria (Benoit et al., 2003). Uncertainties associated with the source term, geochemical conditions and microbial communities, compounded with uncertainties associated with modelling exposure pathways and bioaccumulation in fish, makes modelling trace-level concentrations and the overall effect of potential methyl mercury production very challenging and carries a range of uncertainty that is likely to be significantly greater than the range of the predicted magnitudes. Therefore, modelling methyl mercury does not provide value in the context of this EA, and would not eliminate the need to follow through with the proposed mitigation and monitoring commitments that are discussed below.</p> <p>Although methyl mercury production is not expected to be a concern, IAMGOLD is committing to remove terrestrial vegetation within the small areas that are expected to experience flooding prior to the construction of watercourse realignments (Chapter 10, Table 10-2). The mitigation commitments have been expanded to include the removal of shallow organic-rich soils in the small areas expected to become flooded due to the watercourse re-alignments. The removal of the terrestrial vegetation and organic-rich soils in these areas will further reduce the potential for methyl mercury production (Windham-Myers et al., 2009). Furthermore, low-level total mercury and methyl mercury have been added as parameters to the baseline water quality sampling, including interstitial water of the near-surface sediments in the flooded areas, and fish tissue monitoring as part of the overall monitoring commitments for the Côté Gold Project.</p>	<p>Additional information on methyl mercury production has been provided in the Addendum to Appendix N.</p> <p>Mercury and Methyl Mercury have been added as parameters for water quality monitoring.</p>	<p>Addendum to Appendix N, Chapter 16, Table 16-1</p> <p>Appendix J, Section 5.2.1; Appendix Y</p>

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191	Wabun Tribal Council	<p>WTC-IR#17: No measures of free cyanide concentrations, Appendix J, Attachment I – Water Quality Baseline Report, Section 4.3.3.1</p> <p>Only total cyanide concentrations were measured in surface water samples. The Provincial Water Quality Objective (PWQO) and the Canadian Environmental Quality Guideline (CWQG) for cyanide is for free (WAD) cyanide, as it is the most toxic form of this element. To properly model and predict the impact of the Project on free cyanide concentrations, the baseline concentrations should have been monitored.</p> <p>Please provide free cyanide concentrations for surface water samples.</p>	<p>The surface water quality baseline program did include measurements of free cyanide concentrations. In 2013, the surface water baseline program included 12 water column profile stations within select lakes to collect near-lakebed (“bottom”) and near-surface (“top”) samples. The water column profile stations are located on Bagsverd Lake, Neville Lake, Mesomikenda Lake, Chester Lake, Clam Lake, Three Duck Lakes, Delaney Lake and Dividing Lake. Free cyanide concentrations measured at the water column profile stations in May 2013 are presented in Appendix J (Water Quality TSD), Attachment I. Free cyanide concentrations were measured in 22 samples. Free cyanide concentrations were less than the MDL of 0.002 mg/L in 20 of 22 samples. Free cyanide concentrations were measured above the MDL in Clam Lake (0.003 mg/L) and Three Duck Lakes (lower) 0.021 mg/L during May 2013. The May 2013 result for Three Duck Lakes (lower) is considered to be an outlier. In analyses on samples collected subsequent to May 2013, the free cyanide concentration in Clam Lake was below the MDL in 8 of 8 samples and the free cyanide concentration in Three Duck Lakes (lower) was below the MDL in 8 of 8 samples.</p> <p>Total cyanide is monitored at all baseline water quality monitoring locations. Total cyanide concentrations are below detection limits at most outflow and lake stations. Total cyanide concentrations were measured above the MDL in P-5 in May 2012 (0.003 mg/L), P-4 in May 2012 (0.003 mg/L), Schist Lake in May 2012 (0.004 mg/L), the Clam Lake station in May 2013 (0.003 mg/L), the Three Duck Lakes station in May 2013 (0.021 mg/L), the Somme River in January 2012 (0.003 mg/L), Little Clam Lake in July 2012 (0.053 mg/L), Schist Lake in May 2012 (0.004 mg/L). With the exception of the detected concentrations in Three Duck Lakes and Little Clam Lake, which are considered to be outliers, the detected concentrations of total cyanide are low and near the MDL of 0.002 mg/L. Therefore, given that total cyanide is generally below the MDL, the free cyanide concentrations would also be below the MDL and the use of total cyanide concentrations as part of the effects predictions are valid.</p> <p>It is agreed that free cyanide is the key cyanide species with respect to toxicity. However, it is important to note that free cyanide is not equivalent to weak acid-dissociable cyanide. The measurement of weak acid-dissociable cyanide includes cyanide species that can be liberated in an acidic solution buffered at a pH of 4.5; therefore, weak acid-dissociable cyanide includes metallo-cyanide complexes (e.g., CuCN, Zn(CN)₂) as well as free cyanide (CN⁻ + HCN). As described in Appendix Y, IAMGOLD has committed to monitor cyanide species (total cyanide, free cyanide and weak acid dissociable cyanide) as part of the surface water and groundwater quality monitoring to be able to understand the speciation of cyanide within the mine site and in the receiving environment.</p>	None.	n/a

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192	Wabun Tribal Council	<p>WTC-IR#18: No interpretation and summarization of water quality data, Appendix J, Attachment I – Water Quality Baseline Report, Section 5.0</p> <p>The Côte Gold Project EIS Guidelines (CEAA 2013) state:</p> <p>The EIS will describe surface water quality, hydrology and sediment quality within the area of influence of the project. The baseline will provide the basis for the assessment of potential effects to surface water, presenting the range of water and sediment quality and surface water hydrology.</p> <p>Furthermore, the EIS will describe:</p> <ul style="list-style-type: none"> ▪ The delineation of drainage basins, at appropriate scales; ▪ The assessment of hydrological regimes; ▪ Flows or design peak flows for selected periods for the project area; ▪ Any local and regional potable surface water resource; ▪ Seasonal water quality field and lab analytical results and interpretation at several representative local stream and lake monitoring stations established at the project site. <p>Surface water quality, water column profile, and ground water data were not summarized and interpreted in such a way as to characterize the water bodies of the local study area. To adequately describe baseline conditions, baseline data must be evaluated and interpreted spatially and temporally.</p> <p>General summary statistics – i.e. number of samples, minimum, maximum, mean, standard deviation, 25th percentile, median, and 75th percentile – for each sampling station sampled should be included in the baseline report. These provide an illustration of water chemistry as well as information that can be used later to model Project impacts.</p> <p>a) Please describe surface water quality, sediment quality and groundwater quality within the area of influence of the proposed Project, including seasonal and spatial patterns.</p> <p>b) Please provide general summary statistics for each sampling station included in the baseline report.</p>	<p>The baseline water quality summary was presented to provide an overview of the results in order to assess the impacts of the Project on site water quality as a whole. The baseline data for each lake was presented in Appendix J (Water Quality TSD), Attachment I, Appendix A, with parameter concentrations screened against Aquatic Health Benchmarks and Human Health Benchmarks. It is important to note that the approach of the effects assessment is to evaluate changes in overall water quality due to the Project, and not to necessarily conduct effects assessments on individual lakes. That said, the requested statistics have been provided in table format in the Addendum to Appendix J (Water Quality TSD). Figures have also been provided which show the average concentrations and one standard deviation of selected parameters in lakes across the Mollie River and Mesomikenda Lake Watersheds. The average baseline levels do not differ considerably; as such, the influence of minor seasonal variations within individual lakes and minor spatial variations within each watershed are not important with respect to evaluating the effects and do not change the conclusion of the impact assessment.</p>	<p>The requested statistics have been calculated and are provided in table format in the Addendum to Appendix J (Water Quality TSD).</p> <p>Plots of spatial and temporal trends are provided in the Addendum to Appendix J.</p>	Addendum to Appendix J
193	Wabun Tribal Council	<p>WTC-IR#19: Dissolved metal concentrations missing in appendix, Appendix J, Attachment I – Water Quality Baseline Report, Section 4.3.3.1, Appendix J, Attachment I – Water Quality Baseline Report, section 4.3.3.3 and Appendix J, Attachment I – Water Quality Baseline Report, Appendices A and C</p> <p>Sections 4.3.3.1 2012-2013 Surface Water Sampling and 4.3.3.3 2012 Groundwater Sampling Program do not indicate if total and/or dissolved metal concentrations were measured in all samples. Neither appendices A nor C contain dissolved metal concentrations. Appendix D indicates that both total and dissolved metal concentrations were measured. Dissolved metals are required for the project baseline and to inform any future development of Site Specific Water Quality Objectives (SSWQOs).</p> <p>a) Please amend method sections 4.3.3.1 and 4.3.3.3 to indicate that total and dissolved metal concentrations were measured.</p> <p>b) Please provide dissolved metal concentrations in appendices.</p>	<p>Both dissolved and total metals have been measured for surface water and groundwater samples. For the groundwater quality data presented in Appendix J (Water Quality TSD), Attachment I, Appendix C, the metal concentrations are presented as dissolved concentrations rather than total concentrations. The dissolved concentrations are more relevant to groundwater because total metal concentrations in groundwater samples include the proportion of metals within the solids that are present within the groundwater samples collected from wells that may experience silting and thus are not representative of groundwater quality. Since solids are not transported through the subsurface, except perhaps in karst environments, total concentrations are not relevant for the purposes of characterizing baseline groundwater quality.</p> <p>For the surface water quality data presented in Appendix J, Attachment I, Appendix A and Appendix J, Attachment I, Appendix B, the metal concentrations are presented as total concentrations rather than dissolved concentrations, with the exception of aluminum, for which the relevant water quality guidelines and objectives require comparison to aluminum measured in clay-free samples. Comparison of total metal concentrations in surface water to relevant water quality guidelines and objectives is a conservative approach and accounts for the dissolved portion of the total metal concentration. Furthermore, surface water quality guidelines apply to total concentrations and not dissolved concentrations. Therefore, presentation of dissolved metal concentrations does not add value for the purposes of characterizing the baseline surface water quality in the EA. However, note that the dissolved metal concentrations were used as part of the quality assurance / quality control evaluation of the site data in Appendix J, Attachment I, Appendix D.</p>	None.	n/a

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194	Wabun Tribal Council	<p>WTC-IR#20: Inconsistent methodologies in lake column profiles, Appendix J, Attachment I – Water Quality Baseline Report, Appendix B</p> <p>On two occasions, three data points were collected for water column data in May 2013, however only one data point was collected for the same site in August 2013. The discrepancies in monitoring techniques make it impossible to compare seasonal differences at these two locations. To permit within-lake comparisons, consistent methodologies are required.</p> <p>Please amend section 4.3.2 to provide a rationale for changes in water column profile methodologies, and clarify limitations in interpretation.</p>	<p>The water column profile locations were established to evaluate the thermal and chemical stratification trends in the lakes and potential for turnover. The two occasions that are referenced above are for the stations located in Chester Lake and Delaney Lake; these lakes are discussed below.</p> <p>In Chester Lake, a very shallow lake, measurements were taken every 1 m in May 2013 over a total measured depth of approximately 2 m. In August 2013, only one measurement was taken 1 m below surface, as the total depth was measured to be less than 2 m at this time.</p> <p>In Delaney Lake, a very shallow lake, measurements were taken every 0.5 m in May 2013 over a total measured depth of approximately 1.5 m. In August 2013, only one measurement was taken 1 m below surface, as the total depth was measured to be less than 1.5 m at this time.</p> <p>Due to the very shallow, well-mixed nature of Chester Lake and Delaney Lake, thermal and chemical stratification trends that can be derived from water column profile data are not important for these lakes. The profile data collected at these two lakes were simply presented along with the other profile data for completeness. As such, water column profile sampling data for Chester Lake and Delaney Lake has little relevance and profile sampling at these lakes has been discontinued. The profile sampling program is ongoing with a continued focus on deeper lakes where stratification and turnover need to be better understood.</p>	None.	n/a
195	Wabun Tribal Council	<p>WTC-IR#21: Sampling date discrepancies, Appendix J, Attachment I- Water Quality Baseline Report, Section 4.2 and Appendix J, Attachment I- Water Quality Baseline Report, Appendix C</p> <p>In section 4.2, it is indicated that all stations sampled for groundwater were sampled three times yearly. However, BH12-6 and DH12-TMF-16 were only sampled once, in May and June 2012, respectively. Furthermore, DH12-TMF-23A, DH12-WD-12A and DH12-WD-12B were not sampled in November/December of 2012. To understand limitations of data and to have a clear understanding of the report, consistency is necessary.</p> <p>Please amend section 4.2 Table 2 to indicate sample period discrepancies.</p>	<p>The established groundwater sampling frequency stated in the summary tables is thrice yearly. Although all monitoring wells are sampled according to that schedule, there have been changes to the monitoring program due to well condition, weather conditions or Project design that have resulted in certain wells being sampled fewer than three times in a given year.</p> <p>BH12-6 was damaged by earth moving equipment in 2012 and was not sampled after May 2012.</p> <p>DH12-TMF-16 was sampled in June 2012 and in June 2013; this location was sampled twice on an annual basis over two years and the frequency is not three times yearly.</p> <p>The groundwater quality baseline monitoring locations were originally established in early 2012; the groundwater monitoring wells were installed at locations based on the 2011 proposed mine design and in the vicinity of potential TMF and MRA alternatives. As the Project design was refined, the number of wells sampled was reduced to focus on the areas adjacent to the preferred TMF and MRA and some wells that were slated for thrice yearly monitoring were removed from the monitoring program. DH12-TMF-23A was removed from the program in late 2012.</p> <p>DH12-TMF-12A and DH12-TMF-12B were not sampled in November 2012 due to the wells being frozen, but were subsequently sampled three times in 2013.</p> <p>Although the above mentioned wells may have been removed from the ongoing monitoring program due to changes to the Project design, the available analytical results are included in the baseline monitoring record.</p>	None.	n/a
196	Wabun Tribal Council	<p>WTC-IR#22: Incorrect titles, Appendix J, Attachment I – Water Quality Baseline Report, Appendix B and Appendix J, Attachment I – Water Quality Baseline Report, Appendix C</p> <p>In Appendix B, all water column profile plots have the same figure title (BAG-LS1). Lake profiles cannot be differentiated between the various lakes.</p> <p>Please amend Appendix B to ensure water column profiles have the correct water body name in figure titles.</p>	<p>The figure titles in Appendix J (Water Quality TSD), Attachment I, Appendix B have been corrected to reflect the actual lake profile station names.</p> <p>The titles of the tables presenting the groundwater quality data in Appendix J, Attachment I, Appendix C have been corrected to reflect their actual location within Appendix C rather than Appendix B.</p>	Corrected the figure titles in lake profile plots.	Appendix J, Attachment I, Appendix B (Water Column Profile Plots)
197	Wabun Tribal Council	<p>WTC-IR#23: Incorrect appendix title, Appendix J, Attachment I – Water Quality Baseline Report, Appendix C</p> <p>At the top of each page in Appendix C the title reads, “Appendix B 2012 Groundwater Quality Results”. At the end of Appendix C the table notes are labelled “Appendix A Table Notes for Surface Water Quality Results”.</p> <p>Please amend Appendix C to indicate the correct appendix in the title and table notes.</p>	Appendix J (Water Quality TSD), Attachment I, Appendix C has been revised to include the correct titles.	Corrected header titles in baseline groundwater quality tables.	Appendix J, Attachment I, Appendix C (Groundwater Quality Results)

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198	Wabun Tribal Council	<p>WTC-IR#24: Quality Assurance Quality Control protocol, Appendix J, Attachment I – Water Quality Baseline Report, Appendix D.</p> <p>A relative percent difference (RPD) of $\leq 30\%$ was deemed acceptable between replicate samples. The industry standard is 20%.</p> <p>Sample blanks were compared to Canadian Water Quality Guidelines (CWQG) and Provincial Water Quality Objectives (PWQO). Blank samples are normally also compared to the method detection limits (MDLs) to assess sample contamination. Blanks with concentrations 5 times greater than the detection limit may indicate sample contamination during collection, transport and/or handling. Blank samples should not have values greater than guidelines or objectives, as this would indicate gross contamination during the sampling/handling/transport process. It was not indicated how samples with high concentrations were handled.</p> <p>a) Please amend Appendix D and use of $\leq 20\%$ as the acceptable limit for RPD between duplicate samples.</p> <p>b) Please amend Appendix D by comparing blank samples to method detection limits, and investigate incidences where blank concentrations are 5 times greater than the MDL to ensure samples have not been contaminated.</p>	<p>As requested, a table has been provided in the Addendum to Appendix J (Water Quality TSD), which details the concentrations of samples and blind duplicates for which the relative percent difference (RPD) was greater than 20%. In addition, a table has also been provided in the Water Quality TSD addendum that compares the concentrations to the RPD for each parameter.</p> <p>The blank samples were compared to the MDL and the concentrations of the following parameters were greater than 5 times the MDL in the 17 surface water blanks collected between November 2011 and March 2013: calcium in 3 samples, sodium in 11 samples, aluminum in 3 samples, molybdenum in 1 sample and zinc in 2 samples.</p> <p>As concentrations approach the MDL, the analysis sensitivity degrades and there is greater potential for outliers in the dataset. In the analysis of the baseline dataset and use in the effects predictions, suspect laboratory results were flagged, identified to the analytical laboratory and not included in the calculations to derive inputs for the water quality model. Therefore, the reassessment of the RPD of duplicate sets and the comparison of field blanks to MDLs does not change the effect predictions.</p>	<p>Provided a table that shows samples with RPD greater than 20% in Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>
199	Wabun Tribal Council	<p>WTC-IR#25: Guideline determination, Appendix J, Attachment I- Water Quality Baseline Report, Section 5.1</p> <p>Guidelines dependent on temperature, pH and hardness were calculated with an assumed temperature of 15 °C, a pH of 7 and a hardness of 30 mg/L. Temperatures as high as 26 °C were recorded in some lakes, pH ranged from 6.07 to 8.48, and hardness measured as CaCO₃ ranged from 11.8 to 60.4 mg/L among water features. These fluctuations in field parameters will have a large influence on guideline concentrations.</p> <p>To have a true representation of parameter concentrations above guidelines, physical field and hardness data collected at the time of sampling and in the specific water body sampled must be used to calculate guidelines. This comparison between measured values and calculated guidelines will assist in determining appropriate parameters to be modeled and will also determine significant differences between baseline conditions and predicted Project impacts.</p> <p>Please amend guideline values dependent on temperature, pH and hardness (e.g. un-ionized ammonia, aluminum copper, cadmium, beryllium, nickel) by calculating guideline values for each water feature for each date sampled to help determine important parameters to be modeled.</p>	<p>For parameters that have guidelines dependent on the value of other parameters, the predicted Project impacts need to be assessed by assigning water quality guidelines that reflect the predicted water chemistry of the surface water environment, not the water chemistry under existing conditions; this is particularly important for parameters that have guidelines that depend on variables such as hardness that will vary from existing conditions due to the predicted changes in water quality.</p> <p>The only parameter that has a water quality guideline that depends on temperature is dissolved oxygen, and dissolved oxygen is not expected to be decreased to below guideline values based on the predicted concentrations of nutrients in the receiving surface water environment. Un-ionized ammonia concentrations depend on temperature, but the Provincial Water Quality Objective (PWQO) and Canadian Water Quality Guideline (CWQG) for un-ionized ammonia are fixed at 0.020 mg/L and 0.019 mg/L, respectively; noting that the water quality model calculated the un-ionized ammonia concentrations from the total ammonia concentrations for each time step using varying measured temperature data throughout the year.</p> <p>The only parameter that has a water quality guideline that depends on pH is aluminum. Based on the geochemistry of the mine rock and tailings (i.e., the non-acid generating nature of the mine rock and tailings), the surface water receiving environment is expected to have pH values that are circum-neutral. The use of the water quality guideline for aluminum based on circum-neutral pH is therefore valid.</p> <p>Predicted hardness concentrations for the assessment locations, which can be derived from the predicted calcium and magnesium concentrations, range from 23 to 70 mg/L as CaCO₃. Using a hardness of 30 mg/L as CaCO₃ to derive the water quality guidelines for purposes of comparison to predicted concentration is a scientifically sound approach given that 30 mg/L as CaCO₃ is at the low end of the predicted hardness concentration range; this conservative approach was taken recognizing that assessment locations with hardness concentrations greater than 30 mg/L as CaCO₃ may be incorrectly flagged as being over the PWQO or CWQG.</p>	<p>Provided clarification in text regarding why a fixed pH of 7.0 and hardness concentration of 30 mg/L as CaCO₃ were applied to determine the PWQO and CWQG values (for parameters with guidelines that depend on pH or hardness) used compare to the baseline water quality results.</p>	<p>Appendix J, Attachment I, Sections 5.1 and 5.2; Appendix J, Attachment II, Section 3.1.2 and 3.2</p>

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200	Wabun Tribal Council	<p>WTC-IR#26: Ambiguous symbols used in appendix tables, Appendix J, Attachment I – Water Quality Baseline Report, Appendix A and Appendix J, Attachment I – Water Quality Baseline Report, Appendix C</p> <p>In appendices A and C, dashed lines (–) and blank cells are used to describe parameter concentrations. The meaning of these symbols is not explained in the report and may confuse the reader. If the parameters have been addressed in the report and indicated as measured, any missing values should be explained and justified.</p> <p>Please amend appendices A and C to indicate the meaning of these symbols to provide clarity to the reader.</p>	<p>A note has been added to Appendix J (Water Quality TSD), Attachment I, Appendices A and C to indicate that “–” means no value is available. Any blank cells have been replaced with “–”.</p>	<p>Defined “–” in table notes.</p>	<p>Appendix J, Attachment I, Appendix A and Appendix C</p>
201	Wabun Tribal Council	<p>WTC-IR#27: Water Management – Closed loop system between reclaim pond and process plant, Appendix J, Attachment II – Côte Gold Water Quality Modelling Report, Section 2.2.1.1, Appendix J, Attachment II – Côte Gold Water Quality Modelling Report, Figure 3 and Chapter 5, Section 5.10</p> <p>Section 2.2.1.1 under Mine Water Pond and Polishing Pond:</p> <p>A water management strategy has been designed to maintain a closed-loop between the processing plant and the reclaim pond; that is, the water from the reclaim pond does not report to the polishing pond, but rather is recycled back to the processing plant to reduce the requirements for freshwater make-up. As such, the water quality model assumes that the treated effluent discharge from the site does not contain cyanide from the processing plant, or any constituents generated by the cyanide leaching or destruction process. (p.19)</p> <p>Chapter 5:</p> <p>The polishing pond receives excess water from the water management pond. (p.5-22)</p> <p>Excess water accumulating in the mine water pond will be transferred to the TMF pond via a dedicated pipeline. (p.5-24)</p> <p>Mine water from the open pit sump will be pumped to the mine water pond at a rate of approximately 270 m³/h [=6480 m³/day] during normal operations. (p.5-23)</p> <p>Under typical, average annual operations, it is expected that 48,800 m³/d of recycled water will be derived from the mine water pond and from the TMF pond, and 7,200 m³/d of freshwater from the Mesomikenda Lake (total ore processing plant water demand of 56,000 m³/d). (p.5-21)</p> <p>The TMF pond will have an emergency overflow spillway to discharge volumes exceeding its design capacity to Lake Mesomikenda. (p.5-24)</p> <p>Water and other Provincially-approved dust suppressants will be used, as appropriate, to control fugitive dust emissions (an estimated 3,290 m³/d of water from the mine water pond will be used for dust control purposes throughout the Project site). (p.5-34)</p> <p>The Operations Phase Flow Schematic (Figure 3) in the Côte Gold Water Quality Modelling Report shows that water from the process plant will be directed to both the Tailings Management Facility (TMF) and the Mine Water Pond (MWP). Excess water from the MWP is directed to the polishing pond, which may be discharged to Bagsverd Creek and/or Mesomikenda Lake (if not recycled for use at the plant or directed to the reclaim pond).</p>	<p>Figure 3 of Appendix J (Water Quality TSD), Attachment II has been corrected to remove an erroneous arrow denoting flow from the processing plant to the mine water pond. The water that reports to the mine water pond, and therefore the polishing pond, does not include an input from the TMF reclaim pond (i.e., the TMF reclaim pond has been designed to not discharge water to neither the mine water pond nor the polishing pond).</p> <p>The components of the water balance that are relevant to the addition to, or removal of, water (including process water) from local watersheds are described in Appendix I (Hydrology TSD). These water balance components that influence the lake and river system were simulated under operations and closure conditions and varying climate scenarios as described in Appendix I.</p> <p>The TMF will be designed and constructed in accordance with the <i>Lakes and Rivers Improvement Act</i> and the designated Hazard Potential Classification associated with the facility. This will include a provision for storage of severe events above the normal operating water level range. In addition, an Operations, Maintenance and Surveillance Manual will be developed in accordance with Mining Association of Canada guidelines; this document will describe operating procedures and personnel roles and responsibilities.</p> <p>Mine water pond water will be used for dust suppression in areas that drain towards the open pit or the MRA collection ponds. Should dust suppression be required in other areas IAMGOLD would either use other dust suppression measures or fresh water.</p>	<p>The figures have been corrected. The erroneous arrows denoting flow from process plant to the mine water pond have been removed.</p>	<p>Chapter 5, Figure 5-2, Appendix J, Attachment II, Figure 3</p>
202	—	This comment number has not been assigned.	—	—	—

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203	Wabun Tribal Council	<p>WTC-IR#28: Construction phase impact predictions, Appendix J, Attachment II – Côté Gold Water Quality Modelling Report, Section 1.1.7</p> <p>During the construction phase, several water bodies will be realigned and Côté Lake will be drained. Changes to receiver water body chemistry should be anticipated, both from introductions of new water sources and the potential for introduction of entrained TSS during the final stages of dewatering.</p> <p>a) Please screen water chemistry from water bodies to be realigned or drained with water chemistry of receiver water bodies to describe any impacts</p> <p>b) Please describe mitigation measures to be used to prevent any significant effects on receivers during dewatering.</p>	<p>As part of the proposed development of the open pit, Côté Lake will be drained and portions of Three Duck Lakes, Clam Lake, Bagsverd Creek and the Mollie River system will be dammed and/or require realignment. Any concerns with water quality effects would be related to total suspended solids that is generated from sediment disturbance during the later stages of de-watering of Côté Lake. As detailed in Chapter 10 – Mitigation Measures, IAMGOLD has committed to implement best management practices for erosion and sediment control during the construction phase to mitigate potential concerns with respect to discharge of total suspended solids. Details are presented in Table 10-1 of the Amended EIS / Final EA Report.</p> <p>As detailed in Chapter 5 – Project Description, Section 5.10.7.1, the drainage of Côté Lake will require the construction of multiple dams to isolate it from connected water bodies. Côté Lake will be drained following the completion of these dams. The Côté Lake water will be drained to an appropriate receiver in the Mollie River system, which will be determined in consultation with appropriate authorities, local communities, Aboriginal groups and stakeholders.</p> <p>As detailed in Chapter 5 – Project Description, Section 5.10.7.2, Chester Lake currently feeds into the Mollie River, but the realignment will have the outflow of Chester Lake directed to Clam Lake. The average baseline concentrations from the updated Chester Lake and Clam Lake datasets are very similar (see table in the Water Quality Addendum); as such, the input from Chester Lake is not expected to significantly change the water quality in Clam Lake.</p> <p>As detailed in Chapter 5 – Project Description, Section 5.10.7.3, Clam Lake and Little Clam Lake currently flow into the proposed open pit, but the realignment will have the outflow diverted into the West Beaver Pond and the south end of Bagsverd Creek. The average baseline concentrations from the updated Little Clam Lake and West Beaver Pond (P-6) datasets are very similar (see table in the Water Quality Addendum); as such, the input from Little Clam Lake is not expected to significantly change the water quality in the West Beaver Pond.</p> <p>As detailed in Chapter 5 – Project Description, Section 5.10.7.4, Three Duck Lakes will no longer receive flow from Côté Lake. In order to maintain water flow through the Mollie River watershed, channels will be constructed to connect Bagsverd Lake (South) to Weeduck Lake and Weeduck Lake to Upper Three Duck Lakes. The average baseline concentrations from the updated Bagsverd Lake and Weeduck Lake datasets are very similar (see table in the Water Quality Addendum); as such, the input from Little Clam Lake is not expected to significantly change the water quality in the West Beaver Pond.</p> <p>As detailed in Chapter 5 – Project Description, Section 5.10.7.5, Bagsverd Creek will be realigned in order to maintain the connection between Bagsverd Creek and Bagsverd Lake following the construction of the TMF. The realignment will be constructed between Bagsverd Lake and Unnamed Lake #2. The average baseline concentrations from the updated Bagsverd Lake and Unnamed Lake #2 datasets are very similar (see table in the Addendum to Appendix J; Water Quality TSD) with the exception of average iron and concentrations, which are an order of magnitude higher in Unnamed Lake #2 than Bagsverd Lake. The input from Bagsverd Lake is not expected to significantly change the water quality in Unnamed Lake #2, and the iron concentration in Unnamed Lake #2 is expected to decrease with the addition of flow from Bagsverd Lake.</p>	<p>Provided discussion and results summaries that compare baseline water quality of water features to be connected during realignment in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>

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204	Wabun Tribal Council	<p>WTC-IR#29: Model parameter inputs, Appendix J, Attachment II – Côté Gold Water Quality Modelling Report, Section 2.5 and Appendix J Technical Support Document: Water Quality, Section 4.1</p> <p>In Ontario, it is standard practice to use 75th percentile effluent and receiver concentrations for predictive water quality modeling. The Côté Gold Water Quality Modelling Report does not provide the input modeling data for any of the receivers modelled (e.g. Neville Lake, Mesomikenda Lake, Clam Lake, Bagsverd Lake, etc.). For the receivers where less than two years of data are available (see IR# HESL 1), there is insufficient data to adequately undertake any receiver water quality modeling.</p> <p>Section 4.1 states that predicted or simulated water quality results were compared to upper limit (95th percentile concentrations) of existing conditions. The report is not clear, but it appears as though the 95th percentile concentrations are based on the combined data set for all baseline data (all events, sites, and seasons) collected in the local study area. Assessing predicted water quality for specific features (e.g. Neville Lake, Mesomikenda Lake) against 95th percentile local study area concentrations dismisses the sensitivity of specific water features – this inadequately assesses the potential impacts from the Project on receivers. The impact from the Project on water quality for a specific water feature needs to be evaluated against water quality of that specific feature, as this is standard practice.</p> <p>a) Please provide receiver input data used for modeling.</p> <p>b) Update the baseline report with additional sampling conducted through 2013/2014 to obtain sufficient data to calculate 75th and 95th percentile concentrations for receivers.</p> <p>c) Update modelling using 75th percentile concentrations for receiver and effluent concentrations.</p> <p>d) Compare predicted water quality for each feature to its 95th percentile concentrations, not the 95th percentile concentrations for the entire baseline dataset.</p>	<p>The receiver input data (i.e., natural runoff and processing plant runoff) used for the water quality modeling is provided in Appendix J (Water Quality TSD), Attachment II, Section 2.5. The natural runoff water quality input is based on the average concentrations derived from the baseline surface water dataset; this is a reasonable assumption because the variability of the geology across the local study area is limited and therefore the natural runoff quality would be expected to be similar across the local study area.</p> <p>Statistical summaries that include the baseline surface water quality data to May / June 2014 are provided in the Addendum to Appendix J (Water Quality TSD).</p> <p>Concentrations of effluent from the Project site are predicted for every time step in the model. The predicted effluent concentrations are a combination of the drainage from the various facilities (i.e., open pit, TMF, MRA, low-grade stockpile) as per the flow logic within the Project site. As described in Section 2.1 of Appendix J, Attachment II, the water quality model integrates the site water quality predictions with the receiving environment predictions and accounts for variable hydrological conditions within and outside of the site; therefore, a statistical assumption (i.e., 75th percentile) of the effluent concentrations is not needed, as the effluent concentrations will not be static and will depend on hydrological conditions.</p> <p>For comparison purposes, a set of baseline concentrations that represent the upper limit of baseline were derived to assist with the water quality effects assessment, in particular to assist with providing a basis for the magnitude aspect of the impact assessment; the upper limit of baseline was calculated for each parameter using the 95th percentile concentrations. Statistical procedures that have been used to define the upper limit of background include the upper 95% confidence limit, and the 90th or 95th percentile, among others (BCMELP 1997; Hill et al. 2006, Roe et al. 2006). The approach of using the 95th percentile concentrations to define the upper limit of background concentrations is consistent with the Canadian Council of Ministers of the Environment (CCME) background concentration procedure (CCME, 2003). Furthermore, the 95th percentile concentrations were calculated to derive a single set of upper limit baseline concentrations to use as a magnitude benchmark for all assessment locations.</p> <p>A single set of upper baseline concentrations, rather than individual sets of baseline concentrations for each assessment location, were applied to provide a consistent assessment between the assessment locations and to avoid discrepancies when determining the magnitude level (i.e., Level I, II or III). It is recognized that deriving lake specific 95th percentile concentrations would provide more accurate comparisons with respect to determining if concentrations were predicted to be greater than baseline conditions. However, using a single set of concentrations that represent the upper limit of baseline is conservative for the purpose of the magnitude assessment because, if a single concentration at a single water quality effect location was above the upper limit of baseline, then the overall magnitude of effect for water quality would be classified as a Level II; this approach, although perhaps less accurate, is more conservative, and the conservative nature of the approach negates the uncertainty associated with using a single set of concentrations to represent the upper limit of baseline rather than lake-specific concentrations. Therefore, deriving the upper limit baseline concentrations for individual assessment locations would not change the outcome of the magnitude assessment, as a Level II magnitude was assigned for all Project phases and the Level III magnitude requires that the concentration be greater than both the 95th percentile concentration and the water quality guidelines, where applicable. Therefore, for the purposes of this EA, the baseline water quality calculated using the 95th percentile concentrations is appropriate for comparisons to the predicted water quality as part of the water quality effects assessment.</p> <p>In a dataset of many lakes and watercourses of varying size and depth sampled over various seasons, as is the case for the Côté Gold Project, the 75th percentile does not account for naturally occurring concentrations in samples between the 75th and 95th percentiles. Calculation of the upper limit of baseline water quality using the 75th percentile would exclude a significant percentage of samples and does not encompass the full range of naturally occurring conditions that have been measured in the surface water environment (i.e., 25% of samples would be expected to exceed the 75th percentile).</p>	<p>Provided updated statistical summary of baseline water quality results to May / June 2014 in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>

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205	Wabun Tribal Council	<p>WTC-IR#30: Sewage Effluent Modeling, Appendix J, Attachment II – Côté Gold Water Quality Modelling Report, Section 2.1</p> <p>The effects of discharging treated sewage to the environment were not modeled and the point of discharge has not been identified. Even if federal and provincial sewage effluent limits are met, discharging treated effluent to the environment may increase nutrients and reduce dissolved oxygen concentrations in the receivers. These impacts were not considered in the effects assessment, inadequately assessing the impacts of the proposed Project on the environment.</p> <p>Please indicate effluent receiver (or point of discharge) and include treated sewage effluent in model inputs using 75% of effluent concentrations.</p>	<p>During the construction and operation phases, the camp site sewage system is expected to be located upstream of Bagsverd Lake (south). Domestic sewage will be treated using a Waterloo Biofilter® Model 4 Bedroom system. The system contains a patented synthetic, absorbent filter medium that is configured as a free-draining, attached growth biological trickling filter to treat sewage. The system provides aerobic, anaerobic and anoxic environments for biological treatment. Bacteria colonize the filter medium surfaces and degrade and oxidize organic pollutants in the sewage (i.e., nitrate, ammonia and phosphorus).</p> <p>The Waterloo Biofilter® Model 4 Bedroom system has been employed at comparable-sized operations in northern Ontario. Data from the treated side of the system at an analogous site was provided for review (Canadian Shield Consultants, personal communication, 2014). Data from the analogous site were used as inputs to the water quality model to predict the effect of the proposed septic system on downstream receivers. Concentrations of nitrate, nitrite, total ammonia and total phosphorus measured monthly over a period of three years were averaged, and an attenuation factor of 25% was applied to the total phosphorus concentration to account for mass attenuation in the subsurface between the septic tile bed and the groundwater flow system. Studies by Ptacek (1998) and Robertson et. al. (1998) observed that phosphorus attenuation in the vadose zone ranged from 50% to 80%. Furthermore, based on data from a sampling port installed under the area bed at the analogous site, the concentrations of total phosphorus decreased by an order of magnitude from the treated side of the biofilter to the sampling port (Canadian Shield Consultants, personal communication, 2014). Therefore, an attenuation factor of 25% is reasonable and conservative, in particular because the purpose of releasing the sewage effluent through a septic tile system is to attenuate some of the mass load within the vadose zone prior to reaching the water table. It would be expected that further degradation would occur along the groundwater flow path prior to entering the surface water environment; however, additional degradation was conservatively ignored in the water quality modelling.</p> <p>The daily design sewage flow for the Waterloo Biofilter® Model 4 Bedroom system is 146,000 m³/year. The actual flow has been noted to be less than the design flow by 30 to 40% (Canadian Shield Consultants, personal communication, 2014). The model assumes that the anticipated actual flow is 70% of the design flow (i.e., 102,200 m³/year).</p> <p>An attempt was completed to use the Lakeshore Capacity Model to simulate the lakes downstream of the sewage effluent discharge; however, it was determined that these lakes were not a good fit for the Lakeshore Capacity Model approach (for more information see the Addendum to Appendix J; Water Quality TSD). Therefore, a combination of GoldSim and PHREEQC was used to predict the phosphorous concentrations in lakes downstream of the sewage effluent discharge.</p> <p>The total phosphorus concentrations were predicted in Bagsverd Lake (south) and Three Duck Lakes (lower); the results are presented in tables which can be found in the Addendum to Appendix J. Solubility controls were applied to the predicted concentration of total phosphorus under each climatic condition using in the equilibrium geochemical speciation / mass transfer model PHREEQC to account for geochemically creditable phases that are known to control phosphorus concentrations in the natural environment. Predicted concentrations are compared to PWQO in table format in the Addendum to Appendix J.</p> <p>The predicted total phosphorus concentration in Bagsverd Lake (south) and Three Duck Lakes (lower) is lower than the PWQO. Based on the predicted concentrations for total phosphorous, concentrations are therefore expected to be at levels below those that would result in a change to the trophic status of the lakes downstream of the treated sewage effluent discharge.</p> <p>Response continues on next page.</p>	<p>Provided discussion and results summaries that compare baseline water quality of water features to be connected during realignment in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>

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205 cont	See previous page.	See previous page.	The predicted nitrate, nitrite and total ammonia concentrations for Bagsverd Lake (south) and Three Duck Lakes (lower) for average, 1:25-year dry and 1:25-year wet climatic conditions are presented in table format in the Addendum to Appendix J. The predicted annual average concentrations are compared to the PWQO and CWQG, where applicable. The predicted average annual nitrate concentrations in Bagsverd Lake (south) and Three Duck Lakes (lower) are below the CWQG of 13 mg/L (there is no PWQO for nitrate). The predicted average annual nitrite concentrations in Bagsverd Lake (south) and Three Duck Lakes (lower) are below the CWQG of 0.06 mg/L (there is no PWQO for nitrite). The predicted average annual un-ionized ammonia concentrations in Bagsverd Lake (south) and Three Duck Lakes (lower) are below the PWQO and the CWQG. Therefore, the results of adding the sewage effluent to the water quality model do not change the results of the water quality effects assessment.	See previous page.	See previous page.
206	Wabun Tribal Council	<p>WTC-IR#31: Regional Study Area, Appendix J, Technical Support Document: Water Quality, Section 2.2</p> <p>According to EIS Guidelines, a regional study area must be defined. A regional study area was not defined in the EA for water quality, only a local study area. Concentrations of several parameters were modelled to be above the 95th percentile baseline conditions at the limits of the local study area (Mollie River Watershed and the Mesomikenda Lake Watershed) indicating the influence of the project will go beyond the defined local study area. Project effects have not been adequately assessed as potential impacts outside of the local study area have not been assessed.</p> <p>a) Please define the regional study area and implement a water quality monitoring program to document the RSA.</p> <p>b) Please model water quality effects in the RSA to determine impacts from the project outside of the local study area.</p>	The predicted concentrations in Mesomikenda Lake (upper) and Dividing Lake are very close to the 95th percentile baseline concentrations, and well below water quality guidelines. Any small deviations above the upper limit of baseline concentrations are expected to be localized near the downstream end of the local study area. Furthermore, no significant effects were identified within Mesomikenda Lake or Dividing Lake. Therefore, no significant effects on water quality are expected beyond the local study area. However, surface water monitoring will be completed downstream of the local study area to confirm the water quality model predictions; monitoring commitments have been revised accordingly	Revised water quality monitoring commitments to add monitoring downstream of local study area.	Chapter 16, Table 16-1 Appendix J, Section 5.2.1 Appendix Y
207	Wabun Tribal Council	<p>WTC-IR#32: Calculation of the 95th Percentile Baseline Concentrations, Appendix J, Attachment II- Côte Gold Water Quality Modelling Report, Section 3.1.2</p> <p>Aquatic Health Benchmarks were derived using the upper limit of the background (95th percentile baseline concentration). However, these calculations are not defined in the report and it is not indicated whether they are based on the collection of data for several water features or calculated for each individual body of water. These numbers are also not included in the baseline report, nor is the use of the upper limit explained or justified as to why its use was deemed appropriate.</p> <p>a) Please clearly explain the 95th percentile calculation used in the baseline report and provide a rationale for its use.</p> <p>b) Please provide 95th percentile parameter concentrations for individual, potentially affected water bodies.</p>	<p>The requested 95th percentile concentrations for each lake, using the updated baseline dataset available to date, are presented in table format in Addendum to Appendix J (Water Quality TSD). For the purposes of deriving a set of baseline concentrations to assist with the water quality effects assessment, in particular to assist with providing a basis for the magnitude aspect of the impact assessment, the upper limit of baseline was calculated for each parameter using the 95th percentile concentrations. Statistical procedures that have been used to define the upper limit of background include the upper 95% confidence limit, and the 90th or 95th percentile, among others (BCMELP 1997; Hill et al. 2006, Roe et al. 2006). The approach of using the 95th percentile concentrations to define the upper limit of background concentrations is consistent with the CCME background concentration procedure (CCME, 2003). Furthermore, the 95th percentile concentrations were calculated to derive a single set of upper limit baseline concentrations to use as a magnitude benchmark for all assessment locations.</p> <p>A single set of upper baseline concentrations, rather than individual sets of baseline concentrations for each assessment location, were applied to provide a consistent assessment between the assessment locations and to avoid discrepancies when determining the magnitude level (i.e., Level I, II or III). Deriving the upper limit baseline concentrations for individual assessment locations would not change the outcome of the magnitude assessment, as a Level II magnitude was assigned for all Project phases and the Level III magnitude requires that the concentration be greater than both the 95th percentile concentration and the water quality guidelines, where applicable. Therefore, for the purposes of this EA, the baseline water quality calculated using the 95th percentile concentrations is appropriate for comparisons to the predicted water quality as part of the water quality effects assessment.</p>	Provided discussion in the Addendum to Appendix J (Water Quality TSD).	Addendum to Appendix J

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208	Wabun Tribal Council	<p>WTC-IR#33: Predicting dissolved concentrations, Appendix J, Attachment II – Côte Gold Water Quality Modelling Report, Sections 2.5 and Appendix J, Attachment II – Côte Gold Water Quality Modelling Report, Sections 2.6</p> <p>Modeling results are presented as dissolved metals concentrations. In section 2.5 it is not indicated if dissolved or total concentrations were used as input values. For a cohesive model, it is important to use the same data type for input values as those used for output data values. Furthermore, predicting total concentrations is the standard accepted method as it provides a conservative assessment and water quality guidelines are given in total concentrations.</p> <p>a) Please clarify what data type was used for input data.</p> <p>b) Please provide a rationale for why there was a deviation from standard protocol and what such alterations mean in terms of impact assessment.</p>	<p>For the input data described in Appendix J (Water Quality TSD), Attachment II, total or dissolved concentrations were used as input values depending on the specific source of the water quality data. For example, the natural runoff and process plant area runoff input (as described in Section 2.5.1) was derived from the surface water quality baseline dataset and used total metals concentrations; the model, therefore, assumes that the total concentrations are equal to dissolved concentrations for this model input. The use of total metal concentrations to derive runoff water quality inputs is conservative, as the total concentrations are greater than the dissolved concentrations. The open pit groundwater seepage input (as described in Section 2.5.2) was derived from the groundwater quality baseline dataset and used dissolved metal concentrations. The dissolved concentrations are more relevant to groundwater because suspended solids are not transported through the subsurface, except perhaps in karst environments. Therefore, it is not relevant to use total concentrations for groundwater quality model inputs.</p> <p>Despite using a combination of total and dissolved concentrations as inputs to the water quality model, the water quality model is considered to simulate “dissolved” concentrations that are conservatively transported through the modelled system; that is, the model does not holistically account for solubility controls and therefore does not remove the mass that precipitates from solution and falls out of the water column through sedimentation processes. As such, the model simulates the water quality as if no mass is lost as it moves through the system, whether the mass is transported through the subsurface or surface water environments. In reality, mass is lost along subsurface and surface water flow pathways through adsorption / complexation, co-precipitation, precipitation, and solid-solution substitution reactions. The water quality modelling approach taken as part of the water quality effects assessment is a standard, well-recognized, and conservative approach that does not deviate from “standard protocol”.</p>	None.	n/a
209	Wabun Tribal Council	<p>WTC-IR#34: Model assumptions – geochemistry, Appendix J, Attachment II – Côte Gold Water Quality Modelling Report, Section 2.6 and Chapter 5, Section 5.3.4</p> <p>Screening-level static testing was not conducted on rock samples and no geochemistry data is available for Project-specific tailings. Assumptions have been made despite this lack of data. To fully understand the implications of these decisions, evaluation by a geochemist is required.</p> <p>The geochemistry section provides various descriptions of sulfur and sulphide content and various classifications of Potential Acid Generating materials for lake sediments, mine work and overburden with no clear definition of what the criteria and thresholds are for PAG materials.</p> <p>a) Please provide a rationale for the lack of a complete geochemical assessment, a schedule for submission and an explanation for its implications to the EIS.</p> <p>b) Please provide a consistent criterion, with rationale, for the classification of PAG materials from the site, and a description of how PAG materials would be identified during construction and operations.</p> <p>We recommend review of the geochemical characterisation by a qualified geochemist.</p>	<p>a) A comprehensive investigation and evaluation of the metal leaching / ARD characteristics of waste rock and tailings has been completed and documented in Appendix E (Geochemistry TSD). This work included static testing of a set of 236 mine rock samples from drill core by full acid base accounting analysis. The work further included a proxy analysis of an additional 912 samples of archived rock pulp samples using total carbon and total sulphur to assess the acid generating nature of the mine rock. In addition, 93 simulated tailings samples were analysed by standardized acid base accounting test procedures. This static testing was supplemented by the initiation of kinetic tests in the form of mine rock humidity cells and field cells. Additional work not available at the time of this report including humidity cell testing of simulated tailings produced by metallurgical testing is underway. In addition, operation and analysis of existing mine rock humidity cells and mine rock field cells is continuing.</p> <p>b) In accordance with accepted practice and guidance in MEND Report 1.20.1 (2009) an NPR of <2 has been identified as potentially acid generating (PAG) for the purposes of mine rock management planning. Interpretation of the anticipated behaviour of the rock with respect to potential for acid generation is further supported by the proxy analysis of a larger set of samples using Leco C and S data to derive an NPR based on maximum potential acidity.</p> <p>Investigations carried out on the Project to date indicate that PAG rock (on the basis of an NPR <2) is present as small isolated volumes that are distributed randomly through the significantly greater mass of the Non-PAG mine rock. These PAG materials likely represent occasional clusters of sulphides that occur within the mineralized area of the Côte gold deposit. Further the PAG rock tends to be composed of low sulphide (mean = 0.36% S) material with lower contents of minerals that provide acid neutralization capacity. The Non-PAG rock is also low sulphide but contains much higher concentrations of minerals that neutralize acidity. In fact the Non-PAG rock contains an excess of acid neutralization capacity. A mass-balance comparison of the net acid generation capacity of the PAG rock compared to the net acid neutralization capacity of the Non-PAG rock suggests that the overall acid neutralization capacity of the Côte mine rock is approximately 120 times greater than the acid generation capacity. Therefore the potential for net acidic conditions to occur in the Côte mine rock is considered to be extremely small.</p> <p>On this basis it has been identified that segregation of PAG rock during operations would not only be challenging, but is not expected to be necessary or beneficial.</p>	None.	n/a

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210	Wabun Tribal Council	<p>WTC-IR#35: Fate of PAG and Metal Leaching Materials, Chapter 5, Section 5.5</p> <p>"In the case of mine rock, provide for an optimal closure scenario for potential ARD/ML management using passive systems to the extent possible, but with a contingency arrangement for chemical treatment if and where required" (p.5-8)</p> <p>This would appear to contradict the previous geochemistry section, which concluded that general mixing with waste rock would neutralize any PAG as its general occurrence is low. How can PAG and metal leaching be managed if the source materials are blended in with all other rock?</p> <p>a) Please describe the contingency systems for management of PAG and metal leaching rock at closure.</p> <p>b) Please indicate how these could be implemented if the source materials were blended throughout the waste rock piles.</p> <p>c) Please provide a rationale for NOT segregating PAG and metals leaching waste materials to allow direct management and mitigation if needed.</p>	<p>The Côté Gold Project is a low sulphide low metal mineral deposit with a very low probability of ARD occurrence. The high neutralization capacity of the rock coupled with the low sulphide content will insure net acid consuming conditions within the mine rock pile resulting in no acidic drainage and low rates of metal leaching. Therefore no specific management of PAG and/or metal leaching rock is required.</p> <p>Evidence to date suggests that the occurrence of PAG materials will be as small isolated volumes of limited extent. These small isolated PAG volumes will be mixed with and surrounded by large volumes of non-PAG rock with large amounts of excess neutralization capacity. Identification, isolation and segregation of these small volumes would be cost prohibitive and provide no environmental benefit. An adaptive management approach will be applied to manage the surface and seepage water should monitoring results identify a need to treat the effluent for ARD or metal leaching. Contingency measures to be used will be dependent on the technologies available during the closure period.</p>	None.	n/a
211	Wabun Tribal Council	<p>WTC-IR#36: Lack of impact assessment, Chapter 11, Table 11-3</p> <p>Drainage of Côté Lake into another water body and realignment of other water features may cause changes in water quality. These activities were not included as having possible impacts on the aquatic environment during the construction phase of the Project.</p> <p>Please assess the potential impact on water quality of drainage of Côté Lake water to another water body and realignment of other water features, and describe mitigation or address why these activities are not considered concerns.</p>	<p>Côté Lake is currently draining to Three Duck Lakes. The water quality of Côté Lake and Three Duck Lakes is similar. Therefore, draining Côté Lake to Three Duck Lakes in the early stages of construction will not negatively affect the water quality in Three Duck Lakes. Similarly, the realignments will establish a connection between water bodies that have similar water quality. A comparison of the water quality of the various water features is provided in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Provided comparison of water quality for lakes affected by re-alignment in Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum for Appendix J</p>
212	Wabun Tribal Council	<p>WTC-IR#37: Predicted total phosphorus concentrations, Chapter 9, Section 9.9.2.2 and Appendix J, Appendix B, Section 2.5.1</p> <p>Section 9.9.2.2 states:</p> <p>Total phosphorus may be overstated in the predictions due to elevated baseline analytical results. Thus, no effects to aquatic life are expected in the Mollie River associated with water quality. (p.9-54)</p> <p>The elevated concentrations of phosphorus predicted by the model are suggested to be due to elevated baseline analytical results. However, as outlined in Appendix J, Appendix B, and Section 2.5.1, phosphorus input data were based on measurements that were obtained with a lower than originally used method detection limit (Samples were originally collected at a sdl of 0.02 mg/L, then resampled at a dl of 0.006 mg/L - we note that commercial labs can obtain a dl of 0.002 mg/L). Therefore, high phosphorus concentrations cannot be the result of analytical issues. In addition, baseline data with high concentrations do not necessarily result in high predictions in the modelling exercise, and the explanation presented (high baseline) does not adequately rule out effects to aquatic life.</p> <p>Please correct the statement in Chapter 9 section 9.9.2.2, repeat the assessment using good phosphorus data, or clarify if there has been a misunderstanding.</p>	<p>The reviewer is correct in that the total phosphorus baseline concentrations that were analyzed via spectrophotometer (lower level detection limit) are solely used for the water quality model inputs to calculate baseline surface water loading rates. However, source-term loading rates that use the humidity cell data were conservatively estimated from humidity cell leachate that was analyzed via Inductively Coupled Plasma Mass Spectrometry. Furthermore, the water quality model allows for the mass load for all parameters, including total phosphorus, to be transported through the modelled system without accounting for geochemical controls. This approach is conservative because: i) conservatively high leachate concentrations from humidity cell tests were applied to calculate total phosphorus loading rates from the mine rock, and ii) the water quality model does not account for attenuation / sequestration of total phosphorus along the surface water flow paths. Given the conservative approach used in the modelling, it is likely that predicted total phosphorus concentrations are overstated. The statement in Chapter 9 – Description of Project Effects, Section 9.9.2.2 was meant to reference the geochemical baseline data; this assumption will be revised to specifically reference the kinetic test results.</p> <p>The predicted annual average total phosphorus concentrations for Neville Lake and Mesomikenda Lake were completed using the Lakeshore Capacity Model and are presented in table form in the Addendum to Appendix J (Water Quality TSD). The average baseline total phosphorus concentrations presented in table for Neville Lake and Mesomikenda Lake were analyzed via the colourmetric method to a detection limit of 0.006 mg/L. A revised PWQO for each lake was calculated by increasing the average baseline total phosphorus concentration by 50%, in accordance with Section 2.2 of MOE et al. (2010).</p> <p>The predicted annual average total phosphorus concentration in Neville Lake and Mesomikenda Lake are below the revised PWQO. Any changes in phosphorus concentrations are not expected to result in a meaningful change in dissolved oxygen concentrations relative to the resident biota nor cause a shift in the productivity of the lakes.</p>	<p>Revised reasoning for high phosphorus in the receiving waters; provided revised phosphorus predictions in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Chapter 9, Appendix N (Aquatic Biology TSD); Addendum to Appendix J (Water Quality TSD)</p>

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213	Wabun Tribal Council	<p>WTC-IR#38: Water quality impact assessment for operations phase, Chapter 11, Table 11-4 and Appendix J</p> <p>The magnitude level assigned to changes in water quality is II. This may be incorrect for several reasons.</p> <p>First, phosphorus was above the aesthetic guideline, immediately suggesting a designation of Level III would be more appropriate.</p> <p>Second, guidelines that are based on pH, temperature or hardness were calculated using averages instead of on an individual basis - and this would bias the assessment. Thus, it is possible that other parameters exceeded guidelines as well, but were never detected due to miscalculated guidelines.</p> <p>Third, treated sewage effluent was not included in model input data. The addition of treated wastewater to the environment could further increase nutrient concentrations.</p> <p>Fourth, changes in general parameters including pH, alkalinity, dissolved oxygen, temperature and total suspended solids were not predicted. High nutrient levels may cause an increase in production, causing a decrease in dissolved oxygen. Dissolved oxygen levels may drop below guideline values.</p> <p>Fifth, model predictions were based on input values. The values used for input parameters were the averages of data from several water features. Use of a regional value instead of a value specific to the receiving water body as an estimate of baseline may not provide adequate protection to the specific receiving waters.</p> <p>Finally, The maximum values predicted were the maximum of the average and not a true gauge of possible elevated concentrations in specific water bodies. Additionally, the average values were from various water features (including creeks, lakes and ponds) and the number of samples per water body ranged from 0 to 22. The large range in sample sizes between would bias the results toward more frequented sample sites unless the averages were weighted, and there is no indication that this was done. The spectrum of water features sampled would increase the variance in parameter concentration and make it less likely to determine if changes in concentrations due to the Project were significantly greater than background conditions.</p> <p>Please reanalyze the impact the Project may have on water quality during the operations phase using data specific to potentially impacted water bodies, or provide rationale as to why the current methods were used and how they are more stringent or protective than the use of data that are specific to the water body being assessed.</p>	<p>As part of addressing comments on the EA, the predicted concentrations of phosphorous were re-evaluated by accounting for solubility controls and/or following the MOECC recommended guidance to use the Lakeshore Capacity Model approach (MOE et al., 2010); these results are provided in the Addendum to Appendix J (Water Quality TSD). Based on these calculations, any changes in phosphorus concentrations are not expected to result in a meaningful change in dissolved oxygen concentrations relative to the resident biota nor cause a shift in the productivity of the lakes.</p> <p>The average pH, temperature and hardness values were used to calculate guideline values that depend on these parameters, which were evaluated versus the predicted water chemistries to confirm that the approach was scientifically sound. This approach is taken to develop a single set of benchmarks, which allows a transparent and consistent evaluation of the baseline water quality data and prediction of Project effects for all assessment locations. For parameters that have guidelines dependent on the value of other parameters, the predicted Project impacts need to be assessed by assigning water quality guidelines that reflect the predicted water chemistry of the surface water environment, not the water chemistry under existing conditions; this is particularly important for parameters that have guidelines that depend on variables such as hardness that will vary from existing conditions due to the predicted changes in water quality.</p> <p>Treated sewage effluent was included in the water quality model and the predictions to the receiving surface water environment were re-simulated; these results are provided in the Addendum to Appendix J (Water Quality TSD). The added nutrient load to the Mollie River Watershed is not predicted to change the magnitude levels, and therefore does not change the impact assessment conclusions.</p> <p>Potential changes to pH, alkalinity, dissolved oxygen, temperature and total suspended solids were qualitatively assessed and considered as part of the effects assessment. The pH, alkalinity and temperature of the surface water environment is expected to not materially change from the baseline conditions. In response to comments regarding the potential effects on total suspended solids concentrations, conservative calculations were completed to assess the effect that total suspended solids discharged from the polishing pond would have on receiving surface water quality; these results are presented in the Addendum to Appendix J. The discharge of total suspended solids at conservatively high concentrations (i.e., maximum permissible effluent total suspended solids concentration) from the polishing pond is predicted to have limited effect on the receiving surface water concentrations and not change the magnitude assessment.</p> <p>Nutrient levels have been predicted as part of the EA. Based on the predicted concentrations of nutrients, the trophic status of the lakes is not expected to change and concentrations of dissolved oxygen are not expected to drop below guideline values.</p> <p>The effects prediction methodology is considered to be protective of the aquatic environment. It is scientifically sound to average baseline water quality data across several water features for the purposes of deriving a natural runoff water quality input for the water quality model because their baseline levels do not differ in a material way with respect to evaluating the effects.</p> <p>The maximum water quality values that are presented in Appendix J are the maximum monthly average concentrations. Use of the maximum monthly average concentrations is a scientifically sound approach for comparison to the guideline values.</p> <p>The maximum water quality values presented in Appendix N (Aquatic Biology TSD) are the absolute maximum concentrations. Therefore, the absolute maximum concentrations, and their duration, have been considered for the prediction of effects on the aquatic environment, where these type of results are more appropriately discussed.</p>	<p>Provided revised phosphorous predictions and analysis of potential total suspended solids effects in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>

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214	Wabun Tribal Council	<p>WTC-IR#39: Update Report text and Table 1 re: Surface Water Sampling Frequency, Appendix J, Attachment I – Water Quality Baseline Report, Section 4.1.1</p> <p>Surface water quality sampling was initiated in October 2011 at selected sites, and additional sites were added in 2012 and 2013. It is not clear from the report when the sampling events occurred and how many times or when each site was sampled. Table 1 – Summary of Surface Water Quality Monitoring Program provides the date in which the first samples were first collected from each site, and the sampling frequency for ongoing monitoring and data collection (e.g. monthly, quarterly), but does not provide the number of times each site was sampled (N) or when it was sampled (e.g. July 2012).</p> <p>The report text does not clearly describe when baseline sampling events occurred, and the timeframe for baseline data is included in the baseline report (as monitoring is ongoing).</p> <p>This information is important to assess the adequacy of the water quality sampling program used to document baseline conditions and evaluate the potential effects in the environmental assessment. This material may be available in appendices but does not provide the needed summary for the main body of the report.</p> <p>a) Please update the text in section 4.1.1 to include the events in which surface water quality was monitored for the report (as provided in section 4.2 Groundwater Monitoring).</p> <p>b) Please update Table 1 – Summary of Surface Water Quality Monitoring Program to include the events (e.g. October 2011, July 2012...) and number of events (e.g. N=3) at each station that was sampled and included in the baseline report.</p>	<p>Although not summarized in Table 1 in Appendix J (Water Quality TSD), Attachment I, the analytical data and sampling dates are provided in Appendix J, Attachment I, Appendix A.</p> <p>As requested, an updated summary table is provided in the Addendum to Appendix J (Water Quality TSD). The new summary table details the specific sampling dates and number of events.</p>	<p>Provided table that summarizes baseline water quality program in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>
215	Wabun Tribal Council	<p>WTC-IR#40: Lack of reference sites, Appendix N – Appendix C</p> <p>Schist Lake was sampled as a potential reference lake for future studies. However the benthic communities in both the shallow and deep stations proved to be quite different and it is not recommended that it be used in future studies. (p.iii)</p> <p>The benthic community within Bagsverd Creek was very different than Errington Creek in density, taxon richness, Simpson's Evenness and community composition. Despite that Errington Creek represented a similar size water course and upstream watershed size, was located within the same watershed as Bagsverd Creek and appeared to be a good reference, the benthic communities were very different and it is therefore recommended that Errington Creek not be used as a reference in the future for Bagsverd Creek. (p.iii)</p> <p>Reference locations are needed during the construction and operations phases to provide a comparable dataset and allow for spatial comparisons in the future. The east arm of Schist Lake was the only reference area deemed to be an appropriate reference for fish. Both the lentic (Schist Lake) and lotic (Errington Creek) benthic invertebrate reference sites were considered inappropriate because of the natural differences in community assemblage between these sites and potentially impacted sites.</p> <p>Please provide alternate lentic and lotic reference sites for benthic invertebrates and lentic reference sites for fisheries.</p>	<p>At the time of the baseline field studies, Schist and Errington Creek were selected as possible reference locations based on their location within the watershed, size and structure. When in the field Errington Creek looked very similar yet smaller than Bagsverd Creek. However, as noted the benthic communities in the proposed areas differed. A survey will be undertaken before mine development to locate appropriate reference areas for all identified mine exposure areas. This will require field observations and sampling prior to effluent discharge.</p>	<p>None.</p>	<p>n/a</p>
216	Wabun Tribal Council	<p>WTC-IR#41: Benthic invertebrate sampling in Mesomikenda Lake, Appendix N, Section 5</p> <p>Mesomikenda Lake is a possible effluent discharge site; however benthic invertebrate samples were not taken from this location. There is therefore a) no predevelopment baseline for future comparisons and b) no means to assess the baseline sensitivity and resilience of the aquatic community in the lake.</p> <p>Please provide benthic invertebrate community results for Mesomikenda Lake. If no further sampling is expected please provide justification for the lack of samples from this location.</p>	<p>Benthic samples were not collected in the north end of Mesomikenda Lake as water quality modelling had indicated that the preferred location for discharge was Bagsverd Creek and as such benthic sampling was not conducted up and downstream of the proposed Mesomikenda discharge location. If the Mesomikenda location is ultimately selected as the preferred discharge location, then benthic sampling will be conducted prior to site construction.</p>	<p>None.</p>	<p>n/a</p>

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217	Wabun Tribal Council	<p>WTC-IR#42: Lack of periphyton, phytoplankton and zooplankton data, Appendix N</p> <p>Periphyton, phytoplankton and zooplankton do not appear to have been sampled during the characterization of baseline conditions. These biota provide important information regarding food sources for higher trophic levels, food web dynamics and they are all effective biomonitoring tools due to well-studied habitat requirements, especially those related to changes in nutrients. They are also a requirement of the EIS Guidelines.</p> <p>Please provide baseline periphyton, phytoplankton and zooplankton data for water bodies or a commitment to collect these data prior to any site disturbance.</p>	<p>Periphyton, phytoplankton and zooplankton monitoring was not conducted as part of the baseline studies. Secchi depth and nutrient concentrations were measured as an indicator of lake productivity. Periphyton, zooplankton and phytoplankton were assessed as monitoring tools for mining impact assessment as part of the Aquatic Effects Technology Evaluation (AETE) Program (St-Cyr et al. 1997). The AETE program was used to assess and recommend the most appropriate monitoring tools for the Federal Environmental Effect Monitoring program for the mining sector in Canada. These measures (periphyton, zooplankton and phytoplankton) were not included in the environmental effects monitoring (EEM) program due to their temporal variability and limited use in assessing conditions over time. Zooplankton, phytoplankton and periphyton communities can change due to numerous habitat factors (e.g., weather, water temperature, light). So that the ability to control for these factors and standardize monitoring results is extremely difficult (St-Cyr et al. 1997, APHA 1998, Lewis and McCutchan 2010, McIntire 1966, Jowett and Biggs 1997, Biggs et al. 1998, Bourassa and Cattaneo 1998, Barbour et al. 1999, Aron et al. 2007, Wetzel 1983). Furthermore, standardization in laboratory identification of periphyton cannot be demonstrated and thus identified taxa can vary between laboratories. Thus, the sampling of the plankton and periphyton communities was not deemed appropriate as a long term measure of conditions in mine exposed water bodies.</p> <p>Benthic invertebrates were selected as a biomonitor for the Côté Gold Project as they are excellent for assessing potential effects of the chemical condition of water and sediment on the health of aquatic systems (Barbour et al. 1999, Feltmate and Fraser 1999) because they: are good indicators of localized conditions (they generally have limited migration patterns or a sessile mode of life); integrate the effects of short-term environmental variations over the longer-term; reflect the community level of organization, including a range of trophic levels and pollution tolerance, providing numerous useful assessment endpoints; are relatively easy to identify to family and many taxa can be identified to lower taxonomic levels with ease; and serve as an important direct or indirect food source for fish.</p>	None.	n/a
218	Wabun Tribal Council	<p>WTC-IR#43: Fish tissue results, Appendix N, Appendix C, Section 6 and Appendix N, Appendix C, Appendix F</p> <p>Fish tissue contaminant results are presented in Appendix F but not discussed in the text. Please provide a description of fish tissue results and how these results relate to fish consumption guidelines.</p>	<p>While fish tissue results are not presented in the HEHRA, fish consumption is acknowledged and addressed as a potential exposure pathway.</p> <p>This exposure pathway was evaluated through an examination of predicted changes in surface water quality obtained through modelling. Predicted concentrations of contaminants of concern during each of the phases of the Project were compared to Human Health benchmarks. The benchmarks used are considered protective of all exposure pathways relevant to surface water including direct ingestion, dermal contact during swimming and indirect ingestion of fish.</p> <p>Comparison of the predicted concentrations to human health benchmarks indicated no exceedances; therefore, it was concluded that there would be no incremental risks attributable to the Côté Gold Project from fish consumption in the Project area.</p> <p>Further information is available in Appendix W (HEHRA), Section 2.2.3.3.</p>	None.	n/a
219	Wabun Tribal Council	<p>WTC-IR#44: Fish tissue results, Appendix N – Appendix C, Appendix F</p> <p>Fish tissue was not analyzed for methylmercury. The decomposition of flooded organic matter in soils and vegetation will occur at the Côté Gold Project and this enhances the methylation of mercury to the bioavailable and toxic form, which can biomagnify within the food chain.</p> <p>Please provide a commitment and procedure to collect baseline methylmercury concentrations in forage and predator fish and water prior to site disturbance.</p>	<p>It is true that methyl mercury represents the biologically available form of mercury accumulated by fish in their tissue. Therefore, the mercury concentrations measured in fish tissue represent methyl mercury (Grieb et al. 1990) and it does not need to be analyzed as methyl mercury. Total mercury (representing methyl mercury) has been analyzed in forage and sport fish from most water bodies within the study area.</p>	None.	n/a

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220	Wabun Tribal Council	<p>WTC-IR#45: Mark-recapture population estimates, Appendix N, Appendix C, section 6.2.2</p> <p>Mark-recapture studies designed to estimate fish population size were performed in Côté Lake and Unnamed Lake #1 but not in any other water bodies. Population sizes of northern pike, white sucker and walleye were assessed against appropriate comparisons to indicate the general productivity of the two lakes but it is unclear why these two lakes were the only ones selected. We assume that these two lakes will be removed during site construction and, if so, this would provide the needed rationale as population estimates are required to develop habitat compensation plans.</p> <p>Please provide rationale for the selection of Côté Lake and Unnamed Lake #1 as the locations for the mark-recapture estimates.</p>	<p>When the baseline work was initiated in 2012, the final location for the TMF was not selected and there was a potential that Unnamed Lake 1 would be lost. Therefore, mark-recapture studies were conducted in Côté and Unnamed Lake 1 to assess the lakes potentially lost due to the Project development.</p>	None.	n/a
221	Wabun Tribal Council	<p>WTC-IR#46: Site selection, Appendix N – Appendix C, Section 2, p. 7</p> <p>There were no standardized methodologies used to determine an appropriate number of sample sites to characterize fish and benthic invertebrates in each water body. Five sites were sampled in each water body regardless of surface area or homogeneity of benthic habitat.</p> <p>Please provide justification for the number and location of sample sites and indicate if benthic invertebrate sites were chosen in equal proportion to the type of benthic habitat.</p>	<p>The number of benthic samples collected from each lake was established to take within-area variability into account and to allow for comparisons among lakes. Assuming Environment Canada's minimum criterion for risk of type 1 (alpha or false positive) and type 2 (beta or false negative) errors of 10% (0.1; Environment Canada 2012), and having a goal of detecting differences between areas of \pm two times the reference area standard deviation, then a minimum number of five stations per area is required to provide adequate statistical power. Stations were standardized to the extent possible for habitat factors (i.e., depth, substrate, position relative to the thermocline) to reduce variability among lakes and allow for more meaningful comparisons.</p>	None.	n/a
222	Wabun Tribal Council	<p>WTC-IR#47: Benthic invertebrate sampling depth, Appendix N – Appendix C, section 2, p. 7</p> <p>Collection of benthic invertebrates at various depths was justified through the examination of dissolved oxygen concentrations. The benthic invertebrate community was not very diverse and contained a high proportion of tolerant species, likely because of habitat limitations. Collection of species from the littoral zone might have increased diversity and included less tolerant species that could be more readily impacted in the future and thus act as more sensitive biological indicators.</p> <p>Please consider the collection of littoral benthic invertebrates to increase taxa diversity and the sensitivity of the aquatic bioassessment.</p>	<p>While it is true that benthic invertebrate richness (number of taxa) would be expected to be higher closer to shore, metals from mining activities tend to partition to the sediments through the adsorption onto fine particulate materials that eventually settle to the bottom (Ongley 1996, McKay et al. 2001, DiToro et al. 2005) and thus effects from mining are generally observed in the depositional zone of lakes and streams. Thus baseline monitoring targeted depositional habitats downstream of proposed mining activity.</p>	None.	n/a
223	Wabun Tribal Council	<p>WTC-IR#48: Aquatic species at risk, Appendix N – Appendix C, Section 6 and Appendix N – Appendix C – Appendix A</p> <p>Fish habitat was described in great detail but was not assessed in accordance with the habitat requirements of any provincially or federally listed Species at Risk. Fish communities were assessed for the presence COSEWIC listed endangered, threatened or special concern but not COSSARO (Committee on the Status of Species at Risk in Ontario) species.</p> <p>a) Please characterize fish habitat in terms of habitat requirements for provincially and federally listed Species at Risk.</p> <p>b) Please determine the presence of any COSSARO listed species.</p>	<p>a) As of May 2014, a total of 159 fish species have been placed into the 5 Committee on the Status of Endangered Wildlife in Canada (COSEWIC) risk categories. Of these 56 are endangered, 40 are threatened and 54 are listed of special concern (COSEWIC 2014). Five of the endangered species listed are found in Ontario, however none of these are within the vicinity of the Côté Gold development. Of the 40 threatened fish species, 7 are observed in Ontario, however all of these species can only be found in southern Ontario. None of the 11 special concern species are found within the vicinity of the Côté Gold development. Thus characterization of habitat for these species is not applicable.</p> <p>b) The only Committee on the Status of Species at Risk in Ontario listed fish species found in the Sudbury region is the lake sturgeon. The southern Hudson Bay / James Bay population is listed as special concern and the Northwestern Ontario and Great Lakes-Upper St. Lawrence River populations are listed as threatened. Mesomikenda Lake is part of the headwaters of the Moose River Basin. In the Moose River Basin, lake sturgeon are found throughout many of the larger rivers and their tributaries, however are mostly absent from the most southern Canadian shield portions of the basin where the Côté Gold Project lies (Ministry of Natural Resources 2008). Lake sturgeon preferred habitat is larger lakes and river, with soft bottoms of mud, sand or gravel. They are usually found at depths from 5 to 20 m. Spawning habitat is typically found in relatively shallow, fast flowing water with gravel and boulder substrate, however they will spawn in deeper water or on open shoals.</p>	None.	n/a

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224	Wabun Tribal Council	<p>WTC-IR#49: Fish habitat surface area, Appendix N – Appendix C, Section 6 and Appendix N – Appendix C – Appendix A</p> <p>Water bodies and fish habitat sites were not identified that could potentially be rehabilitated, restored or created to offset losses from the proposed Project.</p> <p>Please provide potential water bodies and fish habitat sites that could be utilized in the future to offset losses from the proposed Project.</p>	<p>The Project will result in changes in fish habitat through the loss of Côté Lake and parts of Bagsverd Creek, Upper Three Duck Lake, Clam Lake and the Mollie River. These losses will be off-set by the construction of the realignment channel that will connect Bagsverd Lake to Unnamed Lake #2, the realignment channel from Chester Lake to Clam Lake, the increase in water level in Chester Lake and the south arm of Bagsverd Lake (Figure 1.2 Appendix N). In addition, at closure the open pit will be allowed to fill and will be reconnected to Upper Three Duck Lake which will provide additional fish habitat, although this habitat was not considered in the impact assessment as it will take more than 50 years for the pit to fill following closure.</p>	None.	n/a
225	Wabun Tribal Council	<p>WTC-IR#50: Fish habitat surface area, Appendix N – Appendix C, section 6</p> <p>The resilience of fish species to potential impacts was not discussed.</p> <p>Please discuss the resilience of resident fish species to potential impacts.</p>	<p>The predominant fish species found in the local study area are northern pike and yellow perch. Both northern pike and yellow perch are known for their tolerance to broad water temperature ranges and low dissolved oxygen concentrations (Inskip 1982, Krieger et al. 1983). The occurrence of northern pike over a broad latitudinal belt in North America demonstrates their adaptability to a variety of thermal regimes and conditions (Inskip 1982). In addition to northern pike and yellow perch, walleye, white sucker and lake whitefish were also common and varied in abundance depending on lake habitat. White sucker are highly adaptable fish species found in both lake and river habitat over a broad range (Twomey et al. 1984, Scott and Crossman 1998). Walleye are generally not located within areas that will be lost due to the mine development and lake whitefish were only found within Côté Lake (very low abundance) and potentially use the habitat within the arm of Upper Three Duck Lake. Walleye are tolerant of a wide range of environmental conditions but are generally most abundant in moderate-to-large lacustrine (>100 ha) or riverine systems characterized by cool temperatures, shallow to moderate depths, extensive littoral areas, moderate turbidities, extensive areas of clean rocky substrate and mesotrophic conditions (McMahon et al. 1984). Lake whitefish are widely distributed in Ontario and typically inhabit deep inland lakes. In its northern distribution whitefish will live in streams flowing into Hudson Bay and regularly descend into brackish water. It is not anticipated that many walleye or lake whitefish will require relocation from lost habitat areas. As for changes in habitat within lakes where these species do reside, it is anticipated that water levels will generally not be altered greater (up or down) than 1.2 m. Little Clam Lake is the only water body that will fall outside this where water level may decrease by 2.4 m. Neither walleye nor lake whitefish are present within this lake.</p>	None.	n/a
226	Wabun Tribal Council	<p>WTC-IR#51: Fish statistics, Appendix N, Appendix C, section 6, figures 6.1 – 6.5</p> <p>The relationship between fish statistics (age, length and weight) was only displayed visually through a scatterplot. A linear regression would allow for better incorporation of these relationships into future assessments and a statistical detection of change.</p> <p>Please provide results of a linear regression between fish statistics (age, length and weight).</p>	<p>The length and weight relationship for fish data was only displayed visually through a scatter plot in the baseline report. The objective of this figure was to demonstrate that the growth was similar in all the lakes surveyed within the local study area. The distribution of data, sample sizes and range of data available for each lake varied greatly, therefore the data was displayed in this fashion as some samples sizes are insufficient to apply a linear regression. Linear regressions were applied to length at age relationships where age data was observed in greater than three age classes. All raw data is available for future comparisons.</p>	None.	n/a

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227	Wabun Tribal Council	<p>WTC-IR#52: Statistical assumptions for ANOVA, Appendix N – Appendix C, section 2 ANOVA and post-hoc tests were used during the evaluation of benthic macroinvertebrate communities. When statistical assumptions could not be met, a non-parametric (i.e. Tamhane's) post-hoc test was utilized, but ANOVA requires a variety of statistical assumptions as well.</p> <p>Please amend section 5 to indicate if the non-parametric equivalent of ANOVA (i.e. Kruskal Wallis Test) was used when the statistical assumptions for ANOVA could not be met.</p>	<p>The method section of the baseline report (Appendix N) states the statistical methods used in the benthic analysis as follows:</p> <p>All benthic endpoints were summarized by separately reporting mean, median, minimum, maximum, standard deviation, standard error and sample size for each sampling area (Environment Canada 2012). Differences between areas were tested using Analysis of Variance and post-hoc Bonferroni comparisons. Data were transformed as necessary to satisfy assumptions of normality and homogeneity of variance. In instances where variances could not be homogenized by transformation, post-hoc tests not requiring this assumption (Tamhane's) were used instead of Bonferroni comparisons. Statistical tests and plots were generated using SPSS Version 12.0 (SPSS Inc., Chicago, IL).</p> <p>The above describes how IAMGOLD elected to deal with both parametric and non-parametric data. Although the Kruskal Wallis test could have been used it would not have changed the outcome of the results (stats re-run with the Kruskal Wallis test to assess the implications of using this method and no difference in key metrics was found). Basically, the Kruskal Wallis test is a non-parametric version of an Analysis of Variance. It is an extension of the Mann-Whitney U where more than two samples can be compared. A Mann-Whitney will only compare two samples like a t-test.</p> <p>Tamhane's test is different than the Kruskal Wallis – a Tamhane test will compare all sites and identifies the differences between all sites, where a Kruskal Wallis test will only determine whether the samples within the test are the same or they are different (same as an Analysis of Variance). There is not a single non parametric comparison test to conduct after the Kruskal Wallis test to determine this, unless you run a number of Mann-Whitney U tests.</p>	None.	n/a
228	Wabun Tribal Council	<p>WTC-IR#53: Statistics, Appendix N – Appendix C – Appendix E</p> <p>The level of significance assigned during ANOVA was $p < 0.1$ instead of the commonly accepted $p < 0.05$, promoting the potential for statistically significant differences between benthic invertebrate populations.</p> <p>Please provide justification for the selection of $p < 0.1$ during the calculation of ANOVAs.</p>	<p>A p value of > 0.1 was used for determining significant statistical differences to be consistent with the protocols established by Environment Canada for the national EEM program (Environment Canada 2012).</p>	None.	n/a
229	Wabun Tribal Council	<p>WTC-IR#54: Fish communities, Appendix N, Section 2.4.2</p> <p>A number of fish species were selected and assessed for future impacts based on their potential to support recreational opportunities and a subsistence food base. The updated <i>Fisheries Act</i> includes protection for fish that support these commercial, recreational and Aboriginal fisheries and contribute to productivity, but they are not discussed in the impact assessment.</p> <p>Please include an assessment of future impacts on fish that support commercial, recreational and Aboriginal fisheries.</p>	<p>In the Aquatic Baseline report, the habitat requirements of forage fish is described together with a description of the existing habitat for these species in each water body assessed. In the impact assessment, the protection of forage fish is indirectly addressed through the assessment of water quality to a standard of the protection of fish and aquatic life; and the assessment of loss of habitat which incorporates habitat for both sport and forage fish.</p>	None.	n/a
230	Wabun Tribal Council	<p>WTC-IR#55: Baseline phosphorus and zinc concentrations, Appendix N, Section 3.0</p> <p>"It is possible that baseline phosphorus and zinc concentrations may be overstated due to analytical procedures that yielded higher than targeted method detection limits." (p.11)</p> <p>Low level detection is needed to properly characterize baseline conditions and set future targets. The conclusion that there will be no effects from phosphorus because current results might be overstated as a result of elevated reportable detection limits is not supportable. Phosphorus is an "aesthetics" guideline. Elevated phosphorus concentrations have the potential to reduce dissolved oxygen concentrations through increased decomposition rates and shift food webs through increased production. The fact that the guideline value is not based on toxicology does not reduce its importance in relation to aquatic communities.</p> <p>Please re-examine samples at lower detection limits, or, if samples exceed recommended holding times, collect new samples.</p>	<p>As of 2014, analytical methods were modified to ensure lower MDLs for phosphorus. The initial results indicate baseline phosphorus concentrations of less than 0.015 mg/L which is less than the PWQO of 0.020 mg/L (lakes) and 0.030 mg/L (rivers).</p>	None.	n/a

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231	Wabun Tribal Council	<p>WTC-IR#56: Magnitude levels for fish, Appendix N, Table 4.1 and Appendix N, Section 4.2</p> <p>"During construction of the mine, as many fish as possible will be collected and relocated from all habitats that will be lost due to the development of the mine. However, it will not be possible to collect and move all fish and therefore, some individuals will likely be affected during construction" (Table 4.1).</p> <p>Individual fish will be lost during development due to lost habitat but the magnitude of this impact is only deemed level 1. A more detailed analysis is needed to make this conclusion.</p> <p>Please provide a more detailed analysis of population estimates and targeted relocation numbers to support the argument that project activities will not impact fish communities or populations, and that the magnitude is not level 2.</p>	<p>The criteria for level 1 impact to commercial, recreational and Aboriginal fish was "There is no measurable effect to sport fish communities or populations". Based on experience at other sites, IAMGOLD expects the relocation of fish to be successful such that it will result in the salvage of fish of all year classes of all resident species. It is likely that thousands of fish will be moved but it is not possible to capture every fish and as a result some individual fish will be lost. However, the losses of individuals are not expected to have a measurable effect on the community or population and hence the assignment of a level 1 impact.</p>	None.	n/a
232	Wabun Tribal Council	<p>WTC-IR#57: Fish habitat description, Appendix N, Table 4.1 and Appendix N, Section 4.2</p> <p>"Blasting from the open pit may affect fish habitat and spawning in adjacent water bodies during construction and the early years of operation (Table 4.1). ... However, the area potentially affected will either be overprinted by the construction of dams or is largely profundal (deep) and provides limited spawning habitat for the resident fish within this lake."</p> <p>It is stated that the area affected by blasting is primarily profundal habitat and of limited value for spawning. Additional description of this habitat would be useful for determining its importance, not only for spawning, but also for other sensitive life processes. The rationale for blasting impacts only to profundal (vs. littoral) habitat was not provided.</p> <p>Please provide a rationale for the habitat types and additional habitat description of the areas affected by blasting and its potential importance for all sensitive fish life processes.</p>	<p>Blasting has been predicted to have effects to fish spawning at a distance of 238.5 m from the pit during construction and at 349 m during operations. These distances overlap the south eastern portion of Clam Lake (see Figure 4.1 from the Aquatic Biology TSD). The dominant species found in this lake are smallmouth bass which typically spawn within the first meter of water over and around cobble, gravel and sandy bottoms. All the other species found within Clam will typically use the first two meters for spawning substrate. Of all the species found in Clam, only smallmouth bass, burbot and johnny darter use sandy, rock substrate for spawning. All other species spawning substrate are associated with the presence of vegetation. Minimal vegetation is present within the area affected by the blasting. The habitat present is largely cobble, rock, sand and silt substrate which is abundantly present in Clam Lake. During construction, the shoreline perimeter affected by the blasting will be approximately 240 m and 892 m during operations. The predominant area affected during operations falls in water depths greater than two meters of water, therefore it is anticipated that the area affected for spawning will be minimal when taking the entire area of the lake into consideration and the habitat present.</p>	None.	n/a
233	Wabun Tribal Council	<p>WTC-IR#58: Amelioration of impacts, Appendix N, Section 4.0, pp.16, 28</p> <p>Water hardness, pH and DOC are expected to ameliorate potential future effects of copper, iron and zinc. At the minimum, these mechanisms need to be described with accompanying references, or these relationships should be quantified through future modelling scenarios.</p> <p>Please describe mechanisms for amelioration of impacts of copper, zinc and iron, with references, or quantify these relationships with modelling scenarios.</p>	<p>Relationships have been established through substantial research, between some metals and modifying factors which reduce toxicity. For example, water hardness has been documented to reduce zinc toxicity (Chapman et al., 1980, Brinkman and Woodling 2005, Minnow 2008, Environment Canada 2008) such that as water hardness increases, zinc toxicity has been observed to decrease. Similarly, copper toxicity has been well documented to be reduced with increasing concentrations of dissolved organic carbon. The reduction in toxicity is associated with the competition between copper and dissolved organic carbon for binding sites (Playle 1993) and forms the basis for the biotic ligand model. The biotic ligand model is accepted by MOECC as an appropriate method to develop a Site Specific Water Quality Objective (SSWQO). Similarly, iron solubility (e.g., bioavailability) is related to ambient pH concentrations (Morel 1983). While these relationships have been proved in various environments, they will need to be fully considered in the context of effluent characteristics and conditions within the receiving environment at the Côte Gold Project site. It is expected that if acceptable SSWQO can be developed, they will be established and approved prior to the permitting of the mine. However, the mine has committed that if SSWQO cannot be established, then further effluent treatment will be employed to ensure acceptable concentrations within the effluent plume. Thus, the EA can assess that concentrations will be acceptable (i.e., protective of aquatic life) without completing the SSWQO process.</p>	None.	n/a
234	Wabun Tribal Council	<p>WTC-IR#59: Site Specific Water Quality Objectives, Appendix N, Section 4.1</p> <p>"The opportunity for reduced toxicity in the mixed zone should be explored through the development of Site Specific Water Quality Objectives" (p.16)</p> <p>If Site Specific Water Quality Objectives (SSWQO) are proposed as a mitigation for potential project effects (mixing zone toxicity) then they must be presented in the EIS to substantiate the prediction or modify the predicted impact.</p> <p>Please develop SSWQO in the EIS as a rationale for predictions of the impacts to site water quality in the mixing zone.</p>	<p>As noted above (Comment #233), SSWQO do not need to be developed within the EA because the mine has committed that if SSWQO cannot be established, then further effluent treatment will be employed to ensure acceptable concentrations within the effluent plume. Thus, the EA can assess that concentrations will be acceptable (i.e., protective of aquatic life) without completing the SSWQO process.</p>	None.	n/a

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235	Wabun Tribal Council	<p>WTC-IR#60: Best Management Practices for erosion control, Appendix N, Section 4.2</p> <p>"It is expected that through the implementation of best management practices for erosion control and timing of the construction periods relative to life history stages of resident fish, potential effects will be largely mitigated, and no residual effects to fish communities and populations are expected (Table 4.2). Monitoring of the effectiveness of these mitigation measures will be required (see Section 5.0)." (p.19)</p> <p>It is stated that best management practices (BMPs) for erosion control will mitigate residual impacts on fish, but specific BMPs are not discussed, nor is the resilience of various fish species to the potential impacts. The effectiveness of BMPs as mitigation cannot be assessed in the absence of descriptions of their operation and use.</p> <p>Please explain what BMPs will be used for erosion control and how these will mitigate residual impacts. Discuss the resilience of fish species present to the potential impacts.</p>	<p>Best management practices are described in the mitigation section (Chapter 10) of the EA document. The EA identifies the mitigation for erosion as "Best Management Practices (BMPs) and engineering design to limit soil erosion and mobilization/transport of sediments from disturbed areas" These best management practices are described as follows; "During construction, operations and closure phases, BMPs for erosion and sediment control include: design of physically stable mine rock and tailings storage facilities, the use of earthwork methods to minimize slope length and grade, ditching, sediment ponds / traps, channel and slope armoring, use of natural vegetation buffers, vegetation of disturbed soil, and runoff controls (i.e., sediment fencing and small check dams). During post-closure, erosion and sediment control would be focused on monitoring the success of closure activities".</p>	None.	n/a
236	Wabun Tribal Council	<p>WTC-IR#61: Duration of effects, Appendix N, Section 4.2, p.19</p> <p>Impacts to fish will be pronounced in the first year of operations because watercourse realignments and constructed habitats may not be functional, but effects are expected to be short (i.e., one season). The duration of effects should be assessed in terms of impacted species and their life spans, not the lifespan of the mine, and more specific timing for the introduction of offsetting habitat should be presented.</p> <p>a) Please evaluate the duration of effects in terms of impacted species.</p> <p>b) Please provide more detail on the specific timing for introducing offsetting habitat.</p>	<p>a) The levels of duration described in Chapter 11 are somewhat related to the duration of each Project phase, however, the prediction of effects on aquatic species does consider the actual expected duration of each effect.</p> <p>b) Details on the specific timing of offsetting measures will be developed as part of the Fisheries Authorization.</p> <p>Ideal timing windows for minimizing fish and egg stranding during watercourse realignments will be considered. Timing of spawning for all fish found within the local study area indicated that the optimal window for all species will be later summer, early fall (attached Table 1). By August all species young-of-the-year should be large enough to catch and transfer. Only golden shiner spawn into August. Since their spawning window is quite large, it is not anticipated that the entire year class would be lost or that the species could not spawn in the new area they are transferred too.</p> <p>It is proposed that the transplanting of vegetation, benthic invertebrates and forage fish be carried out to expedite the establishing of compensatory habitat. Minnow Environmental (Minnow) has previously implemented this approach at another site (Agrium Kapuskasing Phosphate Operations 2006) and results were quite effective (e.g., no loss in year class of any of the fish species relocated to the newly constructed lake). In areas where aquatic vegetation was transplanted, the coverage and expansion of colonization was much larger and quicker than in areas that were not transplanted providing cover for juvenile fish and decreasing erosion from construction and wind. Transplanting activities will be sequenced to allow for the best opportunity for the successful transfer of fish from lost areas to the newly constructed channels and therefore reduce lag times. Transplanting activities will likely include the transplantation of macrophytes (aquatic plants), benthic invertebrates, and the relocation of small-bodied fish (forage fish) and of large-bodied fish. The sequence of transfers will take into account spawning and incubation periods of the dominant species found within the systems to ensure successful transfer of young-of-the-year fish. The objectives of these transplants will be to accelerate the establishment of the ecosystem and food chain within the newly constructed areas prior to the placement of the key fish species, thus reducing lag times. Therefore, it is expected that the lag time within the functioning habitat created to be minimal.</p>	None.	n/a

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237	Wabun Tribal Council	<p>WTC-IR#62: Transplanting of species, Appendix N, Table 4-2 and Appendix N, Section 4.2</p> <p>Transplanting of forage fish and benthic invertebrates is to be carried out to expedite the establishment of compensatory habitat, but no details on this activity are provided. What are the source areas? How will the transplants impact source populations? Will this activity be any faster or better than allowing for natural recolonization?</p> <p>Please provide details on the transplanting of forage fish and benthic invertebrates and how this will promote the establishment of constructed habitat.</p>	<p>It is proposed that the transplanting of vegetation, benthic invertebrates and forage fish be carried out to expedite the establishing of compensatory habitat. The source areas for these transplantations will be the areas to be lost within the same watershed. Therefore the transplant activities will not impact the source areas as they are to be lost with the construction of the mine site. Minnow has previously implemented this approach at another site and results were quite effective (e.g., no loss in year class of any of the fish species relocated to the newly constructed lake). In areas where aquatic vegetation was transplanted, the coverage and expansion of colonization was much larger and quicker than in areas that were not transplanted providing cover for juvenile fish and decreasing erosion from construction and wind. As for natural colonization of the benthic community, sedentary taxa would take much more time to colonize in the constructed areas if they were not transplanted. Forage fish will also be relocated from areas to be lost with the constructed mine site. This will promote a food base for the sport fish. Fish will be relocated within the same watershed.</p> <p>Transplanting activities will be sequenced to allow for the best opportunity for the successful transfer of fish from lost areas to the newly constructed channels. They will likely include the transplant of macrophytes (aquatic plants), benthic invertebrates, plankton, and the relocation of small-bodied fish (forage fish) and of large-bodied fish. The sequence of transfers will take into account spawning and incubation periods of the dominant species found within the systems to ensure successful transfer of young-of-the-year fish. The objectives of these transplants will be to accelerate the establishment of the ecosystem and food chain within the newly constructed areas prior to the placement of the key fish species.</p>	None.	n/a
238	Wabun Tribal Council	<p>WTC-IR#63: Mercury concentrations, Appendix N, Section 4.2</p> <p>"There are currently fish consumption advisories for mercury in lakes within the local study area, (OMOE 2013) and therefore the potential to affect the recreational value of these lakes would be minor. (p.20)</p> <p>Fish tissue monitoring for mercury should also be conducted on all lakes where water levels are going to increase as a result of watercourse realignments. "(p.26)</p> <p>Fish consumption guidelines are not static and if mercury concentrations increase in fish in these waterbodies, the guidelines will reflect the increased concentrations, that in turn limit recreational opportunities. Consumption guidelines will not protect wildlife or waterfowl. The fish tissue mercury results are not presented or discussed in the baseline report of impact assessment. In addition to completing fish tissue monitoring on all lakes where water levels are going to increase, monitoring should also occur on downstream waterbodies that will be affected by elevated mercury concentrations.</p> <p>a) Please provide more emphasis on the fish tissue mercury results by discussing them in the baseline report of impact assessment.</p> <p>b) Please add fish tissue monitoring to downstream water bodies that will be affected by elevated mercury concentrations.</p> <p>c) Please provide a full discussion on the likelihood of mercury methylation and increase, and the duration of any changes.</p>	<p>a) Additional discussion on the fish tissue mercury results at baseline has been included in the Addendum to Appendix N (Aquatic Biology TSD).</p> <p>b) Agreed. Fish tissue monitoring for mercury is a component of the proposed monitoring program.</p> <p>c) As noted in the aquatic impact assessment, effects associated with methyl mercury production due flooding are expected to be very limited as areas that will be flooded (i.e., Chester Lake and parts of the south arm of Bagsverd Lake) are currently inundated seasonally and do not represent terrestrial soils and vegetation which would contribute to methyl mercury production. The areas to be flooded which are currently terrestrial are small and will have vegetation and organic soil removed prior to the implementation of water course realignments. Fish within the watershed are currently restricted for consumption due to regionally elevated mercury levels, thus it is not likely that there will be any significant change in methyl mercury exposure.</p>	<p>Fish tissue consumption benchmarks and fish tissue concentrations relative to the benchmarks have been provided in the Addendum to Appendix N (Aquatic Biology TSD).</p> <p>Chapter 16 and Appendix Y have been updated with additional details on fish tissue monitoring.</p>	<p>Addendum to Appendix N. Chapter 16 and Appendix Y</p>

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239	Wabun Tribal Council	<p>WTC-IR#64: Effluent mixing zone, Appendix N, Section 6.0</p> <p>"Within the Neville-Mesomikenda Lake watershed, potential effects are restricted to the initial effluent mixing zone where maximum concentrations of several substances (aluminum, arsenic, calcium, cadmium, copper, iron, magnesium, total phosphorus, strontium, uranium, vanadium, zinc) are expected to exceed water quality benchmarks. Predicted concentrations of most of these substances are less than short-term CWQG or toxicity thresholds (Table 4.7b)." (p.28)</p> <p>The extent of the effluent mixing zone has not been defined or described and therefore it is difficult to assess the magnitude of effluent enrichment and extent of impacts spatially.</p> <p>Please calculate the expected extent of the mixing zone and centerline concentrations of key effluent parameters.</p>	<p>The two potential treated effluent discharge options are described in Appendix J, Section 2.7 and shown on Figure 2-4. The scenarios that were modelled to simulate surface water quality conditions resulting from treated effluent discharge to the environment were as follows:</p> <p>1) The downstream end of Bagsverd Creek – it is assumed that the lower basin of Neville Lake will be used as a mixing zone, with the downstream end of the mixing zone being the Neville Lake outflow; and</p> <p>2) The upper-middle basin of Mesomikenda Lake – it is assumed that the upper-middle basin of Mesomikenda Lake will be used as a mixing zone, with the downstream end of the mixing zone being the outflow to the upper basin of Mesomikenda Lake.</p> <p>Based on the water quality modelling of each of the potential effluent receivers, it was determined that discharge to the downstream end of Bagsverd Creek is preferred due to the lesser predicted effect on the overall mixing zone water quality. For the purposes of the EA, the extent of the mixing zone is therefore expected to be the lower basin of Neville Lake, as depicted in Figure 2-4. The extent of the mixing zone within Neville Lake (lower basin), including prediction of centerline concentrations, will be further defined using hydrodynamic mixing modelling as part of the ECA application process following the EA approval.</p>	None.	n/a
240	Wabun Tribal Council	<p>WTC-IR#65: Fish and egg stranding, Appendix N, Section 6.0</p> <p>"Some potential effects have been identified for fish, primarily during construction:</p> <ul style="list-style-type: none"> ▪ potential for elevated TSS, ▪ loss of individual fish during fish relocation from habitat that will be removed, ▪ reduced functionality of constructed fish habitat in the first year, ▪ potential for terrestrial vegetation decay and methyl mercury production in some small areas (e.g., the south arm of Bagsverd Lake) where terrestrial lands will be inundated, ▪ potential for entrainment and impingement of fish in the freshwater intake structure and ▪ effects from blasting on spawning habitat during construction and the early years of operation." (p.29) <p>A considerable amount of effort was expended to determine what fish species are resident throughout the study area. Given this information, it should be possible to calculate ideal timing windows for minimizing fish and egg stranding during watercourse realignments.</p> <p>Please provide details on optimal time periods for watercourse realignments that will minimize fish and egg stranding.</p>	<p>A detailed response on the optimal time periods for watercourse realignments that will minimize fish and egg stranding has been provided in the Addendum to Appendix N (Aquatic Biology TSD).</p>	<p>Spawning windows for resident fish relative to fish relocation plans have been added to the Addendum to Appendix N (Aquatic Biology TSD).</p>	<p>Addendum to Appendix N (Aquatic Biology TSD)</p>

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241	Wabun Tribal Council	<p>WTC-IR#66:HHRA – Methylmercury, Chapter 12, Section 12.3.2</p> <p>"As mercury is not expected to be present in process elements in appreciable quantities, exposure to this contaminant was not evaluated. It is noted, however, that the construction of the watercourse realignments will result in the flooding of former terrestrial lands. While the areas to be inundated are prone to flooding under existing conditions, it is possible that the decay of terrestrial vegetation would result in the production of methyl mercury that could be taken up by resident fish. However, the removal of vegetation prior to flooding will eliminate the potential for methyl mercury production." (p.12-6)</p> <p>It appears that the only inundated areas considered in the assessment of the potential for release of methylmercury into the environment were those in the areas of the realignments. Inundated regions of Clam Lake, Chester Lake and elsewhere do not appear to have been considered.</p> <p>The clearing of vegetation is generally acknowledged to have minimal benefits in terms of reducing peak methylmercury concentrations, on the order of 10%-15%. In order to have more meaningful effects, the soil must also be thoroughly removed, which can usually only be done at considerable cost.</p> <p>a) Please clarify that the environmental and human health risk assessment considered all pathways for potential release of methylmercury into the environment, and update the findings of the assessment, as appropriate.</p> <p>b) Please update the text to acknowledge the limitations to the proposed vegetation clearing mitigation in reducing levels of methylmercury in the environment.</p>	<p>a) The HEHRA (Appendix W) considered all relevant pathways for the potential release of methyl mercury into the environment. Additional text has been added for clarification as appropriate.</p> <p>b) The text has been will be updated to indicate that vegetation and the top layer of organic soils will be removed to limit methyl mercury production.</p>	<p>The following text has been added to Appendix W (HEHRA) Section 2.1.3.3:</p> <p>"As mercury is not expected to be present in process elements in appreciable quantities, exposure to this contaminant was not evaluated. It is noted however, that the construction of the watercourse realignments will result in limited flooding of former terrestrial lands (i.e., in the vicinity of Chester Lake and parts of the south arm of Bagsverd Lake). While the areas to be inundated are prone to flooding within the baseline condition, it is possible that the decay of terrestrial vegetation will result in the production of methyl mercury that will be taken up by resident fish. The removal of the top layer of organic soil and vegetation prior to flooding will reduce the potential for methyl mercury production and will be undertaken prior to construction. As there are currently fish consumption advisories for mercury in lakes within the study area, the potential to affect exposure to mercury is considered minor."</p>	Appendix W, Section 2.1.3.3
242	Wabun Tribal Council	<p>WTC-IR#67: Duration of impacts, Chapter 11, Section 11.4.1 and Chapter 11, Table 11-1</p> <p>The levels of the duration assessment were established in relation to the life of the Project. Duration of impacts should be assessed in relation to life stages of fish and ultimately it should be determined whether the impacts diminish the ability of fish to carry out one or more life processes.</p> <p>Please determine the levels of the duration assessment in relation to life stages of fish, and their ability to carry out one or more life processes.</p>	<p>The levels of duration described in Chapter 11 are somewhat related to the duration of each Project phase, however, the prediction of effects on aquatic species does consider the actual expected duration of each effect. Specific details in relation to life stages of fish will be developed as part of the <i>Fisheries Act</i> Authorization.</p>	None.	n/a
243	Wabun Tribal Council	<p>WTC-IR#68: Numbers of fish for relocation, Chapter 11, Table 11-3</p> <p>"Relocate fish (representative numbers of the community) to established habitats." (Table 11-3, p.11-24)</p> <p>It is difficult to determine the number of fish that will be collected because of various logistics, but at the least, targets based on mark-recapture studies and population estimates should be determined, or best efforts should be quantified.</p> <p>Please establish fish collection targets based on mark-recapture studies and population estimates.</p>	<p>A population estimate for Côté Lake is presented in Appendix N (Aquatic Biology TSD), Appendix C, Section 6.2.2. As many fish as practically achievable using best efforts will be moved during the relocation. The <i>Fisheries Act</i> authorization will take into consideration the best efforts employed to maximize fish relocation. In practice the amount of fish that are relocated is typically close to the estimated population.</p>	None.	n/a

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244	Wabun Tribal Council	<p>WTC-IR#69: Fish habitat protection, Chapter 11, Table 11-3</p> <p>"Spawning habitat within the waterbodies affected will be included in the <i>Fisheries Act</i> authorization for the site as a loss of habitat and will be addressed through the compensation plan." (Table 11-3, p.11-24)</p> <p>The <i>Fisheries Act</i> includes the protection of nursery, rearing, food supply and migration habitats, in addition to spawning habitat. These different habitats have been discussed in general terms in the baseline report, but also should be included in the compensation plan. Any of these habitats that occur in potentially impacted areas should be measured to ensure that future offsets can adequately mitigate future impacts.</p> <p>Please incorporate consideration of fish habitat used for nursery, rearing, food supply and migration into the compensation plan, in addition to spawning habitat, and measure any of these habitats that occur in potentially impacted areas.</p>	<p>All habitat within the waterbodies affected will be included in the <i>Fisheries Act</i> authorization for the Project as a loss of habitat. IAMGOLD is currently working with Fisheries and Oceans Canada (DFO) to outline the analysis of how the in-kind habitat creation measures proposed will offset the serious harm to fish.</p> <p>IAMGOLD in discussions with DFO, is now using habitat suitability indices to complete a more detailed prediction of potential effects on the commercial, recreational, and Aboriginal fisheries. This method uses all pertinent habitat suitability indices from the literature to document optimal habitat for all life stages of each of the species included in the assessment. In consultation with DFO, it was agreed that the same guild of five species used in the EIS / Draft EA Report (northern pike, yellow perch, walleye, lake whitefish and smallmouth bass) are considered representative of the commercial, recreational, and Aboriginal fisheries and supporting species within the Project area. This information is provided in the addendum to Appendix N (Aquatic Biology TSD). This additional detail does not change the results of the effects prediction presented in Chapter 9 of the Amended EIS / Final EA Report, nor does it change the impact assessment results presented in Chapter 11.</p>	None.	n/a
245	Wabun Tribal Council	<p>WTC-IR#70: Loss of habitat in Three Ducks Lake, Chapter 11, Table 11-3, p.11-24</p> <p>Loss of habitat due to construction should include Three Ducks Lake because of the proposed location of the low grade ore stockpile as presented in Figure 1.2 Has this loss of lentic habitat been factored into the habitat calculations?</p> <p>Please include Three Ducks Lake as lentic habitat affected by loss of habitat due to construction.</p>	<p>The loss of habitat in Three Duck Lakes is considered in the effects prediction on aquatic species. Table 11-3 has been amended to add Three Duck Lakes to the lentic habitat affected.</p>	Three Duck Lakes has been added to affected lentic habitat in Tables ES-3 and 11-3.	Tables ES-3 and 11-3 ("Aquatic Biology", "Loss of Aquatic Habitat")
246	Wabun Tribal Council	<p>WTC-IR#71: Identification of habitat, Appendix B, Appendix B-2, #24 and Section 1.4</p> <p>Wetlands and habitats of provincially or federally listed SAR and other sensitive areas are not identified in Section 1.4</p> <p>Please provide a description of wetlands, potential habitat of provincially and federally listed SAR, and any other sensitive areas, found within the Project area.</p>	<p>No wetlands and habitats of Provincially or Federally listed SAR and other sensitive areas have been identified in the Project area.</p>	None.	n/a
247	Wabun Tribal Council	<p>WTC-IR#72: List of Environmental Effects Indicators, Appendix B, Appendix B-2, #67 and Section 9.1.1</p> <p>Since the <i>Fisheries Act</i> provides protection for fish that support recreational, commercial and Aboriginal fisheries, these support fish species should be included in the List of Environmental Effects Indicators in Table 9-1 of Section 9.1.1. Aquatic species at risk should also be included in these indicators. It is important to consider potential effects to these species.</p> <p>Please include fish that support recreational, commercial and Aboriginal fisheries, and aquatic species at risk, in the list of environmental effects indicators and provide an assessment of potential project effects to these.</p>	<p>The EA indicators identified and used for the aquatics effects prediction encompass the gamut of Project effects on the aquatic environment. An effects prediction for the protection of forage fish is indirectly addressed through the assessment of water quality to a standard of the protection of fish and aquatic life and the assessment of loss of habitat. This incorporates and is representative of habitat for both commercial, recreational, and Aboriginal fisheries and forage fish.</p> <p>IAMGOLD in discussions with DFO, is now using habitat suitability indices to complete a more detailed prediction of potential effects on the commercial, recreational, and Aboriginal fisheries. This method uses all pertinent habitat suitability indices from the literature to document optimal habitat for all life stages of each of the species included in the assessment. In consultation with DFO, it was agreed that the same guild of five species used in the EIS / Draft EA Report (northern pike, yellow perch, walleye, lake whitefish and smallmouth bass) are considered representative of the commercial, recreational, and Aboriginal fisheries and supporting species within the Project area. This information is provided in the Addendum to Appendix N (Aquatic Biology TSD). This additional detail does not change the results of the effects prediction presented in Chapter 9 of the Amended EIS / Final EA Report, nor does it change the impact assessment results presented in Chapter 11.</p>	Additional information regarding commercial, recreational and Aboriginal fisheries is provided in the Addendum to Appendix N (Aquatic Biology TSD).	Addendum to Appendix N

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248	Wabun Tribal Council	<p>WTC-IR#73: Sampling methodology of aquatic species, Appendix B, Appendix B-2, #127 and Appendix L</p> <p>It is not clear how sampling locations were selected for basking turtle surveys (Appendix L). In addition, the low sampling effort for amphibian surveys (only one year of data at only 4 locations over 4 nights) diminishes the ability to draw robust conclusions about amphibian populations in the Project area.</p> <p>a) Please clarify how sampling locations were selected to ensure comprehensive and representative coverage of basking turtles.</p> <p>b) Indicate how the low sampling effort for amphibian surveys will be addressed or justify why it is sufficient to characterize amphibian populations in the Project area.</p>	<p>a) Sampling locations were selected based on potential for the habitat to be affected by the Project, results of the 2012 habitat assessment, results of the 2012 basking surveys and comments provided by the MNRF. Two surveys were completed in 2012 with an objective of assessing habitat potential and identifying the presence or absence of basking turtles. The first survey was completed from May 8 to 13, 2012, and the second survey was completed from June 6 to 9, 2012. During these surveys a total of 42 basking turtle surveys were completed at 32 locations. A technical memorandum was submitted to the MNRF to provide a summary of the habitat observations and basking turtle observations recorded during the 2012 surveys. The technical memorandum was discussed with the MNRF and their comments and direction were incorporated into the 2013 basking survey work plan.</p> <p>b) In Central Ontario amphibian survey #1 can be completed from April 15 to 30, survey #2 can be completed from May 15 to 30 and Survey #3 can be completed from June 15 to 30. Historic calling dates provided by the Marsh Monitoring Program indicates that all mid and late season frog species known to be in the region containing the local study area are typically calling in early June. Air temperatures recorded during the June 5 to 8 surveys ranged from 12 °C to 18°C. Based on the historic calling dates and the range of air temperatures recorded during the surveys it is anticipated that the majority of the mid and late season breeding frog species present on the site would have been recorded during the June 5 to 8 survey period. Additionally, amphibian species occurring in the region containing the study area are well documented in publically available literature and a comparison of the collected data to the list of amphibian species known to occur in the region indicated that the species observed are typical of the region. Given the objective of the amphibian survey program was to generate a species list for the study area it was not necessary to increase the survey effort. If a species is well documented to have a range that overlaps with the study area, but was not recorded during the field surveys, a conservative approach was taken and it is assumed that the species is present within the study area.</p>	None.	n/a
249	Wabun Tribal Council	<p>WTC-IR#74: Impact assessment on aquatic species at risk, Appendix B, Appendix B-2, #165 and Section 11.0, Tables 11-3 to 11-6</p> <p>There is no assessment of the impacts on aquatic species at risk (SAR), presumably because none were found in the Project area. However, their absence from surveys does not rule out the possibility that SAR occur here, as suitable habitat exists for them in the area (e.g., lake sturgeon, Blanding's turtle). The Guidelines indicate that a precautionary approach should be taken when documenting the analyses included in the EIS. An assessment of the impacts on potential aquatic SAR is thus warranted.</p> <p>Please include an evaluation of the environmental effects of the Project on potential SAR and habitat likely to occur in the Project area.</p>	<p>The purpose of baseline studies is to establish a thorough understanding of species existing in the study areas as well as the condition of their habitat. It is not common practice to predict effects on species that have not been identified in the study areas.</p> <p>However, IAMGOLD has investigated the potential for the existence of lake sturgeon in the local study area. Mesomikenda Lake would be the only water body in the local study where lake sturgeon could potentially be found. No reports have been identified confirming the presence of lake sturgeon in Mesomikenda Lake.</p> <p>Should future monitoring identify any SAR species, or should the catalogue of SAR species change to include SAR species in the study area, then IAMGOLD would adapt its management strategies, as appropriate</p>	None.	n/a
250	Wabun Tribal Council	<p>WTC-IR#75: Identification of natural heritage features, Appendix B, Appendix B-2, #177 and Appendix U17</p> <p>Appendix U17 indicates that no natural heritage features have been identified at the site, but no details are given on how natural heritage features are defined or evaluated</p> <p>Please provide an explanation of how natural heritage features are defined and evaluated within the Project Area to support the conclusion that no natural heritage features have been identified at the site.</p>	<p>Alternatives to the Project were assessed in Chapter 7 of the Amended EIS / Final EA Report in accordance with the MNRF Class EA Environmental Screening Criteria for Resource Stewardship and Facility Development Projects (see Section 7.2.2). In Table 3.1 of these criteria, natural heritage features and areas are defined as areas of natural and scientific interest, Provincially significant wetlands.</p> <p>Section 6.4.7 of the EA summarizes the assessment of significant wildlife habitat, rare vegetation communities and specialized habitat for species of conservation concern, among others, presented in detail in Appendix K (Vegetation TSD), Appendix L (Wildlife TSD) and Appendix M (Terrestrial Biology TSD). Desktop studies of existing information from various sources and literature indicated the potential for significant wildlife habitats, and other natural heritage features, to occur in the vicinity of the Project. Fieldwork did not identify or confirm any such habitats or other natural heritage features.</p> <p>It should be noted that the assessment developed in Appendix U17 is an a priori evaluation, and this methodology has been successfully used by AMEC Environment & Infrastructure (AMEC) in other recently submitted EAs.</p>	None.	n/a

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251	Wabun Tribal Council	<p>WTC-IR#76: Statistical evaluation of baseline data, Appendix B, Appendix B-2, #194 and Section 16-4</p> <p>"The monitoring design must include a statistical evaluation of the adequacy of existing baseline data to provide a benchmark against which to test for project effects, and the need for any additional preconstruction or pre-operational monitoring to establish a firmer project baseline."</p> <p>Required statistical evaluation of existing baseline data is lacking.</p> <p>Please provide statistical evaluation of the adequacy of existing baseline data to provide a benchmark, and to identify the need for additional baseline monitoring.</p>	<p>Within technical disciplines, collected baseline data is routinely statistically evaluated, as required. As an example, the use of the 95th percentile for the assessment of effects on water quality is based on a statistical analysis of existing data.</p>	None.	n/a
252	Wabun Tribal Council	<p>WTC-IR#77: Detection of effects, Appendix B, Appendix B-2, #195 and Section 16-4</p> <p>"...include a schedule indicating the frequency and duration of effects monitoring. This schedule is to be developed after an evaluation of the length of time needed to detect effects given estimated baseline variability, likely magnitude of environmental effect and desired level of statistical confidence in the results"</p> <p>The monitoring schedule does not indicate how the frequency and duration of effects monitoring reflects an evaluation of the length of time needed to detect effects, given estimated baseline variability, likely magnitude of environmental effects, and desired level of statistical confidence in results.</p> <p>Please revise the monitoring schedule to incorporate length of time needed to detect effects, based on required variables.</p>	<p>The monitoring tables, presented in Chapter 16, indicate the time and frequency of proposed monitoring based on when the potential effects are predicted. These frequencies and timeframes have been selected by the EA team such that they would allow a suitable length of time to detect effects on the respective parameters. The monitoring program includes the principle of adaptive management (i.e., programs may be revised and/or adjusted based on results or field experience).</p>	None.	n/a
253	Wabun Tribal Council	<p>WTC-IR#78: Degree of scientific uncertainty, Appendix B, Appendix B-2, #212 and Section 11-2</p> <p>No indication is given of what degree of uncertainty exists related to the data and methods that may affect the determination of the significance of adverse environmental effects.</p> <p>Please discuss the degree of uncertainty relating to the data and methods that may affect interpretation of significance of effects.</p>	<p>The EA is a planning exercise. As such, a certain level of uncertainty in data and predictions is inherent. Uncertainty is discussed within the report, as applicable. To mitigate this uncertainty, data interpretation and effects predictions throughout the EA follow a precautionary approach. Selection of levels of magnitudes are made in a very conservative manner, such that it is expected that actual effects should be less than the ones predicted in the EA.</p>	None.	n/a

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254	Wabun Tribal Council	<p>WTC-IR#79: Upland Breeding Bird Survey Methods, Appendix L, Section 4.4, Appendix L, Figure 7 and Appendix L, Figure 8</p> <p>Inventory of upland breeding birds was undertaken for the local and regional study area using the point count method where all birds heard or seen in a 50 m radius were recorded. The breeding bird methodology used to assess the impact of the project footprint and 2 km buffer is scientifically inappropriate for fieldwork aimed at inventorying species present, especially Species at Risk.</p> <p>The point count method selected is used for long-term monitoring and population estimates as part of an aggregated database that uses hundreds of point counts together. For example, the breeding survey conducted for an individual station in a forested area likely samples an area of approximately 10 ha, compared to the project foot print which covers 1,700 ha.</p> <p>Though it is acknowledged that some 30 point count stations were undertaken within the local study area (sampling 300 ha or 17% of the foot print) the appropriate survey methodology for an area that is to be cleared of vegetation would have been a roving survey such that most areas of the property were approached to within 100 to 200 m. This would have sampled over 60% the site and likely revealed over 90% of the species present. It is most probable that the roving survey would have identified the presence of SAR, like Canada Warbler, to occur in with the areas or the Project footprint.</p> <p>Marsh birds were surveyed using the Marsh Bird Survey Monitoring Protocol, which included play back of calls. While this is an effective survey method for secretive species, only 7 sites were surveyed for local study area. This is insufficient sampling effort for such a large area.</p> <p>Waterbird (ducks, loons, mergansers) were surveyed by 17 point count locations and by eight 500 m long canoe transects. These survey methods are less than ideal for establishing waterbird species and numbers. A more appropriate survey method, which is used by the Canadian Wildlife Service for waterfowl surveys, is low flight surveys with fix-winged aircraft or helicopter.</p> <p>Based on the survey methods used to assess the avian community in the Local Study Area, it is our opinion that species occurrence and distribution have been under documented for the study.</p> <p>Please clarify how the Canadian Wildlife Service and/or the MNR were consulted to determine the most appropriate survey methods and level of effort required to provide the data base for the assessment of potential impacts to the avian communities for the three project areas, project foot print, Local Study Area and Regional Study Area.</p>	<p>The point count methodology that was selected for this Project is consistent with other recently completed effects assessments and direction provided in the document titled "Mining Project Baseline Desktop Assessment and Survey Requirements" (Environment Canada 2014). Upland breeding bird surveys were completed to describe species occurrence, relative abundance, and habitat use of songbirds and other bird species that nest in terrestrial / riparian habitat. A total of 75 point count surveys and acoustic monitoring surveys were completed at different locations within the local study area and were pre-selected to be representative of the proportion of land cover types identified in the regional study area. Results of the breeding bird surveys were supplemented with relevant existing data such as the Ontario Breeding bird Atlas (Cadman et al, 2007) and reports providing summaries of surveys previously completed in the study area.</p> <p>Marsh bird surveys are habitat based and were completed to identify the presence / absence of focal species (i.e., Virginia rail [<i>Rallus limicola</i>], sora [<i>Porzana Carolina</i>], least bittern [<i>Ixobrychus exilis</i>], common moorhen [<i>Gallinula chloropus</i>], American coot [<i>Fulica Americana</i>] and pied-billed grebe [<i>Podilymbus podiceps</i>]). Marsh bird surveys were only completed at locations where the habitat was assessed as having potential to support the focal species. As a result the marsh bird surveys are considered representative of the suitable habitat that is available in the local study area. Non-focal marsh bird species were also recorded during the waterbird surveys, basking turtle surveys and breeding bird point count surveys which provided for greater coverage of the study area.</p> <p>The MNRF was contacted prior to initiating baseline surveys in 2012 to identify SAR with potential to occur on the site and discuss survey protocols. The MNRF was also contacted prior to initiating the 2013 baseline surveys to discuss the 2012 baseline survey results and identify additional survey effort that was required in 2013. The protocols selected for the Project were consistent with comments provided by the MNRF and with guidance provided by Environment Canada on similar projects that Golder Associates (Golder) has recently completed. Statistical analysis of the collected data was used to determine if the appropriate level of effort was expended to assess the effects of the Project on upland breeding birds. Although the species accumulation curve for the regional study area did not reach an asymptote the results from the species accumulation curve indicated that sampling was adequate to assess the effects of the Project on upland breeding birds.</p>	None.	n/a
255	Wabun Tribal Council	<p>WTC-IR#80: Assessment of Alternatives for Project Components, Chapter 7, Section 7.3.9 Watercourse Realignment</p> <p>In this section it is suggested that minimizing impacts to water flow and fish habitat would also address minimizing disturbance to existing terrestrial flora and fauna. A direct correlation between disturbance to fish habitat and terrestrial flora and fauna has not been established and it seems that the alternatives assessment did not directly consider the realignment impacts on local fauna, particularly larger mammals such as moose, deer and bear.</p> <p>Please provide alternatives assessment for the watercourse with respect to impacts to the terrestrial fauna.</p>	<p>As discussed in the EA, IAMGOLD plans to implement a natural channel design approach to the watercourse realignments. This approach will include natural design components intended to offset impacts to fish habitat. Additionally these features will provide suitable habitat for larger mammals. Therefore no additional alternatives assessment with respect to terrestrial fauna is warranted.</p>	None.	n/a

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256	Wabun Tribal Council	<p>WTC-IR#81: Assessment of Alternatives for Project Components, Chapter 7, Section 7.3.15 and Appendix U9</p> <p>The assessment considered two alternatives, the Shining Tree Alignment and the Cross-Country Alignment. Elements of the Shining Tree Alignment will utilise existing transmission line corridors, while the Cross-Country Alignment will include a new greenfield corridor for 68 km. For the detailed assessment of these two alternatives we are directed to Appendix U9. The analysis for the effects on Terrestrial Species and Habitat is general, not specific to groups of wildlife, and uses wording such as "some" and "likely". As the Cross-Country Alternative will remove existing habitat and result in greater fragmentation of the existing habitat, more detailed assessment of the impacts of this alternative should have been provided.</p> <p>Please provide a discussion on the alternatives assessment with respect to the weighting of the impact of habitat removal and fragmentation for the two transmission line alignment alternatives.</p>	<p>It is acknowledged that the Cross-Country alignment results in fragmentation effects. However, the effects predictions found no significant impacts from the development of this alignment on wildlife. As the Cross-Country alignment is significantly shorter it will result in substantially less vegetation required to be cleared compared to the alternative Shining Tree alignment. Also, further widening of the Shining Tree alignment in addition to the existing transmission line corridor would further expose wildlife to predators and widen the fragmentation along this corridor.</p>	None.	n/a
257	Wabun Tribal Council	<p>WTC-IR#82: Assessment of Alternatives for Project Components - Cross-Country Alignment, Chapter 7, Section 7.3.15.2</p> <p>"This proposed route has been sited to facilitate access for maintenance requirements, while locating it in remote areas to minimize potential effects to the environment and any nearby residents. ...</p> <p>Potential physical and biological environment effects would occur during the construction phase. This alternative would disturb more wildlife habitat, but potential effects to the biological environment are largely expected to be similar and, in some cases, less than the Shining Tree TLA alternative due to its shorter length." (p.7-37)</p> <p>The analysis does not provide detail to support the statement that locating the Cross-Country Alignment in undisturbed remote areas will minimize potential effects on the environment, specifically the terrestrial environment.</p> <p>The effect of the removal of undisturbed habitat for the Cross-Country Alignment is not limited to the construction phase of the Project. The edge effect of the new green field corridor on interior forest nesting birds will continue throughout the operations phase and closure phase. In addition, the impacts of new access for hunting will also not be limited to the construction phase.</p> <p>The analysis does not provide sufficient detail to support the claim that the Cross-Country Alignment may in some cases have less impact.</p> <p>Please provide a more detailed analysis of the effects of the two power supply alignments on the terrestrial environment.</p>	<p>As described in the response to Comment #256 less habitat would have to be removed for the Cross-Country alignment. The potential for habitat fragmentation and edge effect associated with this alignment is acknowledged. In summary neither alignment is predicted to result in significant impacts on wildlife species. It should also be acknowledged that fragmentation and access already exists in the area that the Cross-Country route would be developed in. It should also be noted that, based on the field investigation carried out along both alignment routes, the potential for effects on avian SAR is considered higher along the Shining Tree alignment.</p> <p>The decision to prefer the Cross-Country alignment is not only based on the effects on wildlife, but considers many other factors, as detailed in Appendix U9 (Transmission Line Alignment Alternatives Assessment). All the criteria and indicators used in the assessment combined have led to the decision that the Cross-Country alignment is the preferred alternative.</p>	None.	n/a

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258	Wabun Tribal Council	<p>WTC-IR#83: Study Areas For Assessment of Project Effects on the Terrestrial Environment, Chapter 9, Section 9.1.2.2 Local Study Area</p> <p>The local study area for the assessment of potential effects related to air quality, noise and vibration is identified as the area where most of the noise and vibration effects of the Project are expected to occur. Based on this, the local study area is defined as an area that extends approximately 5 km from the main Project noise sources. For terrestrial biology, the local study area encompasses a 2 km buffer around the Project footprint and extends to the southwest to include Chester Lake.</p> <p>As discussed in the EIS, noise can impact on the use of an area by mammals, particularly larger mammals such as moose, bear, wolf, and birds, particularly birds of prey, marsh birds and waterfowl. Given that noise impacts to the terrestrial environment are identified as a project effect, it would seem that the local study area for the terrestrial environment should encompass the same area as the air, noise and vibration study area. It is for the transmission line alignment, a 1 km buffer on either side the line.</p> <p>Please provide a justification as to why the Terrestrial Environmental study area is not 5 km from the main Project noise sources, at least for specific animal groups.</p>	<p>The justification for the extent of each study area is provided in Section 9.1.2 of the Amended EIS / Final EA Report. The selection of the study area does not limit the scope of the prediction of effects. If the analysis were to show that certain wildlife species are affected by noise within a 5 km radius, then this effect would be considered in the impact assessment. Table 2-3 in Appendix L (Wildlife TSD) includes noise effects on wildlife that are considered in the analysis. Therefore these effects are carried forward to the Amended EIS / Final EA Report and Chapter 11 assesses these impacts. Specifically Tables 11-3 and 11-4 look at effects on Ungulates and Furbearers, including noise (i.e., 'general disturbance') and it is concluded that these effects potentially extend into the regional study area.</p>	None.	n/a

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259	Wabun Tribal Council	<p>WTC-IR#84: Terrestrial and Traditional Land Use Assessment Study Areas, Chapter 9, Section 9.1.2.3 and Chapter 14, Section 14.1</p> <p>"Terrestrial Biology for the Site</p> <p>The terrestrial biology regional study area is defined as a 30 km buffer from the boundary of the local study area (see Figure 9-6). This area is large enough to contain all or most individuals that comprise the seasonal and annual populations of American marten, beaver, upland breeding birds, waterbirds and raptors that inhabit the area. The regional study area is expected to be large enough to contain most of the plant populations and communities that may be influenced by the Project and other developments, and to provide confident and ecologically relevant effects predictions on vegetation. At this scale, changes to vegetation and associated wildlife habitat from human development can be also used to predict effects to the abundance and distribution of wildlife populations.</p> <p>Terrestrial Biology for the Transmission Line</p> <p>The transmission line terrestrial biology regional study area considered during baseline studies and for predicting Project effects for the transmission line alignment include the area within 2 km from the centerline of the transmission line alignment (see Figure 9-7). (p.9-10)</p> <p>Traditional Knowledge and Land Use</p> <p>The traditional knowledge and land use regional study area is defined by potential for effects of the Project on site-specific and nearby traditional land and resource uses such as use or knowledge of culturally important sites. Similar to land use, depending on the type of land or resource use, the study areas for terrestrial or aquatic biology disciplines were used (see Figures 9-6 to 9-8). (p.9-11)</p> <p>[Cumulative Effects]</p> <p>The spatial boundaries considered for predicting cumulative effects include the following:</p> <ul style="list-style-type: none"> ▪ biological local study area: as per the baseline studies, areas within 1 km from the centerline of each side of the proposed transmission line alignment and areas within 2 km from proposed Project facilities (see Figure 14-1); ▪ biological regional study area: areas within 2 km from the centerline of each side of the proposed transmission line alignment and within 32 km from proposed Project site facilities (see Figure 14-1); and ▪ the general area between Timmins and Sudbury within close proximity to the Project: it is believed that the municipalities of Timmins and Sudbury may experience socioeconomic cumulative effects, and the cumulative effects analysis may extend to projects located beyond the physical boundaries of the biological regional study area." <p>A biological basis is provided for the selection of the terrestrial biology regional study area. However, a similar justification is not provided for the terrestrial biology regional study area for the transmission line.</p> <p>With respect to traditional knowledge and land use, while there is some biological basis for basing this regional study area on the terrestrial biology study area, no cultural basis is provided. In general, the regional study area for assessment of effects on traditional land use should encompass the traditional land use activities as these are carried out across the territory (or, at minimum across the territory used by the affected land users) in order to place the significance of the environmental effects in the appropriate context. A territory wide assessment area is also relevant to the assessment of cumulative environmental effects.</p> <p>Please provide a justification for the selected regional study areas for the terrestrial and traditional land use assessments.</p>	<p>The justification for the extent of each study area is provided in Section 9.1.2 of the Amended EIS / Final EA Report. The selection of the study area does not limit the scope of the prediction of effects. This is supported by the fact that many effects on terrestrial species along the transmission line are considered to 'extend into the regional study area' (see Table 11-3, Chapter 11).</p> <p>The traditional study area was provided to IAMGOLD by the First Nations in a study that was developed by a consultant selected by the Wabun Tribal Council. IAMGOLD provided Wabun Tribal Council's selected consultant with a list of criteria for completing the study. This included a request for a rationale for the selected study area to ensure transparency in the final TK / TLU study. No rationale was provided to IAMGOLD for the selected study area. Therefore it was and is IAMGOLD's understanding that this study area is accepted by Wabun Tribal Council is reflective of the First Nations' land use.</p>	None.	n/a
260	—	This comment number has not been assigned.	—	—	—

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261	Wabun Tribal Council	<p>WTC-IR#85: Effects On Wetlands, Chapter 9, Section 9.7.2.1 Construction Phase – Wetlands</p> <p>"The shorelines around Chester Lake and the south arm of Bagsverd Lake are expected to increase due to the establishment of the watercourse realignments, inundating the adjacent communities. Consequently, a small area of wetland is expected to become lake habitat (i.e., 45 ha; 0.3% of existing wetland habitat)." (p.9-34)</p> <p>Wetlands associated with the shorelines of lakes often provide critical or unique habitat for fauna. Therefore the loss of 45 ha of this habitat in the local study area may have more of an effect than just the physical loss of wetland area.</p> <p>Please provide additional assessment of potential impacts of the loss of lake shore wetlands for terrestrial fauna.</p>	<p>In the waterbird analysis, potential breeding habitat was considered to be wetlands, treed fen within 200 m of wetlands and water bodies, and shorelines of large lakes (100 m buffer). There was predicted to be a 0.7% (208 ha) loss of potential waterbird breeding habitat from the 2012 Baseline case to the Application case. When the 43 hectare loss of wetland habitat is accounted for, there is predicted to be 251 hectare loss of potential waterbird breeding habitat due to the Project, or 0.8% change from the baseline to the Project. The loss of habitat may result in the displacement or removal of a few individuals; however, effects are not anticipated to be measurable at the population level.</p>	None.	n/a
262	Wabun Tribal Council	<p>WTC-IR#86: Project Effects on Moose, Chapter 9, Section 9.7.2.1 Construction Phase – Ungulates: Moose and Appendix L Attachment 1 – 2013 Terrestrial Baseline Study, including Figure 14 Significant Natural Features in Regional Study Area</p> <p>"However, the local changes in habitat quantity and quality from the Project are anticipated to have no measurable effect on the abundance and distribution of the moose population." (p.9-35)</p> <p>Chapter 9 and Appendix L provide various discussions on moose. However, an assessment of numbers of individuals occurring in the local study area, or numbers/density in the regional study area is not provided. Knowing the number of moose or moose carrying capacity of the habitat that may be impacted within 5 km of the Project site would provide informative information as to potential local impacts. It is noted that carrying capacity assessment for moose habitats within the two transmission line alternatives was provided in the AMEC study (Appendix M, Figures 5,6,7). Why is this level of information not provided in the Wildlife TSD – Appendix L? There are a number of occasions where the statement is made is that "the moose population is increasing in Ontario". What is the population status in the regional study area? With regard to the above noted quotation, that changes to habitat quantity and quality will not have a measureable effect, Figure 14 shows the distribution of moose aquatic feeding habitat occurring in the local and regional study areas, and it would seem that the local study area supports the highest concentration of this very important summer habitat. Has the loss of these feeding areas within the local study area been appropriately addressed? Are there seasonal movements to these aquatic feeding areas in the summer?</p> <p>a) Please provide estimates on moose population numbers/carrying capacity of the study areas.</p> <p>b) Please provide a more detailed assessment of the distribution, importance and impact of the loss of /loss of access to moose aquatic feeding areas in the local study area.</p>	<p>An accurate and unbiased estimate of the number of individuals in the local and regional study areas is not possible with the type and amount of data that are available for the study areas, nor is this essential for this EA, as outlined below. Moose can travel long distances and have high seasonal rates of movement. As such, a few aerial or ground surveys in the local and regional study areas may miss individuals that use these study areas because individuals may be in other parts of their home ranges that are outside the study areas. The determination of the number of individuals and home ranges that overlap the study areas would require using methods that can determine home range size and individual movement patterns (e.g., satellite collars). Although an estimate of the number of moose in the local and regional study areas would support the analysis it will not change the impact classification or the confidence in the effects predictions.</p> <p>The number of moose in the Spanish Forest that is presented in the Spanish Forest Management Plan was estimated from aerial surveys in four adjacent wildlife management units and was 0.18 individuals/km² (MNR and Domtar 2010). The Spanish Forest is estimated to contain 2% of the total moose population in Ontario (MNR and Domtar 2010). Moose density in the Spanish Forest is not uniform, and densities are lower in the northwest portion of the forest than in the southeast; this distribution was similar over time (i.e., from 1975 to 1979 and from 1990 to 1995; MNR and Domtar 2010). The Project is located in the northwest portion of the Spanish Forest. Although the carrying capacity for moose in the vicinity of the Project, as determined in 2006, was some of the highest estimated for the Spanish Forest, there were no areas of unusually high concentrations of moose identified in the Spanish Forest (MNR and Domtar 2010). The Project may displace a few individuals in the population, but changes to the carrying capacity of the environment near the Project are not anticipated to be measurable at the population level.</p> <p>There are 3,891 moose aquatic feeding areas in the Spanish Forest (MNR and Domtar 2010). There are 14 moose aquatic feeding areas in the local study area, which is 0.4% of the total moose aquatic feeding areas in the Spanish Forest. There are an additional 35 moose aquatic feeding areas in the regional study area. Moose are a highly mobile species (Hoffman et al. 2006), especially in the summer (Vander Wal and Rodgers 2009) when aquatic feeding areas are the most important. As such, moose that use aquatic feeding areas in the local study area are anticipated to be able to use other aquatic feeding areas in the regional study area. Although the Project will remove moose aquatic feeding areas, it is unlikely that the moose population will be negatively affected because recruitment and survival rates may remain similar to current levels (Bohm et al. 2013). Moose can use many different habitat types and consume many different types of forage (Stewart et al. 2010).</p> <p>In summary, the Project is expected to affect some moose individuals in the population, however, effects are not anticipated to be noticeable at the population level.</p>	None.	n/a

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263	Wabun Tribal Council	<p>WTC-IR#87: Project Effects on Furbearers: Black Bear, Eastern Wolf, American Marten, and Beaver, Chapter 9, Section 9.7.2.1 Construction Phase - Furbearers and Appendix L</p> <p>As with Moose, Chapter 9 and Appendix L provide various discussions on Furbearers. However an assessment of numbers of individuals of each species occurring in the local study area, or numbers/density in the regional study area are not provided. An important information source of abundance could be gained from a review of data from active trap lines in the area, but this data source does not seem to have been acquired/reviewed. Knowing the numbers, even estimates that may be impacted within 5 km of the Project site would provide informative data to allow for the assessment of potential local impacts.</p> <p>Please provide population estimates for furbearers and additional assessment of effects on population numbers at the local study area level.</p>	<p>Trapping data for the local and regional study areas was requested from the MNRF but IAMGOLD did not receive this information. As such, estimates of the potential number of furbearers in the local study area and regional study area could not be provided. Although an estimate of the number of furbearers in the study areas would provide support for the analysis, it would not change the impact assessment and confidence in the effects predictions. One beaver lodge was observed in the regional study area during field surveys in 2012 and 2013. The low abundance of beaver observed near the Project during baseline surveys is likely due to natural limited availability of quality habitat in the local study area and regional study area. The regional study area was predicted to contain 13% suitable beaver habitat under the reference condition. Although there was predicted to be a high amount of suitable marten habitat in the regional study area (88% under the reference condition and 77% under the baseline condition) there were only five marten tracks observed during winter track count surveys in 2013. The discrepancy between the predicted amount of suitable habitat and the relative activity level of marten in the regional study area may be because marten habitat is influenced by habitat characteristics that cannot be determined from the ecological land classification (e.g., amount of downed logs, percent canopy closure, stand age [Bowman and Robitaille 2005]). The Project is anticipated to affect a small number of beaver and marten individuals that inhabit or use the local study area. The effect on a few individual is not anticipated to have a measurable influence on the population of marten and beaver in the region.</p>	None.	n/a
264	Wabun Tribal Council	<p>WTC-IR#88: Terrestrial Biology for the Transmission Line, Section 9.8.2.1 Construction Phase - Ungulates (Moose)</p> <p>"In a local context, the removal of this habitat is notable but no population level effects are expected for Moose within the regional study area." (p.44)</p> <p>Effects on local population numbers may not be significant at a larger landscape level. However, as a harvestable resource, declines in local population numbers could be a significant effect. It is not clear what "notable" means in this statement.</p> <p>Please clarify potential "notable" effects on the local moose population.</p>	<p>From a habitat perspective the distribution and abundance of these habitats are common throughout the local and regional study areas and Moose will be able to use these features during the life of the Project. The Project is not anticipated to significantly affect the availability of suitable habitat for moose and in some circumstances may enhance habitat quality through the provision of early successional or browse species. However increases in predation / hunting rates on local moose may occur under the right-of-way creation and associated access road network as accessibility by humans and predators will be facilitated. The impact assessment in Chapter 11 concludes that with the mitigation included in Chapter 10 there will be no measurable residual effect to population abundance and distribution, therefore making this a not significant impact.</p> <p>The extent to which these potential increases in harvest would affect moose at the local or population level depends on the rate of change, the timing of change (i.e., in calving season versus the rutting or over-wintering period) and/or the length of time the new right-of-way would be accessible. At least one study focusing on moose use of transmission line found that increases in mortality due to the use of right-of-ways were not significant at the population level (Richard and Doucet, 1999). Therefore reductions in the density of moose through increased predation of hunting rates may occur at a local scale along the right-of-way depending on several factors outlined above but it is not anticipated that these effects would occur at the population level. These effects would occur during the life of the Project and are reversible during closure of the Project when the expanded portion of the right-of-way is revegetated to support forest communities again.</p>	None.	n/a
265	Wabun Tribal Council	<p>WTC-IR#89: Terrestrial Biology for the Transmission Line, Chapter 9, Section 9.8.2.1 Construction Phase - Species at Risk</p> <p>"Development of the Cross-Country transmission line alignment (TLA) footprint would result in the removal of 549.2 ha of vegetated land including 232.9 ha of deciduous mixed forest, 170.3 ha of coniferous forest and 146 ha of coniferous swamp." (p.9-43)</p> <p>In discussions on the effects to various SAR, it is acknowledge that suitable habitat for SAR is present along the TLA footprint, but that the habitat loss will not have an effect at the regional level. For a number of these species, the ESA regulations only recognize protection of general habitat, and potential habitat is regulated in areas where the species are known to occur. How does the project address adverse effects to habitat with respect to the ESA?</p> <p>Please clarify how ESA regulations will be implemented to address adverse effects.</p>	<p>Field studies along the two potential transmission line alignments did not record species listed as Threatened or Endangered under the Ontario <i>Endangered Species Act</i>.</p> <p>Similarly, the effects assessment in Section 11 of the Amended EIS / Final EA Report has determined that Sections 9 and 10 of the <i>Endangered Species Act</i> will not be contravened, as no harm to SAR will occur and no habitat loss of protected species will result from Project activities.</p> <p>Detailed mitigation measures are presented in the EA (see Chapter 10) and a monitoring plan (see Chapter 16) will be developed in cooperation with the MNRF and Environment Canada to address potential instances where protected species are encountered within the Project footprint. Resulting actions would thus fulfill protective requirements satisfying both Provincial and Federal regulations.</p> <p>Detailed mitigation measures and a detailed monitoring plan will be outlined in a mitigation / management plan as committed in Appendix Y (EA Commitments Table).</p>	None.	n/a

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266	Wabun Tribal Council	<p>WTC-IR#90: Mitigation Measures – Terrestrial Biology, Chapter 10, Table 10-2: Mitigation Measures – Biological Environment, Terrestrial Biology</p> <p>In general, mitigation measures that are identified for the terrestrial environment are very general in nature and limited. Specific mitigation measures for the various project elements are lacking. For example, rather than simply stating vegetation buffers be maintained along creeks, clarify that 30 m vegetation buffers will be maintained along cold water systems and 15 m buffers along warm water systems.</p> <p>Please provide detailed mitigation measures specific to the effects on the terrestrial environment intended to be mitigated.</p>	<p>With the inclusion of the mitigation measures described in Chapter 10 of the EA, it is concluded that no measurable residual effects to population abundance and distribution are anticipated. Therefore with the exception of the mitigation / management plans below, no additional mitigation is warranted to prevent significant impacts. However, as required, detailed mitigation measures specific to the effects on the terrestrial environment will be developed in cooperation with both Provincial and Federal regulators, as part of the permitting process. Once developed, these mitigations will meet Provincial and Federal requirements.</p> <p>These mitigation measures will be outlined in a mitigation/management plan as committed in Appendix Y (EA Commitments Table).</p>	None.	n/a
267	Wabun Tribal Council	<p>WTC-IR#91: Mitigation Measures – Terrestrial Biology, Chapter 10, Table 10-2</p> <p>"Mitigation Measures</p> <p>Utilize existing infrastructure for access and minimize construction of new roads and other corridors wherever alternatives exist." (p.10-27)</p> <p>It is agreed that limiting loss of habitat is a primary mitigation measure. However, this mitigation measure appears to have not been appropriately weighted in the comparison of transmission line alignment alternatives, considering that the Cross Country alignment requiring a new corridor was selected as the preferred alternative.</p> <p>Please provide additional rationale for the assessment of the transmission line alignments in relation to effects on the terrestrial environment and on use of existing infrastructure.</p>	<p>The referenced mitigation measure primarily addressed effect mitigation at the Project site. It should be noted that less vegetation will need to be removed for the Cross-Country alignment compared to the Shining Tree alignment. This and other effects on terrestrial vegetation and wildlife are analyzed and considered in Appendix U9.</p>	None.	n/a
268	Wabun Tribal Council	<p>WTC-IR#92: Mitigation Measures – Terrestrial Biology, Chapter 10, Table 10-2</p> <p>"Mitigation Measures</p> <p>Signs warning drivers of the possibility of wildlife encounters will be posted in areas of high wildlife activity." (p.10-27)</p> <p>Are locations of high wildlife activity known? There is no discussion or mapping of high wildlife activity areas in Chapter 6 or Appendix L.</p> <p>Please more detail regarding high wildlife activity areas.</p>	<p>Provincial highways already include signage identifying areas of high wildlife activity. On-site traffic impacts to wildlife will be mitigated through strict enforcement of site speed limits. Ongoing monitoring of wildlife interactions and daily observations at the Project site will be used to identify wildlife activity areas along roadways and right-of-way. Activity areas will be identified and mitigated through the use of signage. Effectiveness of this mitigation strategy will be evaluated and improved through an adaptive management approach via the monitoring program.</p>	None.	n/a

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269	Wabun Tribal Council	<p>WTC-IR#93: Impact Assessment – Terrestrial Biology, Chapter 11, Table 11-3 and Chapter 11, Table 11-4</p> <p>"Magnitude</p> <p>Level 1 – There is no measurable residual effect to population abundance and distribution" (p.11-25 and p.11-45)</p> <p>For the assessment of impact to ungulates (Moose) and furbearers (Wolves, Bears, Marten) due to the loss of habitat or noise disturbance, the assessment of effect is based on changes to population and distribution. As noted previously, data regarding population numbers or density of these wildlife species are not provided. Therefore, how was the assessment of the magnitude of the effect based on population changes undertaken for the various study areas?</p> <p>Please provide more detail regarding impact assessment based on changes in populations of wildlife species for local and regional study areas.</p>	<p>The number of moose in the Spanish Forest that is presented in the Spanish Forest Management Plan was estimated from aerial surveys in four adjacent wildlife management units and was 0.18 individuals/km² (MNR and Domtar 2010). The Spanish Forest is estimated to contain 2% of the total moose population in Ontario (MNR and Domtar 2010). Moose density in the Spanish Forest is not uniform, and densities are lower in the northwest portion of the forest than in the southeast; this distribution was similar over time (i.e., from 1975 to 1979 and from 1990 to 1995; MNR and Domtar 2010). The Project is located in the northwest portion of the Spanish Forest. Although the carrying capacity for moose in the vicinity of the Project, as determined in 2006, was some of the highest estimated for the Spanish Forest, there were no areas of unusually high concentrations of moose identified in the Spanish Forest (MNR and Domtar 2010). Although an estimate of the number of moose in the local and regional study areas would support the analysis it would not change the impact classification or the confidence in the effects predictions. Conservative assumptions were used in the impact assessment so that effects on wildlife from the Project would not be underestimated. The local study area is approximately 32% the size of the regional study area and so the majority (78%) of the moose in the regional study area are not likely to use the local study area and should not be directly affected by the Project. The Project may displace a few individuals in the population, but changes to the carrying capacity of the environment from the Project are not anticipated to be measurable at the population level.</p> <p>The density of black bears in the Spanish Forest was estimated to be 0.2 to 0.4 bears/km² (MNR and Domtar 2010). The regional study area was calculated to contain approximately 78% and 73% suitable black bear habitat under the reference and baseline conditions, respectively. The amount of preferred black bear habitat, as defined in the Spanish Forest Management Plan, will decline over time but is expected to always remain within acceptable levels in the Spanish Forest (MNR and Domtar 2010). The Project may change the abundance and distribution of black bears that use the local study area; however, the majority of the bear population in the regional study area is not expected to be directly affected by the Project. As such, changes to black bear abundance and distribution are not anticipated to be measurable at the population level.</p> <p>Moose, bears, and wolves can travel long distances and have high seasonal rates of movement. Therefore, a few aerial or ground surveys in the local study area and regional study area may miss individuals that use these study areas because individuals may be in other parts of their home ranges that are outside the study areas. The determination of the number of individuals and home ranges that overlap the study areas would require using methods that can determine home range size and individual movement patterns (e.g., satellite collars). An estimate of the number of ungulates in the local study area and regional study area would support the assessment, but estimates of the number of individuals in the local study area and regional study area are not likely to change the impact classification or the confidence in the effects predictions.</p> <p>Trapping data for the local and regional study areas was requested from the MNRF but IAMGOLD did not receive this information. As such, estimates of the potential number of furbearers in the local study area and regional study area could not be provided. Although an estimate of the number of furbearers in the study areas would provide support for the analysis, it would not change the impact assessment and confidence in the effects predictions. One beaver lodge was observed in the regional study area during field surveys in 2012 and 2013.</p> <p>Although information on ungulate and furbearer populations in the regional study area is not available, changes to measurement indicators (e.g., survival and reproduction, habitat amount and fragmentation, sensory disturbance) and scientific literature on response of wildlife to human disturbance and information on species life history characteristics are used to estimate effects on wildlife populations. Changes to measurement indicators from the Project are predicted to small (0.4% to 0.6% of potential suitable habitats for moose, black bear, marten, beaver, and eastern wolf). Additionally, these ungulate and furbearer species have life history characteristics (e.g., high reproductive capability, dispersal ability) that provide them with adaptive capability and resilience to absorb changes from human disturbance. Using the information provided above, effects from the Project are anticipated to have no measurable effect on the abundance and distribution of the ungulate and furbearer populations.</p>	None.	n/a

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270	Wabun Tribal Council	<p>WTC-IR#94: Ecological Risk Assessment – Terrestrial Biology, Chapter 12, Section 12. 4 Ecological Risk Assessment and Appendix W, Section 3.5 Ecological Heath Risk Assessment Uncertainties</p> <p>When conducting an Ecological Health Risk Assessment that includes a number of chemicals of concern, consideration of potential additive or cumulative effects of exposure to multiple chemicals of concern is required as part of the uncertainty assessment.</p> <p>Provide additive/cumulative effects assessment for the chemicals of concern.</p>	<p>For both human and ecological receptors, additive and synergistic effects resulting from exposure to multiple chemicals is a factor that requires consideration. For compounds that target a specific organ or operate via a common mechanism of action, additivity is often assumed to address the potential for cumulative effects. Addressing cumulative effects from multiple stressors that operate on multiple organ systems is much more difficult and as pointed out is typically dealt with in the uncertainty section where it is acknowledged that owing to simultaneous exposure to multiple chemicals that may operate synergistically, there is the possibility that risks are underestimated.</p> <p>In Appendix W (HEHRA), the toxicity reference values that have been derived are based on different endpoints for different species making it difficult to evaluate cumulative effects with any degree of certainty. Nevertheless, most of the parameters identified as chemicals of concern are essential nutrients and are not expected to be present at concentrations that present a risk. For strontium and arsenic, the hazard quotients are sufficiently low that additivity would have little effect on the outcome of the assessment.</p>	<p>The following text has been added to Appendix W (HEHRA), Section 2.5.3: Several contaminants affect the same organ system (e.g., respiratory irritants, etc.) which means that there is the potential that they could interact resulting in the potential for greater than anticipated health effects. As such, assessing chemicals on an individual basis introduces the possibility that risks are underestimated owing to the fact that the combined effect of chemicals that act by a common mode of action is not taken into account. Under these circumstances they typical practice is to sum hazard quotients for those compounds that act on the same organ system.</p> <p>In the present assessment, the hazard quotients for similarly acting compounds were not summed on the recognition that, with the exception of the criteria air contaminants, the hazard quotients were sufficiently low such that combining all of those that act by a common mechanism of action would have little significant effect on the outcome of the assessment. With respect to criteria air contaminants, while there is recognition that contaminants such as PM, NO₂ and SO₂ interact to potentiate health outcomes, the extent to which these pollutants interact is still the subject of research. The exposure limits used in the assessment for these criteria contaminants are largely based on the results of epidemiological studies that evaluated changes in health outcomes associated with changes in urban air quality. As such, the exposure limits already reflect combined exposure to multiple contaminants.</p> <p>To address the issue of additive and synergistic effects in Appendix W (HEHRA TSD), the following text has been added to Section 3.5:</p> <p>Continued on next page.</p>	Appendix W (HEHRA), Section 2.5.3 and 3.5

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270 cont	See previous page.	See previous page.	See previous page.	With respect to additive and/or synergistic effects, there is the potential that contaminants that have similar modes of action may interact and result in the potential for greater than anticipated ecological health effects. Therefore, assessing chemicals on an individual basis introduces the possibility that risks are underestimated owing to the fact that the combined effect of chemicals that act by a common mode of action is not taken into account. Under these circumstances the typical practice is to sum hazard quotients for those compounds that act on the same organ system. In the present assessment, the hazard quotients for similarly acting compounds were not summed on the recognition that the hazard quotients were sufficiently low such that combining all of those that act by a common mechanism of action would have little significant effect on the outcome of the assessment.	See previous page.
271	Wabun Tribal Council	<p>WTC-IR#95: Ecological Health Risk Assessment – Terrestrial Biology, Chapter 12, Section 12.4 Ecological Health Risk Assessment and Appendix W</p> <p>The EHRA was conducted on chemicals of concern that are sourced from air emissions from the processing operations. However, the assessment did not assess potential risk of waterbirds or shorebirds being exposed to tailings or surface water associated with the Tailings Management Facility (TMF).</p> <p>Please revise the EHRA to include the potential exposure of terrestrial species, including shorebirds and waterbirds, to the TMF.</p>	Appendix W (EHRA) assessed terrestrial receptors potentially exposed to contaminants of concern resulting from aerial deposition and aquatic and terrestrial receptors exposed directly or indirectly to contaminants present in discharge effluent. As the TMF is not considered a suitable ecological habitat for ecological receptors, including shorebirds and waterbirds, potential risks to these receptors associated with exposure contaminants present in the TMF was not evaluated.	None.	n/a
272	Wabun Tribal Council	<p>WTC-IR#96: Monitoring Measures – Biological Environment, Chapter 16, Table 16-2</p> <p>For terrestrial biology, the only recommended monitoring is Wildlife-Project interactions, defined as any wildlife interaction that requires a response from Project personnel (i.e., removal or deterrent actions, injury, and mortality). Though it is noted that waterbird use of the tailings pond will also be monitored.</p> <p>For the project construction and operations phase, including the Cross Country Alignment, the EA has identified that no residual adverse effects on the populations and/or distribution of ungulates and furbearers will occur. Given the importance of these natural resources, a monitoring program should be developed to confirm that the Project is not having an effect. The results of the monitoring program should be provided to regulatory authorities, Aboriginal groups and other stakeholders. In order to provide appropriate monitoring, it will be first necessary to determine current populations as indicated above.</p> <p>Please detail a monitoring program for ungulates and furbearers in Table 16-2.</p>	<p>With the intent to minimize wildlife interactions IAMGOLD is committed to monitoring interactions with wildlife at the Project site (see Chapter 16). IAMGOLD feels confident about the conclusions of the impact assessment with regards to effects on wildlife and sees no need for any additional monitoring programs.</p> <p>Typically monitoring programs are needed when there are identified risks, levels of uncertainties and extensive mitigation measures required to mitigate potential effects. However, this does not apply to this Project.</p>	None.	n/a

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273	Wabun Tribal Council	<p>WTC-IR#97: Socio-economic Baseline, Chapter 6, Section 6.5 Human Environment</p> <p>"Primary data collection, including questionnaires sent to stakeholders and Aboriginal community representatives in towns, townships and First Nation reserves, was also used to define land and resource use." (p.6-114)</p> <p>Information in relation to several indicators was unavailable for potentially affected First Nations. This information may exist and the First Nations may be in a position to provide this information in whole or in part to assist with effects assessment and management.</p> <p>Please provide copies of all questionnaires sent previously to MFN, FPFN or their representatives.</p>	<p>Socio-economic data collection questionnaires were provided to key informant representatives of Mattagami First Nation and Flying Post First Nation in 2013. The data collected was used in the development of the socio-economic baseline and impact assessment. A copy of the Socio-Economic Data Collection Questionnaires was provided directly to Wabun Tribal Council on October 15, 2014.</p> <p>The EA text has been revised to address the nature of the questionnaires.</p>	<p>Section 6.5 has been revised to state the following:</p> <p>"Primary data collection, including key informant questionnaires sent to stakeholders and Aboriginal community representatives in towns, townships and First Nation reserves, was also used to define land and resource use."</p>	Section 6.5, second paragraph
274	Wabun Tribal Council	<p>WTC-IR#98: Socio-economic Baseline, Chapter 6, Section 6.5.6.1</p> <p>"Not all data from the 2011 National Household Survey portion of the 2011 Census was available at the time of writing." (p.6-132)</p> <p>Please provide any additional relevant information that has since become available from the 2011 National Household Survey.</p>	<p>The 2011 National Household Survey data is now available for the relevant areas, but has been repressed by Statistics Canada owing to the low response rates. This data may be misleading owing to high levels of non-response bias and as such, will not be incorporated into the Amended EIS / Final EA Report. Therefore no new relevant information has become available for inclusion in the Amended EIS / Final EA Report.</p>	None.	n/a
275	Wabun Tribal Council	<p>WTC-IR#99, Socio-economic Baseline, Chapter 6, Section 6.5.6.1 - Methodology</p> <p>The EIS notes a number of limitations to the socio-economic data presented in the EIS:</p> <ul style="list-style-type: none"> ▪ -limitations inherent in the 2006 and 2011 Census ▪ not all 2011 NHS data was available at time of writing the EIS ▪ implications of Statistics Canada rounding and non-reporting of data for small communities ▪ not all First Nations publicize their information on AANDC community profiles <p>The scope of the socio-economic information presented in the EIS for the MFN and FPFN is limited for the reasons outlined above and for other reasons. In many instances, it is not sufficient for the prediction of potential socio-economic effects of the proposed Project on the First Nations, for identifying mitigation or enhancement measures, or for providing a baseline for socio-economic monitoring programs.</p> <p>Attached, as Appendix "A" to this submission, is an example table summarizing the kinds of socio-economic data that could be relevant to effects prediction, mitigation/enhancement and management. These materials are provided for further discussion between the First Nations, IAM Gold and potentially also government agencies operating First Nation programs.</p> <p>a) Please summarize the measures taken to date to work with the MFN and FPFN to identify or obtain socio-economic baseline information for use in the socio-economic impact assessment of the proposed Project, and what further measures, if any, are contemplated.</p> <p>b) Please indicate what consideration, if any, has been given to date to the collection of primary socio-economic data in the First Nation communities.</p>	<p>a) The limitations listed in the Amended EIS / Final EA Report do exist but are not unique to the area; in fact they are universal for projects being considered in rural areas and in areas which can affect Aboriginal peoples.</p> <p>b) IAMGOLD has taken additional steps to compile socio-economic data for Mattagami and Flying Post First Nations, including hiring members of those First Nations to collect information, the results of which were incorporated into the socio-economic baseline report as appropriate.</p>	None.	n/a
276	Wabun Tribal Council	<p>WTC-IR#100: Education, Chapter 6, Section 6.5.6.2</p> <p>"At present, 11 Mattagami First Nation members are pursuing a post-secondary education and 27 students from Flying Post First Nation as well. None of these students are pursuing education related to the mining industry (Flying Post First Nation, 2013)." (p.6-150)</p> <p>This information appears to suggest that there is no interest in pursuing mining-related careers among youth from MFN and FPFN.</p> <p>Please confirm whether any of the students attending post-secondary education from MFN or FPFN were interviewed or otherwise surveyed to determine their interest in pursuing mining-related employment.</p>	<p>The Amended EIS / Final EA Report has been updated to state "None of these students have been identified as directly pursuing an education related to the mining industry (Flying Post First Nation, 2013)".</p> <p>IAMGOLD did not undertake interviews with students as part of the EA development but expects that the opportunity for employment and support for training associated with the proposed Project may attract interest among young members of Mattagami and Flying Post First Nations.</p>	<p>The following text:</p> <p>"None of these students are pursuing education related to the mining industry (Flying Post First Nation, 2013)."</p> <p>has been replaced with:</p> <p>"None of these students have been identified as directly pursuing an education related to the mining industry (Flying Post First Nation, 2013)."</p>	Chapter 6.5.6.2, "Infrastructure and Services" heading, "Education" subheading

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277	Wabun Tribal Council	<p>WTC-IR#101: Education, Appendix T, Section 3.1.8</p> <p>"On the Mattagami First Nation reserve the number of new dwellings as a result of direct employment and as a proportion of existing dwellings, is estimated to increase by 11.8%. This results in nearly 10 new households/dwellings. Assuming that the proportion of school aged children matches the Canadian average for First Nation households of 1.6 children per 3.7 person household, there would be approximately 16 additional children (SC, 2012a). The older children would be bussed to Timmins for high school and some will be younger than school aged. Nevertheless, there will be increased enrolment in elementary schools in those communities. Since excess capacity exists for enrolment, this could be considered a positive effect since it may prevent loss of teachers or school closures." (p.3-21)</p> <p>The number of children returning to the reserve could be higher since younger families are more likely to have one or both parents taking up employment at the mine. Though the increase in enrolment may not exceed the physical capacity of the school, it may require opening of a new classroom, adding a new teacher or educational assistant, purchasing new supplies and equipment, repairing or upgrading parts of the school not currently in use, accessing funding on short notice, etc.</p> <p>Please detail the implications for the Mary Jane Naveau Memorial School of the addition of up to 25 students within a one-year period (i.e. all families arrive in Year -2).</p>	<p>The Statistics Canada definition of a "child" in the cited statistic includes people from 0 to 24 years of age (http://www12.statcan.gc.ca/census-recensement/2011/ref/guides/98-312-x/98-312-x2011005-eng.cfm). As a result, children aged 6 to 13 are expected to make up only a fraction of the estimated number of additional children. As noted by the respondent, the number of household members working at the Project may be greater than one (1) and may in fact include household members classified as children under the definition provided by Statistics Canada, which would further reduce the ratio of school-age children per employee. For these reasons it is unlikely that returning members motivated by employment at the site would increase intake at the school by 25 students in a one-year period. IAMGOLD will work with potentially affected Aboriginal groups to develop a socio-economic / community management plan to address potential Project-related socio-economic / community effects identified through the EA process and/or at later stages of the Project. An unexpected increase in primary school enrollment would be an example of an emergent issue which could be managed by this process. The measures undertaken in response to such a situation would then be developed collaboratively and are outside the scope of this document.</p>	None.	n/a
278	Wabun Tribal Council	<p>WTC-IR#102: Employment, Chapter 6, Section 6.5.6.2</p> <p>"Flying Post's membership has been severely affected by the loss of forestry-related jobs in the Nipigon area (pers. comm. Flying Post First nation, 2013b)." (p.6-135)</p> <p>"The unemployment rate in that community in 2006 was 8.5%. However, the Flying Post First Nation estimates the unemployment rate of its members to be lower than this, at around 5% (Flying Post First Nation pers. comm., June, 2013a)." (p.6-142)</p> <p>The above quotations appear to contradict one another as an unemployment rate of 5% is basically full employment.</p> <p>Please indicate how the 2013 unemployment rate for Flying Post First Nation was determined.</p>	<p>The estimate of the unemployment rate was provided by the Flying Post First Nation through interviews with First Nation leadership, the content of which was reviewed by the First Nation. The loss of employment opportunities in the forestry industry in Nipigon has spurred the relocation of some families for the purpose of seeking other employment, thereby impacting the community by the loss of residents, but not impacting the overall employment rate of Flying Post First Nation members.</p>	None.	n/a
279	Wabun Tribal Council	<p>WTC-IR#103: Employment, Appendix T, Section 3.1.1 Labour Market</p> <p>"Related to employment, access to and from the Project site was important for Mattagami First Nation members who live on the reserve but don't drive." (p.3-4)</p> <p>While the Proponent may be in a position to arrange for transportation to the mine site, it is likely that education, training and other preparatory activities for employment at the mine will require MFN members to travel frequently to Timmins and/or Sudbury. The lack of vehicles or licences could pose a barrier to employment at the mine.</p> <p>Please provide any statistics concerning the numbers of people on the MFN reserve who do not drive.</p>	<p>The 2011 National Household Survey for Mattagami First Nation found that 69% of employed people living in the community drove to work, but this is misleading because this may be due to close proximity to their place of work rather than due to the lack of a vehicle or the inability to drive. IAMGOLD is committed to the success of training programs and to inclusion of Mattagami First Nation workers in training programs. As part of that commitment, IAMGOLD will work with potentially affected Aboriginal groups to develop a socio-economic / community management plan to address potential Project-related socio-economic / community effects identified through the EA process and/or at later stages of the Project. IAMGOLD is committed to exploring this issue as part of the socio-economic / community management plan to identify options to ensure that access to training and education programs are not dependent on vehicle or licence ownership, as appropriate.</p>	None.	n/a
280	Wabun Tribal Council	<p>WTC-IR#104: Employment, Chapter 6, Section 6.5.6.2</p> <p>"Mattagami First Nation reports that, as of June 2013, the on-reserve unemployment rate was approximately 20%, and they estimate that about 75% of off-reserve membership would return to the First Nation should employment opportunities become available (Mattagami First Nation, 2013c)." (p.6-142)</p> <p>The correct reference appears to be "Mattagami First Nation. July 2013c. Personal interview."</p> <p>The ability of Mattagami First Nation members to return to the reserve may be limited by the availability of housing, quality of primary education for children, transportation, availability and quality of social, emergency and health services and potentially other factors.</p> <p>Please indicate how the 2013 unemployment rate for Mattagami First Nation was determined.</p>	<p>The error in the citation has been corrected.</p> <p>The estimate of the unemployment rate was provided by the Mattagami First Nation through interviews with First Nation leadership, the content of which was reviewed by the First Nation.</p>	<p>Citation has been updated to the following: "(Mattagami First Nation pers. comm., July, 2013c)"</p>	<p>Section 6.5.6.2 "Regional Economy" heading, "Employment, Labour Force and Income Levels" subheading, second last paragraph</p>

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281	Wabun Tribal Council	<p>WTC-IR#105: Employment Assistance Programs, Chapter 6, Section 6.5.6.2</p> <p>"Gezhtoojig Employment and Training in Sudbury offers employment, business, and training services to all Anishnabek people."</p> <p>It is unclear whether this service is relevant to the proposed Project. (p.6-148)</p> <p>Please provide details concerning the Gezhtoojig Employment and Training, including the program objectives, levels of utilization by the affected First Nations, capacity for expansion, responsibilities and funding sources.</p>	<p>Gezhtoojig Employment and Training provides services and programs to seven First Nations and the City of Greater Sudbury. While the seven First Nations currently served by their programs and services are not expected to experience employment and economic benefits and/or social effects either due to their proximity to the Project, or through benefits received through agreements signed with IAMGOLD, it is possible that members of the Aboriginal communities who may experience Project-related benefits or effects may reside in the City of Greater Sudbury, and as such may access services through Gezhtoojig Employment and Training. As employment and training planning advances with mine planning, further discussions will occur between IAMGOLD and various training providers to determine the applicability and suitability of their programs.</p>	None.	n/a
282	Wabun Tribal Council	<p>WTC-IR#106: Employment Training, Chapter 10, Table 10-1</p> <p>"Labour Market /Population Demographics – further training</p> <p>Identify and implement basic skills and technical training for Aboriginal and local community members to upgrade marketable skills and increase capacity, where possible.</p> <p>Identify and implement basic skills and technical training for Aboriginal and local community members to upgrade marketable skills and increase capacity. " (p.10-44)</p> <p>Detailed information concerning training programs could not be located in the EIS. It is unclear the extent to which training programs have been initiated and whether they will be initiated sufficiently in advance of construction.</p> <p>Please provide further details concerning proposed Aboriginal training programs completed, in progress, or contemplated in the future including:</p> <p>a) the nature and scope of training, retention and advancement programs;</p> <p>b) level of participation or anticipated participation by Aboriginal communities by program, if available;</p> <p>c) timeframes by program;</p> <p>d) expected outcomes or objectives by program; and</p> <p>e) any other pertinent details.</p>	<p>IAMGOLD is committed to building and maintaining a strong relationship with potential affected Aboriginal groups. As part of that commitment, IAMGOLD is negotiating impact benefit agreements with those groups. These agreements are expected to include a number of topics, including the nature and scope of training programs offered.</p> <p>IAMGOLD has made several commitments with response to training as it relates to Project construction, operations and closure (see Appendix Y; EA Commitments Table; Table 3: Mitigation Measures – Human Environment). As Project planning advances and discussions continue with Aboriginal communities, training plans and programs will be developed in support of increasing the capacity of Aboriginal and local community members. This planning process will also be informed by negotiated agreements.</p> <p>It is unknown at present how many Aboriginal community members will choose to engage in training programs. This will likely be determined by individual interest and career goals as identified through a career planning process. IAMGOLD will work in concert with the appropriate community contacts to identify training needs, develop relevant training plans, and identify potential participants. IAMGOLD continues to discuss education and training with Wabun Tribal Council representatives.</p> <p>To date, IAMGOLD has supported the PLAY program which encourages life and leadership skill development in youth ages 4-13 through fun and educational activities (Spring 2013 – ongoing) and continues to support educational scholarships through Wabun Tribal Council. Additionally IAMGOLD, in partnership with Northern College, the Ministry of Training, Colleges and Universities, and Mattagami First Nation is implementing a seven week basic employability skills training program on Mattagami First Nation reserve starting on October 20, 2014.</p>	None.	n/a
283	Wabun Tribal Council	<p>WTC-IR#107: Employment, Appendix T, Section 3.1</p> <p>"IAMGOLD's hiring policy would determine what percent of these local workers would be Aboriginal, but for the purposes of this analysis it is assumed that the share of the workforce drawn from the local study area that are Aboriginal would be similar to the share seen in the pre-construction workforce." (p.3-1)</p> <p>The basis for this assumption is not provided. Considering the high labour compensation proposed for the project, and the proximity of the MFN reserve, the proportion of First Nation members who choose to work on the Project could be much different.</p> <p>a) Please provide a basis for the assumption that the share of the construction workforce drawn from the local study area that is Aboriginal would be similar to the share pre-construction.</p> <p>b) Please indicate whether or not this assumption was also used to determine the number of MFN members anticipated to relocate to the reserve.</p>	<p>a) The assumption that the construction workforce would be equal to the pre-construction workforce reflects a conservative estimate based on recent experiences with similar Projects in Northern Ontario. IAMGOLD's goal is to maximize the hiring of local workers, specifically local First Nations. It is possible that the proportion of First Nations workers could be higher than predicted, but is unlikely to be lower than predicted. This is based on the availability of skills, and the shared commitment to local employment between IAMGOLD and affected Aboriginal communities.</p> <p>b) Construction employment, being seasonal in nature and non-permanent, is not considered in relocation estimates. Temporary (e.g., seasonal) accommodation is not available within the Mattagami First Nation community and so construction workers are not expected to be housed there. There would be permanent positions available during the construction phase and these are considered in the determination of migration effects as described in Section 9.15 of the EA. For the economic assessment, it has been assumed that construction phase workers would be drawn from Mattagami First Nation in the same proportion as other operations workers.</p>	None.	n/a
284	Wabun Tribal Council	<p>WTC-IR#108: Employment, Appendix T, Section 3.2.1, Graphic 3-2</p> <p>This graphic illustrates the Project workforce during operations for three categories of employment: general & administrative, process plant and mining.</p> <p>Please provide a similar graph to Figure 3-2 for the duration of the construction, operations and closure and post-closure phases, breaking down the workforce categories as appropriate for the various phases.</p>	<p>Please refer to Section 3.1.1 of Appendix T (Socio-Economic TSD) for the graphic depiction of the workforce in the construction phase. Available information on the expected workforce during the closure phase is presented in Section 3.3.1.</p>	None.	n/a

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285	Wabun Tribal Council	<p>WTC-IR#109: Income Levels, Chapter 6, Section 6.5.6.2; Chapter 9, Section 9.15.2.1</p> <p>"[Income] Data for Aboriginal groups resident in the Project area were not available from published sources." (p.6-142)</p> <p>"Jobs created by the Project will be relatively lucrative; people from the regional study area directly employed in the construction of the Project are expected to earn an average of \$148,645 annually in labour compensation, 3.0 times the urban regional study area average median earnings of those working full-time and 5.0 times the average median earnings for all those persons aged 15 and over." (p.9-76)</p> <p>The lack of income data for Aboriginal groups, particularly Mattagami First Nation, limits the predictive value of the EIS with respect to Aboriginal employment, migration, housing and demands on local services, among other indicators. There is also the potential for many current employees working for First Nation organizations to leave their positions to work at the mine. This could have adverse implications for the First Nations. Alternative approaches may need to be considered for obtaining this data in collaboration with the MFN.</p> <p>Detailed income data by mine employment position would assist the First Nations in estimating the likely potential for its members to take work on the proposed Project, including transferring away from their existing positions.</p> <p>a) Please elaborate on the efforts made to date to obtain income data from the Mattagami First Nation and Flying Post First Nation.</p> <p>b) Please provide mine income data by employment position for the construction and operations phases of the proposed Project.</p> <p>c) Please clarify what is included in "labour compensation" for the project.</p>	<p>a) Data on income for Mattagami First Nation in the 2011 National Household Survey was excluded for both data quality and privacy reasons. While socio-economic data was collected with the participation of the potentially affected Aboriginal communities, this data did not include income data because this data is of a private nature and can only be volunteered by members themselves. Surveys of private incomes are methodologically problematic and do not clearly represent a viable alternative to National Household Survey data.</p> <p>b) Mine income data by position is not currently available for Project construction and operations phases. This level of data is not required to understand the benefits of the Project for the purposes of the EA.</p> <p>c) Labour compensation is defined as all of the rewards earned by employees in return for their labour. This includes direct financial compensation consisting of pay received in the form of wages and/or salaries and/or bonuses provided at regular and consistent intervals.</p>	None.	n/a

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286	Wabun Tribal Council	<p>WTC-IR#110: Housing, Chapter 6, Section 6.5.6.2 and Appendix T, Section 3.1</p> <p>"Mattagami First Nation provided a list of housing stock in the community, which consists of seven apartments, 13 townhouses or duplexes and 55 single family homes. There is a waiting list for housing in the community, and a share of housing is band-owned and rented to tenants. (p.6-144)</p> <p>For Mattagami First Nation, the effect on population is to accelerate the trend of population growth, increasing population from 193 in 2011 to 256 by Year -1, a 33% increase." (p.3-11) (underlining added)</p> <p>"Currently, the community has seven apartments, 13 townhouses or duplexes and 55 single family homes for an on-reserve population of 168. Members wishing to build a home in the community can finance construction through a band-guaranteed mortgage. The average amount of an outstanding mortgage on the existing housing stock is \$150,000. There is a waiting list for housing, and crowding is an issue in the community (pers. comm., Mattagami First Nation, July 2013; AANDC, 2013)." (p.3-16) (underlining added)</p> <p>"Currently a waiting list exists for band-owned housing. Off-reserve workers wishing to live in the community would be expected to finance construction through a band-guaranteed mortgage or to purchase housing from another member. The former may cause challenges for Mattagami First Nation since each house constructed represents a contingent liability that the band is responsible for if the mortgage goes into arrears. ... As a result, the effect of housing demand on First Nation communities is ambiguous and depends on correlated effects on local government revenue." (p.3-18)</p> <p>"On the Mattagami First Nation reserve the number of new dwellings as a result of direct employment and as a proportion of existing dwellings, is estimated to increase by 11.8%. This results in nearly 10 new households/dwellings." (p.3-22) (underlining added)</p> <p>"Potential significant increases in population may occur in the local study area: in Gogama these amount to 7.6% or approximately 21 new residents and on the Mattagami First Nation reserve they amount to 18% or approximately 35 new residents." (p.3.26) (underlining added)</p> <p>It appears that for the MFN there are different estimates of the expected increase in population, the expected increase in households and the percentages of both of these attributable to the proposed Project.</p> <p>Presuming that the apartments are single-family dwellings, there are a total of 75 residential units on the MFN reserve.</p> <p>Based on an on-reserve population of 193 and 75 available residential units, there are at minimum an estimated 2.6 members per household on the MFN reserve. Further information is required concerning the range in the number of members per household, vacancies, unit size and other factors to determine the extent to which overcrowding is an issue for the MFN, and whether this issue could be exacerbated by the proposed Project.</p> <p>a) Please confirm the demographic and housing data for the MFN, both with and without the proposed Project for the construction, operations and closure phases.</p> <p>b) Please indicate the length of the housing waiting list, and whether the length of the list is increasing or decreasing.</p> <p>c) Please indicated whether there are any current plans to develop new housing on the reserve and, if so, how much housing by what date.</p>	<p>a) Changes in population and housing demand for Mattagami First Nation over the life of the Project has been included in a new table included in the Addendum to Appendix T (Socio-Economic TSD). This table illustrates the predicted total population changes and housing demands as a result of the Project. Current demographic and housing data for the Mattagami First Nation is presented in the Socio-Economic Baseline Study Report. Table 3-12 of the Socio-Economic TSD highlights the projected population within the regional study area for years 1 to 15 and is based on the total population growth including the natural increase in population expected in the baseline scenario.</p> <p>b) IAMGOLD understands that the current waiting list for housing at the Mattagami First Nation comprises approximately 12 families and that it has increased in the past year by about nine families (pers. comm., Mattagami First Nation, 2014).</p> <p>c) It is IAMGOLD's understanding that Mattagami First Nation is interested in constructing additional housing units in the community; however, the associated infrastructure required to support the additional units (e.g., transmission lines, roads, septic) are cost prohibitive and the current housing budget is focused on maintaining existing housing stock (pers. comm., Mattagami First Nation, 2014).</p>	<p>Appendix T has been updated to reflect ranges of anticipated effects rather than absolute numbers and four tables have been updated to reflect anticipated Project effects on housing demand and population during Project construction and Project operations. The tables illustrate population effects in comparison to 2011 data and housing effects compared to 2011 housing stock. The updated tables are as follows: Table 3-4 illustrates the predicted total population changes during construction; Table 3-12 illustrates the projected population changes during operations compared to the population figures reported in 2011; Table 3-5 illustrates housing requirements during construction compared to existing housing stock in the regional study area (2011); and, Table 3-13 now compares predicted housing requirements during operations to 2011 housing stock in the regional study area.</p>	Appendix T
287	—	This comment number has not been assigned.	—	—	—

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288	Wabun Tribal Council	<p>WTC-IR#111: Housing, Chapter 9, Section 9.15</p> <p>"For Mattagami First Nation the effect on population is expected to accelerate the trend of population growth, increasing population from 193 in 2011 to an estimated 256 in Year -1, a 33% increase. This is considered a positive, highly distinguishable effect and may result in the need for investment by the community or government that lasts for the construction phase.</p> <p>Demand for new housing in the first year of the construction phase on the Mattagami First Nation reserve is expected to rise by 12.4%, of which 11.1% would come from the need to house people moving onto the reserve due to Project employment. Currently a waiting list exists for band-owned housing. Off-reserve workers wishing to live in the community would be expected to finance construction through a band-guaranteed mortgage or to purchase housing from another member. This bottleneck may result in a change in the distribution of population effects away from the First Nation. (p.9-77)</p> <p>In the Mattagami First Nation reserve, the Project modestly expands demand for housing until Years 5 and 6, supporting a projected increase for a rising population. After Years 5 and 6 the on-site workforce is expected to decline and with it a projected decline in housing demand to baseline levels. (p.9-80)"</p> <p>The relationship between population increase and increases in demand for housing on the MFN reserve is unclear.</p> <p>a) Please explain how a 33% increase in population results in only a 12.4% increase in demand for housing.</p> <p>b) Please explain how these percentage changes were determined.</p>	<p>a) The discrepancy between population growth and housing demand arises from assumptions about the composition of relocating households, which are expected to be disproportionately composed of families with children. Moreover, it should be clear that the 33% increase in growth cited is not within a single year as stated in the review comments – the percentage increase in Year -1 is expected to be 18% (the community is forecast to have grown after 2011).</p> <p>b) The demographic section as written in the EIS / Draft EA Report makes an implicit assumption as to the year of construction. Therefore percentages were determined with this assumed start year for construction in mind. In order to have a clearer understanding of the estimates presented in the report, changes in population and housing demand for Mattagami First Nation over the life of the Project has been included in a new table included as an Addendum to Appendix T (Socio-Economic TSD), restating the same estimates without comparison to a baseline year, and instead presenting them simply in terms of people and homes over the lifetime of the Project.</p>	None.	n/a
289	Wabun Tribal Council	<p>WTC-IR#112: Population, Chapter 6, Section 6.5.6.2</p> <p>"The Flying Post First Nation reserve, located west of Timmins recorded 40 people living on-reserve in the 2006 Statistics Canada survey, although the population currently resides in Nipigon." p.6-138</p> <p>The 2006 Statistics Canada Census appears to be an error in which 8 persons surveyed in the long-form census reported living on the unoccupied reserve lands.</p> <p>Please correct the population information for FPFN.</p>	<p>The 2006 Community Profile for Flying Post First Nation (characterized by Statistics Canada as Flying Post 73), indicates that 40 people were identified as living on reserve. As noted in Section 6.5.6.2 of the EIS / Draft EA Report, this was a Statistics Canada Census error as the Flying Post First Nation reserve is unoccupied. This issue is discussed in greater detail within the Socio-Economic Baseline Study Report (Section 5.2.1 Population Totals).</p>	None.	n/a
290	Wabun Tribal Council	<p>WTC-IR#113: Public Utilities, Chapter 6, Section 6.5.6.2, Appendix T, Section 3.1.6</p> <p>"The Mattagami First Nation is serviced by a groundwater supply system (two wells with disinfection equipment and distribution system) constructed in 1995, with a capacity of 60 m³/day. The water plant was upgraded in 2011 to meet current demand, and can support an increase in population to an unknown degree (pers. comm. Mattagami First Nation, 2013b)." (p.6-146)</p> <p>"There are no concerns or capacity issues with provision of public utilities on the Mattagami First Nation reserve. "(p.3-20)</p> <p>Without knowledge of the current demand for water, the potential future demand and the ability to service that future demand, the effects of population growth resulting from the proposed Project and other factors on MFN water supply services cannot be determined. For example, the average per capita water use in Canada is 0.3 m³/day. So a population of 200 would consume 60 m³, suggesting that the MFN would be at capacity.</p> <p>It cannot be determined whether the appropriate personnel working at MFN utilities were aware of the potential increase in population and housing on the reserve as a result of the proposed Project, and the consequent effects on public utilities.</p> <p>a) Please report the current average and range of daily water use (in m³) on the MFN reserve.</p> <p>b) Please confirm that the public utilities in the MFN are capable of providing services in the event of a 33% increase in population in Year -2 (i.e. very quickly over a 12-24 month period)</p>	<p>IAMGOLD is confident that effects due to population growth are adequately considered through the EA.</p> <p>a) The Socio-Economic Data Collection Report prepared by a consultant hired through Mattagami First Nation to collect primary socio-economic data from Mattagami First Nation did not include information about current and range of daily water use on the Mattagami First Nation reserve.</p> <p>b) It should be clear that the 33% increase in growth cited is not within a single year as stated in the review comments – the percentage increase in Year -1 is expected to be 18% (the community is forecast to have grown after 2011).</p> <p>IAMGOLD will work with potentially affected Aboriginal groups to develop a socio-economic / community management plan to address potential socio-economic Project-related effects, including potential effects on public utilities.</p>	None.	n/a

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291	Wabun Tribal Council	<p>WTC-IR#114: Solid Waste, Chapter 6, Section 6.5.6.2</p> <p>"Mattagami First Nation has no solid waste management facility or other waste diversion initiatives." (p.6-147)</p> <p>Concern that the Project could affect waste management services also used by the MFN.</p> <p>a) Please indicate how MFN solid waste is managed, including the location and size of the landfill used as well as any diversion depots or other facilities.</p> <p>b) Please indicate whether the MFN currently makes use of any solid waste management facilities contemplated for use by the Project.</p>	<p>a) Mattagami First Nation currently manages its own landfill near the community.</p> <p>b) It is IAMGOLD's understanding that Mattagami First Nation is not making use of the solid waste management facilities contemplated for use by the Project.</p>	<p>The following text:</p> <p>"Mattagami First Nation has no solid waste management facility or other waste diversion initiatives."</p> <p>was replaced by:</p> <p>"Mattagami First Nation manages and operates a landfill near the community."</p>	<p>Section 6.5.6.2</p> <p>"Infrastructure and Services" heading, "Solid Waste" subheading</p>
292	Wabun Tribal Council	<p>WTC-IR#115: Social, Recreational and Community Services and Infrastructure, Chapter 6, Section 6.5.6.2</p> <p>"Several social support and training programs are also offered [in MFN]." (p.6-147)</p> <p>Understanding the existing social support and training programs is important to understanding adaptive capacity and potential to implement effects management.</p> <p>Please provide details concerning the social support and training programs offered in the MFN, including the program objectives, levels of utilization, capacity for expansion, responsibilities and funding sources.</p>	<p>Information on social support and training programs is provided in the Socio-Economic Baseline Study Report. IAMGOLD is committed to building and maintaining a strong relationship with affected Aboriginal groups. As part of that commitment, IAMGOLD will work with potentially affected Aboriginal groups to develop a socio-economic /community management plan to address potential Project-related socio-economic/community effects identified through the EA process and/or at later stages of the Project. As Project planning advances and discussions with affected Aboriginal groups continue effects management strategies will be developed in support of optimizing Aboriginal participation in the Project.</p>	<p>None.</p>	<p>n/a</p>
293	Wabun Tribal Council	<p>WTC-IR#116: Health Infrastructure and Services, Chapter 6, Section 6.5.6.2</p> <p>"The Mattagami First Nation has a nursing station, with average capacity, There are no future plans for further development (Mattagami First Nation, July 2013)." (p.6-150)</p> <p>Further details are required to access adaptive capacity.</p> <p>a) Please explain what is meant by "average capacity".</p> <p>b) Please indicate what level of increased demand on services would necessitate "further development".</p> <p>c) Please indicate how general health services are provide to MFN members, including from physicians, dentists and specialists.</p>	<p>a) Average capacity is meant to indicate that the level of service and the level of demand are compatible, in that there is not a mismatch between extremes in demand and service provisions.</p> <p>b) The level of increased demand on services that may warrant further development of emergency or health services within the First Nation were not specified by Mattagami First Nation. With respect to first response capabilities, it was identified through the socio-economic data collection that liability issues would need to be considered as part of any planning initiatives related to first response services (pers. comm. Mattagami First Nation, 2013).</p> <p>c) Mattagami Health provides referrals to other medical services and provides daily medical transportation for members to attend medical appointments outside of the community (pers. comm. Mattagami First Nation, 2013).</p>	<p>None.</p>	<p>n/a</p>
294	Wabun Tribal Council	<p>WTC-IR#117: Health Infrastructure and Services, Chapter 6, Section 6.5.6.2</p> <p>"The Flying Post First Nation Health Services administers an Aboriginal Healthy Babies Healthy Children program for parenting support and healthy child development (Flying Post First Nation, 2013)." (p.6-150)</p> <p>Please indicate how general health services are provide to FPFN members, including from physicians, dentists and specialists.</p>	<p>All members of Flying Post First Nation have access to the Brighter Futures and Building Healthy Communities programs and the health services offered through Wabun Tribal Council (pers. comm., Flying Post First Nation, 2013a).</p>	<p>None.</p>	<p>n/a</p>
295	Wabun Tribal Council	<p>WTC-IR#118: Emergency and Policing Services, Chapter 6, Section 6.5.6.2</p> <p>"First Nation communities have seen a rise in the abuse of prescription drugs, mental health problems in NAPS officers, underfunding and recruitment and retention challenges." (p.6-151)</p> <p>a) Please clarify whether this information concerns the First Nations, the NAPS officers working in the First Nations, or both.</p> <p>b) Please provide the source(s) of this information.</p>	<p>a & b) The source of the information referenced is the 2011-2012 Nishnawbe-Aski Police Service (NAPS) Annual Report. In this Report, the Chief of Police noted key concerns or challenges NAPS is facing, including a rise in the abuse of prescription drugs in the communities served by NAPS, as well as concerns specific to NAPS, namely the mental health of NAPS officers and recruitment and retention of NAPS officers.</p> <p>The EA text has been revised to include the above reference.</p>	<p>The following citation was added to Section 6.5.6.2:</p> <p>"(NAPS, 2012)"</p> <p>The following reference was added to Section 19.6:</p> <p>"Nishnawbe-Aski Police Service (NAPS). 2012. Annual Report 2011-2012. Annual Report"</p>	<p>Section 6.5.6.2</p> <p>"Infrastructure and Services" heading, Emergency and Policing Services" subheading</p> <p>Section 19.6</p>

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296	Wabun Tribal Council	<p>WTC-IR#119: Transportation, Chapter 9, Table 9-13</p> <p>"Project-related traffic volumes are forecasted to increase on Highway 144, by 16 additional vehicle trips per day on average. According to these estimates, at most an increase of just under 3% could occur on Highway 144 in the section between Highway 560 and 661 where vehicles would be turning off Highway 144 at Sultan Industrial Road to access the Project site." (p.9-83)</p> <p>It is likely that there will be times of more extreme traffic on the local roads resulting from project-related activity. What are the ranges? Are there temporary conditions that could lead to high traffic?</p> <p>a) Please provide the range in expected traffic changes, highlighting the periods of highest traffic volume increases.</p> <p>b) Please explain the conditions or activities at the proposed Project during construction, operations or closure, including accidents, which would lead to higher increases in traffic volumes.</p>	<p>As noted in Appendix T (Socio-Economic TSD), traffic volumes presented are estimates averaged throughout the 24 month construction phase and actual traffic volumes will be higher during peak construction periods. The peak construction periods are expected to occur in Spring and Summer of Year -2 and Year -1, with larger volumes occurring in the Spring / Summer of Year -1 when process equipment, trucks, and other equipment will be transported to site. IAMGOLD is committed to managing potential traffic effects through a number of measures outlined in Appendix Y (EA Commitments Table), including scheduling delivery of major equipment and shuttle buses to avoid peak times where practical.</p> <p>During the operations phase, it is expected that the volume of traffic as outlined in Chapter 9 will be consistent. During Year 1 of the closure phase, traffic volumes will likely be higher than the average 16 additional vehicle trips per day as decommissioning and removal of equipment and facilities occurs.</p> <p>A detailed construction plan is not yet established and as such, detailed transportation planning has yet to occur. A detailed construction plan, including a transportation plan will be developed as part of the detailed engineering phase of Project development. The mitigation measures developed as part of this Amended EIS / Final EA Report (Chapter 16) will apply to the transportation planning for all phases of the Project.</p>	None.	n/a
297	Wabun Tribal Council	<p>WTC-IR#120: Visual Aesthetics, Chapter 9, Section 9.14</p> <p>"This is expected to result in a perceptible change in landscape, but should not affect enjoyment of the viewscape." (p.9-71)</p> <p>Throughout the visual resources assessment the conclusion is reached that the "enjoyment of the viewscape" will not be affected. The basis for this conclusion is unclear and appears to be entirely based on the Proponent's subjective perspective.</p> <p>Please indicate what specific measures were taken to consult with Aboriginal and non-Aboriginal land users concerning the residual effects of the proposed Project on the visual environment and what concerns were raised or what opinions were expressed by those land users concerning the visual landscape, if any.</p>	<p>IAMGOLD presented results of the effects prediction to Aboriginal and public communities during Open Houses. Additionally, Fact Sheets were prepared and distributed to individuals to present results of the baseline studies and effects prediction.</p> <p>The only visual aesthetics-related comment received from Aboriginal communities indicated that Aboriginal communities are interested in understanding the potential effects from land near the Project. As a result of this comment, an additional effect assessment indicator was included and additional mapping was created to show where Project components may be visible from, including lakes and land</p>	None.	n/a
298	Wabun Tribal Council	<p>WTC-IR#121: Visual Aesthetics, Chapter 9, Section 9.14; Appendix S, Executive Summary</p> <p>"the effect of the Project on the visual landscape during the operations phase will be perceptible to six receptor locations (see Figure 9-31) (p.9-73)</p> <p>Modelling results also indicate that the Project components may be partially visible from one or more of the following lakes: Clam Lake, Chester Lake, Three Duck Lakes, Bagsverd Lake, Delaney Lake, Unnamed Lake #1 and portions of Unnamed Lake #2, Schist Lake, Dividing Lake and Mesomikenda Lake. This visual effect is likely to be perceptible but will not affect enjoyment of the viewscape." (p.ES-2)</p> <p>All of the receptor locations appear to be on the land, despite the identification of canoe routes within the local study area, and the potential that the lakes are used for snowmobiling in winter. For example, it appears that many of the lakes along the canoe route through the local study area would have a regular (if not almost continual) view of the MRA.</p> <p>Please update the assessment of the effects of the Project on visual aesthetics using visual receptors located on lakes within or adjacent to the study area, including Mesomikenda, Dividing, Bagsverd, Clam, Chester, Moore and Schist lakes.</p>	<p>The prediction of effects for visual aesthetics has been completed for three effects assessment indicators, one being 'change in landscape from non-receptor locations'. Figure 9-32 presents the results of the modelling exercise. The highlighted areas of that Figure indicate that one or more Project components may be seen from various locations around the Project site.</p>	None.	n/a

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299	Wabun Tribal Council	<p>WTC-IR#122: Socio-economic Assessment, Chapter 9, Section 9.15</p> <p>"Effects on social effects assessment indicators were defined by:</p> <ul style="list-style-type: none"> ▪ understanding the current baseline conditions; ▪ analyzing existing pressures on these indicators; ▪ predicting the expected changes on those indicators due to the Project; and ▪ predicting whether the indicators could handle these changes. "(p.9-76) <p>When socio-economic changes are observed in aboriginal communities during the life of a large development, such as the proposed Project, it is often difficult to determine whether the cause of the changes is directly related to the development, indirectly related to the development, related to another perturbation in the socio-economic environment but exacerbated or enhanced by the development, or unrelated to the development.</p> <p>The extent to which First Nation organizations are prepared for these changes can significantly determine the degree to which adverse effects are minimized and beneficial effects are enhanced. Therefore, the socio-economic baseline studies need to emphasize the collection of relevant information about current conditions, but also about the capacity of First Nation organizations and communities to absorb and respond to the demands and changes related to the Project. This kind of information assists First Nation communities to identify appropriate actions to prepare for the Project.</p> <p>The challenge in this instance is that despite the identification of potentially appropriate indicators for understanding the baseline conditions, limited reliable socio-economic information concerning the potentially affected First Nations appears in the EIS. As such, it is not possible to accurately predict the expected changes to those indicators or the capacity to manage change within the affected First Nation communities.</p> <p>These predictions or impact pathways reflect the ways in which an initial change in the environment resulting from a development or contributed to by a development translates into an effect or effects. Appendix "B-1" provides a hypothetical example of the potential complexity of the impact pathways for Aboriginal communities in relation to a change in water quality, which is particularly relevant in this instance.</p> <p>In general, impact pathways can be mapped using an interaction matrix. Such a matrix identifies potential interactions between project components and valued components and indicators identified by the affected First Nations during issues scoping. This illustrates the importance of thorough issues scoping to the development of impact pathways and ultimately to the appreciation, avoidance, mitigation and management of effects.</p> <p>Attached, as Appendix "B-2" to this submission, is an example of an interaction matrix for a proposed large-scale hydroelectric facility. While the columns reflect the components of that project, and differ considerably from the components of the proposed Côté Gold Project, the rows likely do not differ greatly from the valued components and indicators that the affected First Nations would identify through an issues scoping process. The numbers in the table reflect the specific details concerning numbered impact pathways identified by the affected First Nations in a separate table (not provided).</p> <p>These materials are provided for further discussion between the First Nations, IAM Gold and potentially also government agencies operating First Nation programs.</p> <p>The EIS does provided impact assessment matrices for the construction, operations and closures phases of the proposed Project in Table 11-3, Table 11-4 and 11-5, respectively. However, these matrices are limited in their consideration of potential interactions between Project components and the values of the First Nations.</p> <p>Comment continues on next page.</p>	<p>Socio-economic data collection questionnaires were provided to representatives of Mattagami First Nation and Flying Post First Nation in 2013, which included numerous questions designed to better understand current conditions and the capacity of First Nation organizations and communities to respond to potential Project-related effects. The data collected was used in the development of the socio-economic baseline and impact assessment.</p> <p>IAMGOLD is of the opinion that this EA includes all effects that can be reasonably be anticipated to occur due to implementation and development of this Project. The EA does not screen out any potential effects but it assesses all effects that have been identified, using conservative levels for evaluating these indicators. Therefore the application of a screening or pathways analysis tool would not add value to the EA process and the assessment of significance. For further information on the methodology see Chapters 1 and 9.</p> <p>It is IAMGOLD's opinion that the methodology to identify EA indicators, potential Project effects and mitigation measures is very transparent and accessible. More complicated approaches would not help in communicating the EA findings. The selection of assessment indicators, the method to assess significance and the potential effects described in the EA were also developed in consultation with stakeholders and potentially affected Aboriginal groups (see Appendix D; Record of Consultation; RoC).</p> <p>IAMGOLD; however, recognizes that all effects predictions have an inherent degree of uncertainty and therefore IAMGOLD is committed to developing and implementing a socio-economic / community management plan. IAMGOLD will work with potentially affected Aboriginal groups to develop a socio-economic / community management plan to address potential socio-economic Project-related effects.</p> <p>The interaction matrix referred to in Appendix V (Climate Change Report) is related to potential climate change interactions with the Project and is not related to the overall identification of Project effects. The interaction matrix can be found in Table 5-1 beginning on page 4-3 of Appendix V.</p>	None.	n/a

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299 cont	See previous page.	An interaction matrix for the proposed Project is mentioned in Appendix V, but it is unclear what is being referred to: The Project interaction matrix was used as the basis for the high level assessment of Project infrastructure and operational components with the projected climate phenomenon/variables. (p.4-2) Please provide the interaction matrix for the proposed Project referenced in Appendix V	See previous page.	See previous page.	See previous page.
300	—	This comment number has not been assigned.	—	—	—
301	Wabun Tribal Council	<p>WTC-IR#123: Criteria for Significance, Chapter 11, Section 11.1.4 Determination of Significance</p> <p>"The decision tree for the Côte Gold Project was developed by a team of professionals, providing technical expertise and experience as to what combination of assessment criteria should result in a significant or not significant effect. The general logic is as follows:</p> <ul style="list-style-type: none"> ▪ If the magnitude of the effect is comparable to baseline conditions, the effect is not noticeable and the impact is considered not significant. ▪ If the effect is limited to the Project site and it is reversible, the impact is considered not significant. ▪ If the magnitude of the effect is clearly distinguishable but meets guidelines or is within the environment's adaptive capabilities and extends beyond the Project site, the impact is considered not significant, if the effect is reversible. ▪ If the effect extends far beyond the Project site, the effect lasts a long time and is not reversible, the impact is considered significant. ▪ If the magnitude of the effect exceeds guidelines or is beyond the environment's adaptive capability and the effect is such that it is not reversible, the impact is considered significant." <p>(p.11-15)</p> <p>The last two bullets above represent the two situations in which effects are considered to be significant. However, both require that the effects be irreversible. Long-term but reversible effects in the biophysical environment can still lead to irreversible effects in the socio-economic environment that are significant. As examples:</p> <p>§ changes to wildlife populations that prevent hunting for an extensive period of time will undermine the transfer of hunting knowledge to future generations;</p> <p>§ nighttime noise levels above baseline lasting a period of two years (or even a much shorter period of time) would be considered highly disruptive by most people even though the effects are fully reversible following construction; or</p> <p>§ a large spill of a contaminant into the watershed could be cleaned up and aquatic conditions returned to baseline over time, however the perception of the suitability of water or aquatic life from the water system would likely be affected for a much longer period of time with adverse implications on the consumption of country foods.</p> <p>Please justify and reconsider the requirement of "irreversibility" for making a determination of significance and update the significance determinations, as appropriate, based on this reconsideration.</p> 	The CEA Agency guideline for the determination of significance requires the use of reversibility in the assessment of impacts (Canadian Environmental Assessment Agency. 1994. A Reference Guide for the <i>Canadian Environmental Assessment Act, Determining Whether A Project is Likely to Cause Significant Adverse Environmental Effects</i> , Prepared by the Federal Environmental Assessment Review Office, November 1994. https://www.ceaa-acee.gc.ca/default.asp?lang=En&n=D213D286-1). Both Wabun Tribal Council and IAMGOLD agree that some impacts could theoretically be significant despite being reversible.	None.	n/a

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302	Wabun Tribal Council	<p>WTC-IR#124: Socio-economic Monitoring, Chapter 16, Section 16.4</p> <p>"In addition to the socio-economic monitoring measures presented in Table 16-3, IAMGOLD will develop monitoring programs in consultation with affected stakeholders for the parameters indicated below. Monitoring parameters, monitoring methods, frequency/timeframe and location will be determined and documented in a Socio-Economic/Community Management Plan. " (p.16-2)</p> <p>The development of a community socio-economic monitoring and effects management plan would be a positive step in supporting the enhancement of benefits and the mitigation of impacts for the affected First Nations in relation to the proposed Project.</p> <p>Attached as Appendix "C-1" is a series of charts illustrating the draft socio-economic monitoring program proposed for implementation in the Attawapiskat First Nation (AttFN) in relation to the Victor Diamond Project. This program was based on the Sustainable Livelihoods Framework (SLF) illustrated and described in detail in Appendix "C-2".</p> <p>The SLF is one example among a variety of frameworks for organization socio-economic monitoring information. The SLF encourages community members to participate in gathering and interpreting data, to identify needs for further research, to set priorities for action and to develop new strategies to achieve community goals such as increased economic development, higher incomes, increased social well-being, improved health services and more sustainable use of natural resources. A unique feature of the SLF is its ability to visually illustrate the First Nation "assets" or positive aspects of life in the community, the changes to those assets, and the things that make those assets vulnerable to change.</p> <p>The SLF was considered to be the most preferable approach to addressing the needs and issues of the AttFN because it:</p> <ul style="list-style-type: none"> § can be implemented by organizations within the First Nation itself; § results in important benefits to the community in terms of capacity building through training in data collection/research techniques, and data management § focuses on solving community-wide problems and improving community well-being rather than focusing on analysis of data alone; and § can be understood and communicated easily by community members <p>These materials are provided for further discussion between the First Nations, IAM Gold and potentially also government agencies operating First Nation programs.</p> <p>Please provide any examples of socio-economic monitoring programs in Aboriginal communities that the Proponent believes could inform the development of a similar program in the case of the proposed Project.</p>	<p>IAMGOLD will work with potentially affected Aboriginal groups to develop a socio-economic / community management plan to address potential Project-related socio-economic / community effects identified through the EA process and/or at later stages of the Project.</p> <p>IAMGOLD is of the opinion that it would be more appropriate to work in collaboration with potentially affected Aboriginal groups to develop a socio-economic / community management plan that uniquely reflects potential effects or concerns raised by these communities, rather than provide an example of a socio-economic monitoring program that was suitable in a different context.</p>	None.	n/a

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303	Wabun Tribal Council	<p>WTC-IR#125: Archaeology, Chapter 6, Section 6.5.4.2</p> <p>"To date, through the Stage 1 and 2 studies, a total of 37 archaeological site and features have been located and recorded within the Project property (see Table 6-27). The sites include 18 pre-contact archaeological sites, eleven historic archaeological sites and eight ancient trails and portages." (p.6-129)</p> <p>The number of pre-contact sites suggests the need for considerable involvement of the local First Nations.</p> <p>Please summarize the prior and future involvement of First Nations in the archaeological program, including:</p> <p>a) use of historical and contemporary First Nation land use and occupancy to identify potential areas of high potential;</p> <p>b) involvement of First Nation members or representatives in field work to locate, identify or interpret physical heritage resources;</p> <p>c) consultation to date with First Nations concerning pre-contact and historic sites, as well as the archaeological program more generally;</p> <p>d) any other engagement or involvement with First Nations in relation to the archaeological program; and</p> <p>e) anticipated future role for First Nations</p>	<p>a) A Mattagami First Nation contemporary & historical land use and occupancy study was consulted.</p> <p>b) There was extensive and continuous field involvement of Elders and Band members to assist in identifying areas of high archaeological potential and in testing and excavating sites. In 2012 a First Nations summer student was assisting in the work. In 2012 and 2013 approximately half of the field crew was staffed with First Nation band members. In July 2013 IAMGOLD hosted approximately 20 elders and members of Mattagami First Nation at the Côté Gold Project site to review and consult on archaeological findings to date.</p> <p>c) Section 3.4, standard 2, of the Ministry of Tourism, Culture and Sport Standards & Guidelines requires that Aboriginal communities must be engaged when assessing the value or interest of an Aboriginal archaeological site. Also required is input from Aboriginal communities for the types of Aboriginal archaeological sites prescribed in Section 3.5. Among the types of sites prescribed are rare Aboriginal archaeological sites (standard 1a) Woodland Aboriginal sites (standard 1c) and undisturbed Aboriginal sites (standard 1e). None of the sites discussed in the Côté Gold Project report conform to the general definition of rare Aboriginal sites. However, apart from natural disturbances commonly occurring in the forests of northeastern Ontario, Woodland and other pre-contact sites are by definition undisturbed. Therefore a requirement exists to engage and obtain input from Aboriginal communities regarding the recommended Stage 3 mitigation strategies. This was undertaken via a series of meetings, community presentations, field visits, and a community visit to an excavation at a pre-contact archaeological site.</p> <p>d) Please see b) and c).</p> <p>e) If any additional sites with archaeological potential are identified through construction and/or operation of the Côté Gold Project, then IAMGOLD will notify the First Nations and will employ opportunities for First Nations members to participate in investigations. All artifacts will be transferred to the extent allowed (Ministry of Tourism, Culture and Sport protocols) to the First Nation after analysis has been completed along with a community presentation.</p>	None.	n/a
304	Wabun Tribal Council	<p>WTC-IR#126: Archaeological Potential, Section 9.13 Archaeology</p> <p>"The predictive modelling of the Project study area was carried out using landscape variables to preferentially select those areas with low sloping, well-drained terrain located nearby to modern waters. These variables were applied across the referent landscape to find all of those areas that meet the weighted variables. The final map was used to guide fieldwork activities. The Ministry of Tourism Culture and Sports (MTCS) checklist for archaeological potential was consulted, and returned positive results for archaeological potential within the Project area."</p> <p>The "final map" used to guide fieldwork activities cannot be located in the EIS.</p> <p>Please provide the archaeological potential maps used to guide archaeological fieldwork in the local study area.</p>	<p>This map cannot be provided at this point due to Ministry of Tourism, Culture and Sport requirements and <i>Heritage Act</i> requirements. The provision of this map is not considered relevant to present and understand effects and impacts on archaeological resources.</p>	None.	n/a

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305	Wabun Tribal Council	<p>WTC-IR#127: Archaeology, Appendix R, Section 4.4, p.4-6</p> <p>"All of the sites located with the exception of Rocky Narrows 1 and Chester 6 display significance as they are the first such sites of this antiquity located in the local area. Given the paucity of comparative information, all sites must be considered worthy of additional assessment work (Stage 3 and 4).</p> <p>As the sites are considered significant in both regional and local archaeological contexts, and several of the sites will be impacted by the proposed Project development, additional archaeological resource assessment work is required. All sites listed below exhibited evidence of significant cultural heritage value or interest making all of them candidates for Stage 3 work. The two exceptions were Rocky Narrows 1 and Chester 6 for which no further work is recommended."</p> <p>Rocky Narrows 1 is depicted in Figure 53 and Figure 54 and Chester 6 in Figure 31. Detailed descriptions of these two sites are not provided that would explain why they are considered for Stage 3 assessment work.</p> <p>Please provide further details as to why these two sites are not candidates for Stage 3 work.</p>	<p>Rocky Narrows 1 and Chester 6 did not exhibit evidence of significant cultural heritage value or interest as they did not meet the minimum conditions set out in the Ministry of Tourism, Culture and Sport (MTCS Standards and Guidelines for Consultant Archaeologists (2011). See §2.2.1.a.ii (S&G 2011), and as such Stage 3 work was not required.</p>	None.	n/a
306	Wabun Tribal Council	<p>WTC-IR#128, Archaeology, Appendix R, Table 5-1</p> <p>"It is recommended that a Stage 3 assessment be completed at the following eight pre-contact sites that are of further cultural heritage value or interest and will be impacted by the proposed Project design. These excavations must proceed with the engagement of First Nations.</p> <ul style="list-style-type: none"> ▪ 1. Two Pike Point – CjHI-11 ▪ 2. Côté Lake 1 Site – CjHI-12 ▪ 3. Flat Rock Site – CjHI-2 ▪ 4. Rocky Narrows 2 – CjHI-15 ▪ 5. Chester 1 Site – CjHI-4 ▪ 6. Chester 3 Site – CjHI-5 ▪ 7. Chester 5 Site – CjHI-7 ▪ 8. Bagsverd Creek 1 - CjHI-27" (p.4-6) <p>Based on the information in Table 5-1 and Table 5-2, all but one of excavations listed above have already proceeded.</p> <p>a) Please provide details concerning the engagement of the First Nations in the excavation and any future activities associated with the artefacts, including curation.</p> <p>b) Please indicate where the artefacts are currently being stored and the future plans for these artefacts.</p>	<p>a) A Mattagami First Nation contemporary & historical land use and occupancy study was consulted. There was extensive and continuous field involvement of Elders and Band members to assist in identifying areas of high archaeological potential and in testing and excavating sites. For details on this engagement please refer to Appendix D (RoC).</p> <p>b) Artefacts are currently being stored with the qualified archaeologist who conducted the archaeological studies. All artifacts will be transferred in accordance with Ministry of Tourism, Culture and Sport protocols to the First Nation after analysis has been completed along with a community presentation.</p>	None.	n/a
307	Wabun Tribal Council	<p>WTC-IR#129: Aboriginal Trapping, Chapter 9, Table 9-1</p> <p>Fishing and hunting are identified as indicators for both non-Aboriginal and Aboriginal harvesting. However, trapping is identified as an indicator only in the case of non-Aboriginal harvesting.</p> <p>Please explain why Aboriginal trapping was not selected as an indicator for the environmental effects assessment.</p>	<p>Traditional trapping (Aboriginal) was not selected as an indicator for the environmental effects assessment because no specific traplines or trap areas were identified by Aboriginal peoples during the study. IAMGOLD is not aware of any Aboriginal trapping within the Project site. As such, trapping could not be carried forward in the effects assessment due to lack of information on trapping for traditional purposes.</p>	None.	n/a

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308	Wabun Tribal Council	<p>WTC-IR#130: Traditional Land Use Regional Study Area, Section 9.1.2.3 Regional Study Area; MFN/FPFN TEK/TLUS</p> <p>"Terrestrial Biology for the Site</p> <p>The terrestrial biology regional study area is defined as a 30 km buffer from the boundary of the local study area (see Figure 9-6). This area is large enough to contain all or most individuals that comprise the seasonal and annual populations of American marten, beaver, upland breeding birds, waterbirds and raptors that inhabit the area. The regional study area is expected to be large enough to contain most of the plant populations and communities that may be influenced by the Project and other developments, and to provide confident and ecologically relevant effects predictions on vegetation. At this scale, changes to vegetation and associated wildlife habitat from human development can be also used to predict effects to the abundance and distribution of wildlife populations.</p> <p>Traditional Knowledge and Land Use</p> <p>The traditional knowledge and land use regional study area is defined by potential for effects of the Project on site-specific and nearby traditional land and resource uses such as use or knowledge of culturally important sites. Similar to land use, depending on the type of land or resource use, the study areas for terrestrial or aquatic biology disciplines were used " (see Figures 9-6 to 9-8).</p> <p>The TEK/TLU Study for the MFN and FPFN contains a series of three maps in which a "Regional Study Area" is indicated on the legend that does not appear to be consistent with the terrestrial regional study area illustrated on Figure 9-6 of the EIS.</p> <p>Please reconcile the discrepancies between the regional study areas in the figures in the TLUS and those contained in the EIS.</p>	<p>The TK / TLU study areas were based on Mattagami First Nation and Flying Post First Nation knowledge of the area. The study areas selected for the TLU baseline and effects assessment reflect the area where effects can be predicted.</p> <p>The Mattagami and Flying Post First Nations TLU study was conducted by an independent consultant on behalf of the First Nations. As such, the map of the regional study area which appears in the TLU study report was created as part of that study based on the area(s) identified during the course of study.</p> <p>IAMGOLD used the information provided in the TLU study as well as the EIS study areas in determining the study area definitions. All information contained within the TLU study was carefully considered by IAMGOLD in the identification of potential Project affects and the development of mitigation strategies.</p> <p>IAMGOLD reviewed the sensitive areas provided in the TK / TLU study and, based on the Project Description, determined which of these areas could potentially be affected by the Project. This allowed IAMGOLD to focus the study area of the TK / TLU TSD. It should be noted that study areas generally have the main purpose of focusing baseline data collection, they do not limit the geographic extent of the effects analysis.</p>	None.	n/a
309	Wabun Tribal Council	<p>WTC-IR#131: Traditional Knowledge and Land Use, Section 9.11</p> <p>"The TK/TLU study identified an eagle's nest in the vicinity of the Project. Due to the nest's location and its potential removal, and considering the importance of the eagle in traditional Ojibwe culture, it is understood that this nest may be a concern for the community. Clearing of the area where the eagle's nest is currently located will take place outside of the breeding season. Upon the eagle's return to the area, it is expected that the eagle will either find an equally suitable area to build a new nest or will take over a nearby existing eagle's nest. The local population of eagles will not be affected by the loss of the individual nest. With the exception of the eagle's nest, the Project does not overlap with any other known or reported traditional cultural, spiritual or ceremonial sites in the local or regional study area."</p> <p>It is unclear whether the Proponent understands the cultural importance of the eagle's nest. While the local population of eagles will not be extirpated, the loss of the nest and the habitat losses from the proposed Project will reduce the eagle population locally.</p> <p>a) Please elaborate on the Proponent's understanding of the importance of the eagle in traditional Ojibwe culture.</p> <p>b) Please indicate the Proponent's understanding of the acceptability of the proposed mitigation for traditional Ojibwe culture, namely expecting that the eagle will find a suitable nest elsewhere.</p>	<p>IAMGOLD recognizes an inherent limitation in their understanding of the importance of eagles to Ojibwe culture, but remains open to learning more about, and deepening their understanding of the cultural importance of eagles. However, given the importance of the eagle in the Project area to Mattagami and Flying Post First Nation, IAMGOLD has undertaken additional efforts to evaluate the potential effects to the local eagle population. The biologists conducted aerial surveys in the vicinity of the eagle nest and found numerous other empty nests that could be occupied in the future and abundant habitat where new nests could be constructed.</p> <p>Very few eagles were seen in the area and therefore the habitat is not considered to be saturated with competitors. It is therefore believed that empty nests in the area are available and would not result in displacement of other pairs through competitive interactions for a new nest site.</p> <p>IAMGOLD will consult with Mattagami First Nation and Flying Post First Nation during construction planning on how the removal of the eagle nest can be conducted in a culturally sensitive manner, and will be open to hosting a traditional ceremony (ies) on site should one be requested.</p>	None.	n/a

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310	Wabun Tribal Council	<p>WTC-IR#132: Transmission Line effects on Traditional Hunting, Chapter 9, Section 9.11</p> <p>"The new transmission line alignment corridor may attract non-traditional hunters to hunt in the area that is currently principally used for hunting by the Mattagami First Nation. This could in turn negatively affect traditional hunting. The magnitude of this effect is uncertain." (p.9-64)</p> <p>It is unclear why the magnitude of this effect is uncertain or was not determined.</p> <p>a) Please explain why the magnitude of the effect of the proposed new transmission corridor on Aboriginal hunting could not be determined.</p> <p>b) Please indicate (or provide) the additional information necessary to determine the magnitude of the effect of the proposed transmission corridor on Aboriginal hunting.</p>	<p>In accordance with the EIS guidelines, levels of uncertainties are included in the assessment, where applicable. It should, however, be noted that in Chapter 11, a level of magnitude has been assigned for this potential impact. Therefore, no additional information is required to support the effects prediction for this indicator.</p>	<p>The word "principally" has been removed from the bullet list in Section 9.11.2.2 and Appendix P (Traditional Land and Resource Use TSD).</p>	<p>Section 9.11.2.2, fourth bullet. Appendix P</p>
311	Wabun Tribal Council	<p>WTC-IR#133: Traditional Land Use Monitoring, Chapter 16, Section 16.4</p> <p>"Traditional land uses – monitoring program to be established in collaboration with First Nations and Métis land users as appropriate." (p.16-2)</p> <p>The development and implementation of a program to monitor the effects of the proposed Project on traditional land uses of the affected First Nation would support continued land use in the territory and assist with the implementation of adaptive management measures.</p> <p>Appendix "D" illustrates the traditional land use follow-up program developed collaboratively for the Victor Diamond Project by De Beers Canada, Attawapiskat First Nation and the Government of Canada.</p> <p>These materials are provided for further discussion between the First Nations, IAM Gold and potentially also government agencies operating First Nation programs.</p> <p>Please provide any examples of traditional land use monitoring programs in Aboriginal communities that the Proponent believes could inform the development of a similar program in the case of the proposed Project.</p>	<p>It is IAMGOLD's goal to work collaboratively with the affected Aboriginal communities to identify key aspects of a monitoring program that meets the needs and priorities of the communities and of the Project. Part of that exercise will be to evaluate other monitoring programs and their successes. IAMGOLD will continue to discuss monitoring program with affected Aboriginal communities once the EA has been approved and a decision to construct has been made. If the First Nation communities are interested in exploring collaborative monitoring with regards to the effects of the proposed Project on TLU, IAMGOLD is very much open to pursuing such an activity.</p>	<p>None.</p>	<p>n/a</p>

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312	Wabun Tribal Council	<p>WTC-IR#134: Scope of TK/TLUS, Appendix P, Section 3.1 and Appendix P – Appendix I</p> <p>"No specific concerns were raised about wildlife in the TK/TLUS. The study states that the majority of hunting takes place within other sensitive areas." (p.3-3)</p> <p>"No specific comments or concerns were raised with respect to traditional harvesting of fish within the Project area." (p.3-4)</p> <p>"No specific comments or concerns were raised with respect to canoeing." (p.3-5)</p> <p>"The TK/TLUS does not discuss the importance of, or any specific concerns with the eagle's nest." (p.3-5)</p> <p>The scope of work for the Draft Traditional Land Use and Knowledge Background Study Report was as follows:</p> <p>This Traditional Knowledge and Land Use Background Study Report (the report) provides information on Aboriginal (First Nation and Métis) use of land and resources and Aboriginal knowledge of the environment in the region overlapping with the Côté Gold Project (the Project). This includes information on resources used by Aboriginal people and knowledge of cultural sites or environmental information as provided in publicly available secondary sources. Where available, information gathered from traditional knowledge and land use studies, given under consent, through an information sharing agreement, from Aboriginal communities, is included. (p.1-1)</p> <p>The Data Sharing Agreement between the Proponent and the First Nations, appended to the Background Study Report, indicates the following:</p> <p>Traditional Environmental Knowledge (TEK): For the purposes of this study, Traditional Environmental Knowledge will focus on factual knowledge about the environment and knowledge about its past and present use by the community. This will include (but is not limited to) knowledge about fish, animals, or plants in the study area, their abundance, patterns of use, and other observations. Culturally based value statements and belief systems, if appropriate, will also be documented and used in the environmental assessment, if approved by the First Nation.</p> <p>The TEK/TLUS was an information gathering exercise. It was not an issues scoping study, impact pathway analysis or impacts assessment. The references in the EIS to the lack of comments or concerns about the Project are misleading, as the TEK/TLUS was not designed to gather comments, concerns or other information about potential effects.</p> <p>Please remove from the EIS the references to the lack of comments or concerns in the TEK/TLUS about the potential effects of the Project.</p>	<p>The TK / TLU study was intended to determine if traditional resources and land uses will be affected by the Project and identify ways to protect or mitigate the resources or sites. The Study was also intended to provide information about traditional ecological or environmental information to assist in the identification of effects on biophysical resources in the regional study areas. IAMGOLD prepared the Appendix P (Traditional Land and Resource Use TSD) based on the information provided through engagement efforts with affected First Nations as well as the input from the completed TK / TLU studies. The EA accurately describes the information gathered through the TK / TLU study as well as comments and concerns expressed by Aboriginal groups.</p> <p>IAMGOLD will continue to discuss potential Project effects on traditional activities with potentially affected Aboriginal communities throughout the life the Project. Should additional information regarding an Aboriginal community's traditional practices become available, the Proponent will review and consider any potential effects, and develop and implement necessary mitigation measures, as appropriate.</p>	None.	n/a
313	Wabun Tribal Council	<p>WTC-IR#135: Traditional Land and Resource Use, Appendix P, Section 3.1</p> <p>"The construction of Project components is predicted to overlap with some traditional hunting areas, as described above. It is not expected that this will impede the ability to carry out traditional hunting activities in the area." (p.3-3)</p> <p>"No lakes overprinted by the Project have been identified as popular fishing lakes. Therefore, no traditional fishing area losses will be incurred due to Project construction." (p.3-4)</p> <p>"The Project footprint does not overlap any Sensitive Area lakes identified in the TK/TLUS". (p.3-4)</p> <p>The above conclusions reflect an oversimplified understanding of the interrelationships between the Project components, the biophysical environment and Aboriginal traditional land use.</p> <p>Please explain and justify why a direct overlap between the Project footprint and traditional land use is required in order to conclude that there will be no losses in hunting, trapping or fishing areas.</p>	<p>The Project will result in some displacement of wildlife species from the Project site; however, this displacement is not expected to have long-term effects on wildlife resources available for traditional purposes. The Project will not limit the ability to carry out traditional activities in the area.</p> <p>Appendix L (Wildlife TSD), Appendix M (Terrestrial Biology TSD), and Appendix N (Aquatic Biology TSD) identify the potential effects of the Project on terrestrial and aquatic species.</p> <p>Evaluation of potential effects on traditional activities is based on direct overlap of site components – a quantitative assessment. An evaluation outside of the overlap would be qualitative based on indirect potential effects. Studies conducted as part of the EA process have shown no traditional land and resource uses within the Project footprint. With the implementation of the proposed mitigation measures for wildlife and traditional activities, IAMGOLD does not anticipate any significant impacts outside of the overlap.</p>	None.	n/a

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314	Wabun Tribal Council	<p>WTC-IR#136: Traditional Land and Resource Use - Navigation, Appendix P, Section 3.3</p> <p>"During the operations phase, the Project activities will result in controlled access to the traditional portage route; however, this is not expected to limit the ability to canoe." (p.3-8)</p> <p>In addition to changes to access, the Project will also result in changes to water elevations, annual flows and seasonal flows in many of the neighbouring lakes and creeks.</p> <p>a) Please provide information pertaining to changes in water levels and timing of flows resulting from the Project on all currently navigable watercourses.</p> <p>b) Assess the potential for changes to water elevations or flows that would impede navigation by watercraft, including motorized boats and canoes.</p>	<p>a) Please see Appendix I (Hydrology TSD), in which modelling and prediction of potential effects on surface water flows in relation to the Project are discussed. Project effects are described in Chapter 9 (Section 9.5)</p> <p>b) Effects on navigation are described in detail in Appendix O (Land and Resource Use TSD). The effects are summarized in Section 9.10 of the Amended EIS / Final EA Report. The significance of these effects is assessed in Chapter 11. Effects on TLU are fully described in Appendix P (Traditional Land and Resource Use TSD). The effects are summarized in Section 9.11 of the Amended EIS / Final EA Report. The significance of these effects is assessed in Chapter 11.</p>	None.	n/a
315	Wabun Tribal Council	<p>WTC-IR#137: Traditional Land Use and Resource Use, Appendix P – Appendix II</p> <p>The TLUS makes reference to several additional documents important to understanding the scope of the information requested by the Proponent from the First Nations. These documents are indicated as being attached to the TLUS but were not provided.</p> <p>a) Please provide a copy of the original interview questionnaire provided by AMEC/IAM Gold, indicating how the questionnaire was altered for use in each First Nation community.</p> <p>b) Please provide the outline of deliverables requested by AMEC/IAMGold in relation to the TLUS.</p>	<p>IAMGOLD funded Wabun Tribal Council to hire a consultant to conduct the TK / TLU study. IAMGOLD / AMEC provided interview questions and a list of deliverables to Wabun Tribal Council for use by the selected Study contractor. IAMGOLD and AMEC have not received copies of the final questionnaires that were used in conducting the Study and are not privy to details related to the potential modifications of the questionnaires. The TK / TLU study report was to include information about the study area, background methodology, results and geospatial data.</p>	None.	n/a
316	Wabun Tribal Council	<p>WTC-IR#138: Traditional Land and Resource Use, Appendix P – Appendix II</p> <p>The study indicates that traditional land use information was provided for regions outside the study area.</p> <p>a) Please indicate whether land use information outside the study area was actively sought from participants. If yes, how, and if not, why not?</p> <p>b) Please justify the selection of the study area in terms of First Nation land use across the territory? Why was this particular study area used?</p>	<p>a) IAMGOLD provided funding to the Wabun Tribal Council to hire an experienced consultant who conducted all interviews for the TK / TLU study. Therefore IAMGOLD is not aware of the extent to which land use information outside of the study area was actively sought from participants.</p> <p>b) IAMGOLD provided the regional and local study area (regional study area and local study area) to the consultant selected by Wabun Tribal Council to conduct the TK / TLU study. The regional study area and local study area used for the Appendix P (Traditional Land and Resource Use TSD) are described in Section 2.1, page 2-1. IAMGOLD funded Wabun Tribal Council to hire a consultant to conduct the TK / TLU study. IAMGOLD / AMEC provided interview questions and a list of deliverables to Wabun Tribal Council for use by the selected Study contractor. The TK / TLU study report was to include information about the study area, background methodology, results and geospatial data. However, IAMGOLD did not receive a rationale for the selected study area.</p>	None.	n/a

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317	Wabun Tribal Council	<p>WTC-IR#139: Aboriginal Consultation, Chapter 3, Section 3.3</p> <p>"An important part of the Project permitting and planning process is proactive engagement with Aboriginal communities. This engagement includes ensuring potentially affected Aboriginal communities are informed and engaged in the development of the Project, responding to their interests and concerns, and continuing to build and maintain positive relationships. This has been and is currently being achieved by creating a forum for dialogue and information exchange (verbal and written) and fostering an ongoing relationship between the potentially affected Aboriginal communities and IAMGOLD." (p.3-4)</p> <p>The nature and scope of the consultation delegated to IAMGold by the Crown is not indicated. Please describe the nature and scope of the delegation of any consultation duties to the Proponent by either the Provincial or Federal Crown.</p>	<p>In a letter dated June 7, 2013, the Ministry of Northern Development and Mines directed IAMGOLD to prepare a consultation plan in accordance with subsection 8.1(3)1 of O.Reg. 240/00. The letter identified the Aboriginal communities to be engaged and provided the Draft Guide to Preparing and Implementing a Plan of Consultation. Subsequently, IAMGOLD updated the consultation plan to meet the requirements of the <i>Mining Act</i>. IAMGOLD's responsibility is to:</p> <ul style="list-style-type: none"> ▪ identify and involve interested Aboriginal peoples, throughout the process including those likely to be directly affected and that may be potentially affected; ▪ design and implement an Aboriginal consultation plan as part of the overall EA process; ▪ implement the Crown-delegated procedural aspects of notification and consultation; ▪ initiate meaningful consultation with interested persons to identify information needs and concerns early in the planning process; ▪ provide adequate time and resources for Aboriginal people to review and comment on EA-related materials and documents; ▪ identify issues and concerns received from Aboriginal people; ▪ document that issues and concerns received from Aboriginal people were considered in the preparation of the EA; ▪ address and where possible, resolve concerns raised through the consultation process; and ▪ keep Aboriginal participants informed of decisions made and how IAMGOLD addressed identified concerns or reasons that concerns were not addressed. <p>The Final EIS Guidelines provided to IAMGOLD by the CEA Agency on July 9, 2013 outline Aboriginal consultation requirements in Section 2.3. IAMGOLD is required to ensure that Aboriginal people and groups who may be affected by the Project have access to information required to understand the proposed Project and identify potential impacts on their rights and interests and to "make reasonable efforts" to include traditional Aboriginal knowledge in the assessment of environmental impacts. The Crown assesses the adequacy of consultation with Aboriginal groups, as set out in the Updated Guidelines for Federal Officials to Fulfill the Duty to Consult (2011) and the information gathered throughout the EA process will be used by the Crown to understand potential Project-related impacts on Aboriginal or Treaty rights and related interests (potential or established).</p>	None.	n/a
318	Wabun Tribal Council	<p>WTC-IR#140: IBA Negotiations, Chapter 4, Section 4.3.2.10</p> <p>"The details of IBA negotiations are confidential, as per the agreement of all parties involved, however, generally, the IBA is expected to address:</p> <ul style="list-style-type: none"> ▪ the communities' participation in the Project; ▪ the conduct and inclusion of TK/TLU studies; ▪ participation in environmental studies; and ▪ other financial and non-financial benefits such as employment, training and business opportunities. " (p.4-24) <p>The perspective provided in the EIS concerning the scope of the IBA reflects the views of the Proponent and are not necessarily those of Wabun Tribal Council, Mattagami First Nation, or Flying Post First Nation.</p> 	<p>The Amended EIS / Final EA Report text has been revised to note that it is IAMGOLD's understanding that the components of the impact benefit agreement described in the document reflect IAMGOLD's expectation of the agreement. It has been further revised to include that the components outlined in the document do not necessarily reflect the full scope of the agreement.</p>	None.	n/a

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319	Wabun Tribal Council	<p>WTC-IR#141: Scope of Federal Environmental Assessment for Aboriginal Peoples, Chapter 11, Table 11-3</p> <p>"Impact assessment results for the construction phase of the Project are presented in Table 11-3. With the application of mitigation measures, all physical, biological and human environment impacts have been assessed to be not significant. Indicators and effects that are shaded indicate a link to Section 5 of CEAA 2012."</p> <p>This misunderstands the meaning of section 5(1)(c) of the CEAA 2012. For example, a change in air quality that affects Aboriginal health or the use of the land is relevant under section 5(1)(c) of CEAA 2012. The shading system used in Table 11-3 implies that this change to air quality is not relevant to CEAA 2012. It would be correct to state that the shaded areas indicate a "link to Section 5(1)(a) of CEAA 2012".</p> <p>Please update the text or update Table 11-3 to accurately reflect the requirements of CEAA 2012.</p>	<p>In consultation with the CEA Agency it was agreed that the shading would be removed from the impact assessment matrices. The Amended EIS / Final EA Report has been updated accordingly.</p>	<p>Shading has been removed from Tables ES-3, ES-4, ES-5, ES-6, 11-3, 11-4, 11-5 and 11-6.</p> <p>The following note has been removed from Tables ES-3, ES-4, ES-5, ES-6, 11-3, 11-4, 11-5 and 11-6:</p> <p>"Note: Shaded indicators and effects indicate effects that are linked to Section 5 of CEAA 2012."</p> <p>The following text has been deleted from the Executive Summary and Sections 11.2.1, 11.2.2, 11.2.3 and 11.2.4:</p> <p>"Indicators and effects that are shaded indicate a link to Section 5 of CEAA 2012."</p>	<p>Tables ES-3, ES-4, ES-5, ES-6, 11-3, 11-4, 11-5 and 11-6</p> <p>Executive Summary</p> <p>"Summary of Environmental Effects Assessment, Mitigation Measures and Proposed Significance Determination"</p> <p>Section 11.2.1, 11.2.2, 11.2.3 and 11.2.4</p>
320	Wabun Tribal Council	<p>WTC-IR#142: Cumulative Effects Assessment – Historical Context, Chapter 14, Section 14.1 and CEA Agency Cumulative Effects Assessment Practitioners Guide</p> <p>"The cumulative effects analysis presented herein is therefore focussed on an analysis of cumulative effects on the existing environmental baseline related to identified projects and activities that will be carried out; and to those projects of significance within the broader regional context, which may overlap the undertaking and its effects in regards to type of effect, and in time and space. Accidents and malfunctions are not likely to occur and are therefore not considered further in the assessment of cumulative effects." (p.14-2)</p> <p>The EIS moves to a focus on assessing the cumulative effects of the proposed Project on the existing environmental baseline without significant explanation. The CEA Agency guidance provides several options for establishing the appropriate temporal boundary for the environmental assessment:</p> <p>Each of the following options progresses further back in time:</p> <ul style="list-style-type: none"> ▪ when impacts associated with the proposed action first occurred; ▪ existing conditions; ▪ the time at which a certain land use designation was made (e.g., lease of crown land for the action, establishment of a park); ▪ the point in time at which effects similar to those of concern first occurred; or ▪ a past point in time representative of desired regional land use conditions or pre-disturbance conditions (i.e., the "historical baseline"), especially if the assessment includes determining to what degree later actions have affected the environment. <p>During the recent information session in Mattagami First Nation, members raised concerns about the extent of existing development in the territory and that there are limits to the amount of development that can be tolerated before cumulative effects become too extreme.</p> <p>It is unclear why the Proponent did not consider an earlier baseline (e.g. the start of mining in the territory or a point in time prior to any development in the territory) in conducting the cumulative effects assessment.</p> <p>Please justify the selection of a temporal baseline for cumulative effects assessment based on existing conditions.</p>	<p>No other industrial scale mining has been carried out in the Project area. Therefore there are no known historic effects on the physical and biological environment in this area.</p> <p>The area has a history of forestry and Chapter 14 does consider past and future forestry activities. The cumulative effects analysis for forestry operations focussed on the biological regional study area as this was deemed to be the proper geographic extent for potential cumulative effects resulting from forestry operations.</p> <p>Forestry operations have been commonplace in the region within the recent past and this is reflected by the forest structure as many forest communities within the biological regional study area are second-growth forests. At present logging operations emulate natural disturbance patterns, such that the forest communities have adapted to disturbance from logging and subsequent succession. Given this natural adaptation, forestry operations are not anticipated to result in noticeable cumulative environmental effects with the Project.</p> <p>Considering the information above IAMGOLD feels that the temporal boundaries for the cumulative effects assessment have been appropriately defined for the EA.</p>	<p>None.</p>	<p>n/a</p>

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321	Wabun Tribal Council	<p>WTC-IR#143: Aboriginal Comments and Concerns, Appendix B, Appendix B-2, #74, 206 and Sections 4.0; 9.3; Appendices D and F to T</p> <p>"Indicate to whom these concerns are important and the reasons why, including Aboriginal, social, economic, recreational, and aesthetic considerations.</p> <p>...describe, from the perspective of the proponent, the potential adverse impacts on potential or established Aboriginal and Treaty rights and related interests that have not been fully mitigated as part of the environmental assessment and associated consultations with Aboriginal groups."</p> <p>An Aboriginal issues tracking table cannot be located in the EIS.</p> <p>Please provide an Aboriginal issues tracking table for each potentially affected Aboriginal group, including the issues raised organized by valued component, how the issue has been addressed to date by IAMGold or the Crown, and any outstanding issues.</p>	<p>Chapter 4 and Appendix D (RoC) describe the comments raised throughout the EA process by Aboriginal group and issue raised. The EA concludes that with effects management measures in place, there will be no significant impacts. In addition, each section in Chapter 9 includes detailed responses to key concerns and issues raised during the consultation process. IAMGOLD therefore considers the EA fully compliant with the EIS guideline requirements.</p>	None.	n/a
322	Wabun Tribal Council	<p>WTC-IR#144: Information from Aboriginal Groups, Appendix B, Appendix B-2, #139</p> <p>"The proponent will hold meetings and facilitate these by making key EA summary documents (baseline studies, EIS and key findings) accessible and making plain language summaries of these documents available to the following groups:</p> <ul style="list-style-type: none"> ▪ Mattagami First Nation; ▪ Flying Post First Nation; ▪ Brunswick House First Nation; and ▪ Métis Nation of Ontario, Region 3. <p>The proponent will describe all efforts, successful or not, taken to solicit the information required to prepare the EIS."</p> <p>The EIS indicates in several locations isolated instances of efforts it has made to solicit information from Aboriginal groups to prepare the EIS. It is unclear whether these represent all efforts, successful or not.</p> <p>Please confirm that the EIS describes all efforts, successful or not, taken to solicit the information required to prepare the EIS.</p>	<p>The EA documents all efforts to solicit information that was used directly in the preparation of the EA. In addition IAMGOLD has a full-time community relations liaison who actively engages and coordinates with these communities to prepare and establish opportunities for information sharing and consultation on the EA.</p>	None.	n/a

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323	Wabun Tribal Council	<p>WTC-IR#145: Aboriginal Rights and Treaty Rights, Appendix B, Appendix B-2, #143 to #149</p> <p>"At a minimum, the EIS will summarize available information on the potential or established Aboriginal and Treaty rights and related interests of the named Aboriginal groups that have the potential to be adversely impacted by the project.</p> <ul style="list-style-type: none"> ▪ Background information and a map of the group's traditional territory; ▪ A summary of engagement activities conducted prior to the submission of the EIS, including the date and means of engagement (e.g., meeting, mail, telephone); ▪ Information on each group's potential or established rights (including geographical extent, nature, frequency, timing), including maps and data sets when this information is provided by a group to the proponent; ▪ An overview of key comments and concerns provided by each group to the proponent; ▪ Responses provided by government and/or the proponent, as appropriate; ▪ Future planned engagement activities; and ▪ Efforts undertaken to engage with Aboriginal groups as part of developing the information identified above." <p>The information provided in the EIS has not addressed the requirements of the EIS Guidelines, particularly in relation to Aboriginal and Treaty Rights and key comments and concerns. To assist the Proponent, a recent example of the expected information concerning these matters for another environmental assessment is provided as Appendix "E-1".</p> <p>Please provide the information required in the EIS Guidelines respecting Aboriginal and Treaty Rights as well as Aboriginal comments and concerns for each Aboriginal group.</p> 	<p>Treaty rights are described in Appendix D-1 (RoC). Some of this information has been included in Section 3.3 of the EA.</p> <p>The consultation chapter (Chapter 4) has been revised to more clearly present key comments and concerns.</p>	Revision of Chapter 4 to more clearly present key comments and concerns.	Chapter 4
324	Wabun Tribal Council	<p>WTC-IR#146: Aboriginal Rights and Treaty Rights, Appendix B, Appendix B-2, #175, #177, #189</p> <p>"The EIS will describe, from the perspective of the proponent, the potential adverse impacts of the project on the ability of Aboriginal peoples to exercise the potential or established Aboriginal and Treaty rights and related interests identified in section 9.2.</p> <p>The assessment of the potential adverse impacts of each of the project components and physical activities, in all phases, will be based on a comparison of the exercise of the identified rights between the predicted future conditions with the project and the predicted future conditions without the project. It is recommended that the impact matrix methodology described in section 10.1.1 be adapted for this purpose.</p> <p>This section will describe, from the perspective of the proponent, the measures identified to mitigate the potential adverse impacts of the project described in section 10.2 on the potential or established Aboriginal and Treaty rights and related interests identified in section 9.2. These measures will be written as specific commitments that clearly describe how the proponent intends to implement them."</p> <p>The information provided in the EIS has not addressed the requirements of the EIS Guidelines, particularly in relation to impacts to Aboriginal and Treaty Rights and key comments and concerns. No impact matrix or mitigation measures specific to each Aboriginal group can be located in the EIS. To assist the Proponent, a recent example of the expected information concerning these matters for another environmental assessment is provided as Appendix "E-2".</p> <p>Please provide the information required in the EIS Guidelines respecting impacts to Aboriginal and Treaty Rights as well as Aboriginal comments and concerns for each Aboriginal group.</p>	<p>The EA is consistent with the EA Guidelines' Section 9-2 in that effects on Aboriginal groups are described and, where appropriate, mitigation measures are identified. Impacts have been assessed inclusive of all potentially affected Aboriginal groups and their treaty rights.</p>	None.	n/a

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325	MOECC - Environmental Monitoring and Reporting Branch - Air	In addition to these documents, EMRB also reviewed the air dispersion modelling files for the Air Quality Assessment that were provided (dated June 23rd, 2014). These were assumed to apply to both the Ambient Air Quality Assessment (i.e. comparison to AAQCs) and the O.Reg.419/05 Ontario Compliance Assessment (OCA). However, only a single set of model files were provided, so it is not clear as to whether a separate modelling assessment was undertaken for O.Reg.419/05 OCA compliance, but not provided.	Dispersion modelling was completed for both comparison with AAQCs and for O.Reg.419 compliance assessment. The O.Reg.419 dispersion modelling input and output files will be provided as a component of the ECA application package.	None.	n/a
326	MOECC - Environmental Monitoring and Reporting Branch - Air	The report does not provide a process description to thoroughly describe the rates and extent of the processes that are occurring on site. As a result, the report lacks sufficient detail on the types, activity levels and specific locations of emission sources. Additional details and process descriptions are required to assess whether all significant emission sources were included in the dispersion modelling assessment, that they were appropriately located on the site, and appropriately characterized in the air dispersion model (i.e. stack temperature, stack heights/pile heights, flow rates, etc).	The Air Quality Assessment was prepared in support of the EA; the EA document contains extensive details of the proposed mining activities, ore processing, and ancillary activities. This assessment has been prepared based upon conservative maximum forecast ore processing, material movement, and material usage rates; however specific details such as stack location and exhaust gas parameters not yet been defined at this early stage of the Project. The specifics of each individual source will be detailed in the Emission Summary and Dispersion Modelling Report that will accompany the application for an ECA.	None.	n/a
327	MOECC - Environmental Monitoring and Reporting Branch - Air	The emissions data presented in Tables 5-2 and 5-4 are the same for all contaminants, even though the report notes that the emissions in 5-4 only include sources to be considered for O.Reg.419/05 compliance. As such, it would be expected that for some species such as TSP, PM ₁₀ , PM _{2.5} , NO _x , CO, and others, modelled emissions would be lower for the O.Reg.419/05 scenario. A table that shows which sources and emissions were excluded would be helpful. Please clarify this discrepancy and provide any supporting information used in the assessment.	The maximum emission rates cited in Table 5-2 and 5-4 include all sources, and do not distinguish between the sources included in the dispersion modelling scenarios for AAQC comparison or O.Reg. 419/05 compliance. A table identifying which sources were considered for each of these two modelling scenarios has been provided in the Addendum.	An Addendum to Appendix F (Air Quality TSD) has been prepared which includes a table identifying sources considered in various modelling scenarios.	Addendum to Appendix F
328	MOECC - Environmental Monitoring and Reporting Branch - Air	The emissions calculations in Appendices II and III provide sample calculations for different types of emission sources, but do not provide sufficient detail to illustrate how emissions from multiple sources were apportioned into a single modelled source. This is necessary to be able to trace the sample emissions from the tables to the model input files, in order to verify the model inputs. One example is the calculation of NO _x (or NO ₂) emissions from the open pit. Sources of NO _x include blasting, vehicle exhaust etc. While the emissions shown in the emission summary table can be summed for the PIT sources, a sample calculation should be provided for at least one contaminant (such as NO _x) to clearly provide traceability to the emission rate in the model input files (in g/m ² /s) for the PIT. Therefore: Where multiple emission sources are lumped into a single model source, the report (or Appendix) should contain a table that clearly shows which emissions have been included in specific model sources.	Since there were aggregate sources in the dispersion modelling setup, Table A3: Source Summary - Emissions (g/s) included a column entitled ModelID to identify which Source in the dispersion modelling input file included each individual emission source from the mining activities or from the processing plant. For example, the source identified in the modelling as OPIT included the following emissions sources: <ul style="list-style-type: none"> ▪ drilling; ▪ blasting; ▪ loading haul trucks by shovel; ▪ haul truck movements inside open pit; and ▪ dozers and graders inside open pit. 	None.	n/a
329	MOECC - Environmental Monitoring and Reporting Branch - Air	The model files indicate that the emissions were varied for some hours of the day. Neither the report nor the appendices discuss the derivation of how these hourly variations in the emissions are modelled (i.e. likely due to blasting). Sample calculations showing the determination of the hourly scaling factors used in the dispersion modelling inputs should be provided for each contaminant.	Variable emissions by time-of-day were used in order to include one hour of blasting between 1PM and 2PM. All sources were considered to be operating at activity levels corresponding to the maximum emission scenario during all hours, with the exception of the one hour per day when blasting was carried out in the open pit. During this hour, all mining activity in the Pit was suspended for 1 hour, and resumed at 2PM. A sample calculation of the determination of scaling factors has been provided in the Addendum.	An Addendum to Appendix F (Air Quality TSD) has been prepared which includes a sample calculation for determination of scaling factors.	Addendum to Appendix F

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330	MOECC - Environmental Monitoring and Reporting Branch - Air	<p>Page 5-2 of the report states that "...in order to compare to the ambient NO₂ standard, the model was run using the appropriate U.S. EPA NO to NO₂ atmospheric chemistry algorithms." There are several options available for this within the AERMOD model (i.e. ozone limiting method (OLM), plume volume molar ratio method (PVMRM), and ambient ratio method (ARM)), but the method of choice and rationale for the choice was not provided in the report. The AERMOD model files indicate that the OLM method was used, with seasonal, hourly varying ozone concentrations. These ozone concentrations and their source were not presented or discussed in the report. Please provide additional details on the use of the ozone limiting method, and any supporting data or assumptions used for this purpose (i.e. ozone concentrations, rationale for initial NO/NO₂ fractions in the emissions, etc). In addition, all of the supporting information and assumptions should be provided in the report or the appendix, since most readers will not have access to the air dispersion modelling files.</p> <p>The dispersion modelling input files indicate that a single in-stack NO₂:NO_x ratio was used to characterize all NO_x emission sources from the Project. Given that these sources represent a diverse range of emission characteristics (i.e. NO_x from blasting, NO_x in vehicle exhaust, etc.) it is unlikely that this is the same for all of these source types. Further detail is required to demonstrate that the use of a single NO/NO₂ split to characterize all site sources is reasonable. Table 5-4 indicates that the concentrations shown are NO_x (as NO₂). Please clarify whether these concentrations represent total NO_x mathematically expressed as NO₂ concentrations or whether they represent NO₂ only. Compliance with O.Reg.419/05 generally requires that these concentrations represent total NO_x. As such, it is not appropriate to use the OLM to predict concentrations of NO₂ for this comparison. Please clarify whether the OLM was used for these concentrations. (Please note that separate model files/runs for O.Reg.419/05 compliance were not provided so it is not clear whether different model runs were completed for these comparisons).</p>	<p>Rationale for Selecting Ozone-Limiting Method</p> <p>The ozone limiting method was selected as most appropriate for this dispersion modelling assessment which consisted of primarily area sources. The plume volume molar ratio method is better suited for isolated point sources.</p> <p>Ozone Concentration Data:</p> <p>The required inputs for the ozone limiting method include ozone concentrations, meteorological data, and the in-stack NO₂ / NO_x. The ozone concentrations measured at Sudbury in 2012 were used as the model input, obtained from the MOECC Air Quality Ontario database; the Sudbury air monitoring station is located approximately 135 kilometres southeast of the Project. Data closer to the site were not available.</p> <p>NO₂ / NO_x Ratio Selection:</p> <p>Currently there is not one widely accepted repository of NO₂ / NO_x data available, and limited data available through a United States Environmental Protection Agency data repository (mainly for IC reciprocating engines). In the absence of readily available and reliable data on in stack NO₂ / NO_x ratios, an equilibrium ratio of 0.9 and an in stack ratio of 0.1 were considered reasonable for all sources.</p> <p>For the most significant source of NO₂, the ammonium nitrate / fuel oil blasting, one published study suggests a NO:NO₂ ratio of 27.5:1; this would equate to an NO₂ / NO_x ratio of 0.036 . Use of an NO₂ / NO_x ratio of 0.1 would be conservative in comparison. For trucks and cars, a ratio of 0.06 is recommended by the San Joachim Valley Air Pollution Control District; this is again less conservative than the 0.1 ratio used for this assessment.</p> <p>NO_x for Assessment Against O.Reg. 419 Standards:</p> <p>The emission rates and dispersion modelling output presented in Table 5-4 for the dispersion modelling completed for assessment against the O.Reg. 419 standards, are for NO_x, as NO₂.</p> <p>There was no conversion of NO to NO₂ incorporated into the O.Reg. 419 model runs; total NO_x is modelled as required for demonstrating O.Reg. 419 compliance.</p> <p>The input and output files for the O.Reg. 419/05 runs will be provided as part of the ECA application package.</p>	None.	n/a
331	MOECC - Environmental Monitoring and Reporting Branch - Air	It is not clear whether the concentration isopleths shown in Figures 7 – 15 pertain to the Ambient Air Quality scenario (i.e. for comparison to AAQCs) or whether they pertain to the O.Reg.419/05 compliance scenario. This is an important distinction which should be clearly illustrated on the figures, since the report noted that the emissions included in each scenario were supposed to differ.	Figures 7 to 15 pertain to the AAQC scenario (comparison of modelled effects to AAQC).	None.	n/a
332	MOECC - Environmental Monitoring and Reporting Branch - Air	Based on the information in the report and air dispersion model files it is unclear as to whether Emergency Diesel Generator (EDG) testing was included in the air dispersion modelling. EDG testing can significantly contribute to short term NO _x /NO ₂ concentrations and as such should be considered cumulatively with other on-site sources to illustrate that the facility can meet the appropriate limits during EDG testing. Provide further details as to how this source was included in the modelling. If it has been excluded, this could have implications on subsequent assessments that use the resulting modelled data, such as the HHERA.	The dispersion modelling assessment included the operation of one of the largest of the five diesel generators and the fire pump as part of the maximum emission scenario, which would be consistent with a maximum generator testing scenario. The units are not tested at the same time.	None.	n/a
333	MOECC - Environmental Monitoring and Reporting Branch - Air	The report does not note which version of the AERMOD model was used in the assessment. The AERMOD model output files indicate that AERMOD version 12345 was used in the assessment. It should be noted that the current regulatory version for compliance assessment with O.Reg.419/05 is 06341 and as such a s.7 request to use an alternate model would be required as part of the ECA application.	This comment is acknowledged and a Section 7 request will be filed as part of the ECA application process.	None.	n/a

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334	MOECC - Environmental Monitoring and Reporting Branch - Air	<p>The report notes that the meteorological data supplied to AMEC included precipitation. This is typically used to include wet and dry deposition in the air dispersion modelling, which was used according to the information in the model input files. The report makes no mention of this however, and does not provide any information or rationale for the selection of the assumed particle size distribution, etc. Please clarify this in the report and provide any necessary supporting assumptions.</p> <p>In addition, although the meteorological data used in this assessment was provided by MOE EMRB and includes parameters for depletion assessments; use of wet and dry depletion is a non-default option. Note that EMRB approval is required under O.Reg.419/05 for use of non-default options. It is not clear as to whether the maximum POI concentrations shown in Table 5-4 for compliance with O.Reg.419/05 include the use of wet and dry depletion. Separate model files for these scenarios were not provided. Please clarify whether this option was used, and if wet/dry depletion was considered provide revised tables without the use of depletion.</p>	<p>A summary of the particle size distributions and particle density input data is included with the Addendum. Wet or dry plume depletion was not enabled for the O.Reg. 419/05 modelling assessment; these removal mechanisms were not included in the dispersion calculations when comparing against the Schedule 3 standards. The results used to compare against the AAQCs did include plume depletion to provide a more accurate estimate of impacts.</p>	An Addendum to Appendix F (Air Quality TSD) has been prepared which includes particle size distributions and particle density input data.	Addendum to Appendix F
335	MOECC - Environmental Monitoring and Reporting Branch - Air	<p>The report does not provide a model source diagram that clearly shows the source layout, locations, sizes, etc. While this can be found using the model input files, this information should be provided in the report to provide a representation of how the emission sources were considered, with a corresponding table to show which specific emission sources were included in the modelled sources.</p> <p>The source layout constructed from the model input files appears to indicate that only certain on-site roads were considered in the modelling assessment. The main access road to/from the site does not appear to have been considered in the assessment. The report provides no details on the amount of traffic on this roadway, which would likely be used to ship materials to and from the site, and as such can be a significant contributor to site wide emissions. Please provide further details on this source (i.e. vehicle activity per hour/day) and relative emissions compared to other on-site sources.</p>	<p>The emission sources considered in the dispersion modelling assessment are presented graphically in Figure 6, which shows the open pit source, two volume sources (ore processing plant and concrete batch plant), three area sources (material handling), and four line area sources (haul roads).</p> <p>The main access road was determined to be an insignificant source of road dust and tailpipe emissions when compared to the site haul roads. The traffic volumes on the access road are significantly lower than those of the haul roads.</p> <p>During the construction phase when traffic volumes on the main site access road would be highest, a total of 8 round trips per day along this road are predicted; this compares to 5 round trips per hour along site haul roads. The maximum emission scenario modelled for the operations phase considered a total of 70 round trips per hour of the mining haul trucks.</p>	None.	n/a
336	MOECC - Environmental Monitoring and Reporting Branch - Air	<p>The assessment considered a nested receptor grid; however two different sets of model files were provided for NO_x/NO₂. The first file referenced the maximum concentrations shown in Table 5-2, but the grid used only appears to encompass areas to the north of the site. The second model file for NO₂ used a full grid, but the model results differ from those shown in the report. Please clarify the difference between the two different model scenarios, and the reasons/rationale for the discrepancy in the receptor grids.</p> <p>Note that for the purposes of compliance with O.Reg.419/05 a full nested receptor grid as described in the regulation must be used unless prior approval is obtained from EMRB.</p>	<p>This comment is acknowledged; the dispersion modelling conducted for the Emission Summary Dispersion Modelling Report in support of the application for an ECA will be done using a receptor grid which conforms to the requirements of the Air Dispersion Modelling Guideline for Ontario (March 2009), and the requirements under Section 14(1) of Regulation 419/05.</p>	None.	n/a
337	MOECC - Environmental Monitoring and Reporting Branch - Air	<p>The predicted air concentrations shown in Table 5-2 and 5-3 are consistent with those shown in Tables 1, 2 and 3 of the HHERA. It is however important to note that these concentrations do not include a background contribution suggesting that background contributions were not likely considered in the HHERA.</p>	<p>The HEHRA considered two pathways, soil deposition and inhalation.</p> <p>The HEHRA already considers background soil concentrations, therefore it is not necessary to include background contributions in the dispersion modelling for the quantification of deposition.</p> <p>In terms of inhalation, the background concentrations and modelled concentrations have been provided to the HEHRA to allow for consideration of the potential cumulative effects.</p>	The air dispersion and depositional modeling has been revised to account for background air quality concentrations and provided in the Addendum to Appendix W (HEHRA).	Addendum to Appendix W
338	MOECC - Environmental Approvals Branch - Wastewater	<p>The Draft EA report has identified the preferred alternative for development of the open pit gold mine and associated processing and support facilities, including an Open Pit, an Ore Processing Plant, a Tailings Management Facility, a Mine Rock Area, Linear Infrastructure including a transmission line, Water Management Facilities including drainage works, pipelines and water management ponds, and supporting infrastructure that includes an accommodation camp for workers. The approach used in the EA report to identify the best alternatives for developing specific Project components is reasonable.</p>	<p>You comment has been noted. No change to the EA is required.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
339	MOECC - Environmental Approvals Branch - Wastewater	Receiver-based, site-specific effluent discharge criteria as well as acceptability of all discharge locations would have to be established in consultation with the Ministry's Technical Support Section (Tech Support), Northern Region and evidence of acceptance provided with the application for approval of Sewage Works.	Your comment has been noted and will be incorporated in the application of Sewage Works. No change to the EA is required.	None.	n/a
340	MOECC - Environmental Approvals Branch - Wastewater	Evidence of acceptance of all proposed surface water and ground water monitoring programs by the Technical Support Section would have to be provided at the time of application for approval of Sewage Works.	Your comment has been noted and will be incorporated in the application of Sewage Works. No change to the EA is required.	None.	n/a
341	MOECC - Environmental Approvals Branch - Wastewater	<p>The application for Sewage Works would have to include a design brief that presents details of the final design of the Sewage Works, including (but not necessarily limited to):</p> <ul style="list-style-type: none"> ▪ description of the proposed project and associated sewage works; ▪ mine site hydrology and water management strategy (water balance, dewatering flow management); ▪ detailed description of the stormwater management works to service waste rock areas and potentially contaminated stormwater (geochemical characterization of waste rock); ▪ predictive models of surface and groundwater quality including the following: trace metal analysis, acid generating potential – Acid Base Accounting (ABA), metal leaching potential – Net Acid Generation (NAG), short term leach testing (lab test and/or pilot/scale testing results); ▪ Tailings management facility design including: volumetric capacity, spillway design, dam crest elevations clearly noting the Environmental Design Flow (EDF) and the Probable Maximum Flood (PMF) ▪ Ministry's Tech Support accepted effluent quality criteria (objectives, limits and monitoring requirements for surface and groundwater), along with comparison of effluent criteria and monitoring requirements with requirements under the federal Metal Mining Effluent Regulation (MMER), and MISA requirements; ▪ detailed description of the discharge treatment system and identification of process design parameters; ▪ detailed process design and sizing calculations for all major processes; ▪ hydraulic calculations for all process streams within sewage works; ▪ product information details of the type of explosive(s), boosters, igniters etc. to be used in the mine blasting operations to determine presence or absence of Dinitrotoluene (2, 4 Dinitrotoluene and 2, 6 Dinitrotoluene) ▪ overview of contingency planning measures for the proposed facilities in the event of emergencies and spills and/or berm/dyke failure, i.e. the Spill Contingency Plan and the Emergency Response Plan; and ▪ cooling water effluent stream(s) and treatment requirements. 	Your comment has been noted and will be incorporated in the application of Sewage Works. No change to the EA is required.	None.	n/a
342	MOECC - Environmental Approvals Branch - Wastewater	Record of consultation with aboriginal communities summarizing any technical or environmental issues noted as a result of the consultation efforts and how those issues have been addressed would have to be provided along with a list of contact persons (chief, council and other as appropriate) for each Aboriginal community including names, mailing address, e-mail, phone and fax.	Your comment has been noted and will be incorporated in the application of Sewage Works. No change to the EA is required.	None.	n/a

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343	MOECC - Environmental Approvals Branch - Wastewater	Proof of continued public and stakeholder consultation and engagement including Aboriginal groups would have to be provided.	Your comment has been noted and will be incorporated in the application of Sewage Works. No change to the EA is required.	None.	n/a
344	MOECC - Environmental Approvals Branch - Wastewater	Evidence of filing of the mine's Closure Plan with Ministry of Northern Development & Mines and a copy of the Closure Plan would have to be provided. If closure plan not filed at the time of Sewage Works approval application, the status of closure plan development and record of consultation with aboriginal groups for the closure plan would have to be provided.	Your comment has been noted and will be incorporated in the application of Sewage Works. No change to the EA is required.	None.	n/a
345	MOECC - Environmental Approvals Branch - Wastewater	Clearances obtained from local municipalities and other regulatory agencies as applicable, e.g. municipal Source Water Protection consultation would have to be provided.	Your comment has been noted and will be incorporated in the application of Sewage Works. No change to the EA is required.	None.	n/a
346	MOECC - Environmental Approvals Branch - Wastewater	It is noted that agreed on effluent discharge limits and monitoring requirements established with the Ministry do not exempt the applicant from fulfilling their obligations under O. Reg. 560/94 Effluent Monitoring and Effluent Limits – Metal Mining Sector or the federal Metal Mining Effluent Regulation.	Your comment has been noted and will be incorporated into future permit applications.	None.	n/a
347	MOECC - Environmental Approvals Branch - Wastewater	With respect to design information provided in the Draft EA, it is specified that an Effluent Treatment Plant for treatment of excess water from the proposed Polishing Pond to Bagsverd Creek may be provided if required. This would have to be evaluated very carefully as effluent discharge criteria are established. The Effluent Treatment Plant would have to be included in the Sewage Works if deemed necessary after the evaluation.	Your comment has been noted and will be incorporated in the application of Sewage Works. No change to the EA is required.	None.	n/a
348	MOECC - Environmental Approvals Branch - Wastewater	It is recommended that an overall plan showing the location of all tailings management facility alternatives be included in the Knight Piesold's Tailings Management Facility Alternatives Assessment Report (Appendix U3).	The locations that were assessed in detail are shown in Figure 1.2 of Appendix U3	None.	n/a
349	MOECC - Environmental Approvals Branch - Wastewater	It is expected that the above sewage works related issues will be addressed as part of the detailed pre-application consultation with the Ministry (including Environmental Approvals Branch, Sudbury Regional Office and Northern Region Technical Support Section).	Your comment has been noted and will be incorporated in the application of Sewage Works. No change to the EA is required.	None.	n/a
350	Ministry of Natural Resources and Forestry - Timmins District	Page ES-3, 2nd Paragraph The construction of the TMF will affect the flows of two streams that flow into Mesomikenda Lake and have the potential to affect potential Northern Pike spawning habitat. What studies, if any, were done in these potential areas to identify habitat? MNR staff has noted spawning behaviour in these areas.	Baseline data for hydrology is summarized in Section 6.3.6, water quality in Section 6.3.7, aquatic biology in Section 6.4.8. The effects are described in Chapter 9 and the impacts assessed in Chapter 11. Appendix I (Hydrology TSD), Appendix J (Water Quality TSD) and Appendix N (Aquatic Biology TSD) fully describe the studies carried out on hydrology, water quality and aquatic biology respectively.	None.	n/a
351	Ministry of Natural Resources and Forestry - Timmins District	Page ES-3, 4th Paragraph What are the measurements that are being implemented to minimize solid wastes; will this expansion be seen in the lifetime of the mine? Once opportunities to recycle hazardous waste are investigated, will they be implemented?	Solid and domestic waste management is presented in Section 5.14. IAMGOLD's recycling program will be expanded to the Project to reduce wastes. Should recycling of some hazardous wastes, such as used oil, prove valuable and cost-effective, IAMGOLD will consider implementing this for the Project.	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
352	Ministry of Natural Resources and Forestry - Timmins District	Page ES-6, 3rd Paragraph The executive summary speaks to impacts to Three Duck Lakes and Clam Lake. These lakes are not discussed in your compensation package. Please explain.	Effects on flow, water and loss of fish habitat have been fully considered in the EA and are described in Chapters 9, 10 and 11 and, in full detail in Appendix I (Hydrology TSD), Appendix J (Water Quality TSD) and Appendix N (Aquatic Biology TSD) respectively.	None.	n/a
353	Ministry of Natural Resources and Forestry - Timmins District	Figure ES-2 A potential discharge location is noted at the northern most portion of Figure ES-2. Where will the pipe be located leading to the discharge location? Will this pipeline be built above or below ground?	The pipeline will be routed from the north end of the polishing pond to the discharge location. This will be an above-ground pipeline. The exact alignment will be determined during feasibility studies.	None.	n/a
354	Ministry of Natural Resources and Forestry - Timmins District	Figure ES-2 How will the realignment of Bagsverd Creek be crossed by the tailings pipeline? What measures will be in place for any pipeline failures?	It is currently foreseen that the tailings pipeline will cross Bagsverd Creek via a trussed bridge-type structure. The tailings pipeline double-lined / double-walled with pressure and flow sensors. The pipeline would be designed such there would be catchment basins which would provide secondary containment.	None.	n/a
355	Ministry of Natural Resources and Forestry - Timmins District	Figure ES-2 How is outflow being monitored at the north end of the site?	It is assumed that this question is referring to how effluent discharged from the polishing pond (i.e., outflow) to the receiving water will be monitored. As for all Ontario mine sites, effluent monitoring will be conducted in accordance with the Federal Metal Mining Effluent Regulations (MMER) and O.Reg. 560/94, (as amended) which stipulates Effluent Monitoring and Effluent Limits for the Metal Mining Sector, and any additional conditions that may be defined under the future ECA to be issued by the MOECC, all of which specify water quality parameters and frequencies, as well as flow monitoring to within plus / minus 15% accuracy. Since the effluent will be discharged by pipeline, water quality samples are foreseen to be collected from a sampling port on the discharge pipeline, near the polishing pond, while flows will likely be measured using a totalizer.	None.	n/a
356	Ministry of Natural Resources and Forestry - Timmins District	Figure ES-2/ Page ES-3, Map/2nd Paragraph What is the predicted volume of water to be taken from Mesomikenda Lake by season? How will impacts to spawning be mitigated? Please discuss the notion of a "seasonal need for fresh water make-up (from Mesomikenda Lake)."	Mitigation measures to protect aquatic species are described in Chapter 10. Note that there are no anticipated impacts on spawning activity in Mesomikenda Lake (see Chapter 11 and Appendix N, Aquatic Biology TSD, for full details.) The maximum freshwater removal rate will be determined during the Permit to Take Water application phase, but is not expected to exceed 20% of the ore processing plant demand (approximately 55,000 m ³ /day) plus an allowance for potable water, fire storage and truck washing (to be determined). For current purposes, the sensitivity of the lake response to climate and water removal are described in the Addendum to Appendix I (Hydrology TSD). The following statements in the Project Description have been replaced to state: Although at this time the freshwater removal rate is not expected to be greater than 20% of the process water demand at the ore processing plant, the maximum freshwater removal rate will be determined during the Permit to Take Water application phase. Freshwater will be taken in accordance with conditions associated with the Permit to Take Water, when approved. The water removal is intended to supplement recycled site water and provide for truck washing, potable and fire reserve requirements.	The following sentence has been deleted: "This uptake would not exceed 20% of the daily flow, and would occur seasonally when sufficient flow is available." A new paragraph has been added with the following text: "Although at this time the freshwater removal rate is not expected to be greater than 20% of the process water demand at the ore processing plant, the maximum freshwater removal rate will be determined during the Permit to Take Water application phase. Freshwater will be taken in accordance with conditions associated with the Permit to Take Water, when approved. The water removal is intended to supplement recycled site water and provide for truck washing, potable and fire reserve requirements."	Section 5.10.2

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357	Ministry of Natural Resources and Forestry - Timmins District	Figure ES-2 Blasting at a mine in the North East Ontario, on similar geological make-up, has caused eutrophication and algae blooms on lakes on the downwind side. Please explain how you plan to control dust, nitrogen and nitrates from entering Mesomikenda Lake.	Significant water quality modelling has been completed (see Appendix J; Water Quality TSD). Also a detailed water balance has been developed to minimize discharge volumes, see Section 5.10 of the EA report. A detailed dust mitigation system will be employed at the Project site, as described in Chapter 10 of the EA report. Overall the assessment demonstrates that there will be no significant impact on water quality in receiving waters due to dust, nitrogen or nitrates.	None.	n/a
358	Ministry of Natural Resources and Forestry - Timmins District	Page ES-2, 2nd Paragraph With the flow changes to the Mollie River, how will the Dividing Lake Walleye that utilize this flow be addressed?	Changes in flow in Dividing lake will be of a very low magnitude (conservatively calculated to be max. 4%, see Table 4-3 in the Hydrology TSD - Appendix I), such that no effects on Walleye are expected.	None.	n/a
359	Ministry of Natural Resources and Forestry - Timmins District	Page ES-9, 2nd Bullet How will water management and monitoring for heavy metals and acid generation be done in the low-grade stockpile?	Surface water and seepage in the low-grade ore stockpile will be captured and managed with all other site waters as described in Section 5.10 of the EA report. Note also that the low-grade ore stockpile will be completely consumed by the end of the operations phase. Note also that blasted material in the open pit will be monitored for ARD and metal leaching potential. Overall the rock at this site has a very low ARD and metal leaching potential (see Section 6.3.4).	None.	n/a
360	Ministry of Natural Resources and Forestry - Timmins District	Page ES-10, 5th Bullet Please note that any lay down area on Crown land, will require a permit.	This comment has been noted and will be considered during the permitting stage.	None.	n/a
361	Ministry of Natural Resources and Forestry - Timmins District	Page ES-13, 2nd Bullet Please be more specific, what percentage of water will be recycled? This is important because when cyanide is released into the environment, it negatively impacts fish populations.	IAMGOLD has developed a closed-loop process water use plan to maximize recycling of water on-site and minimize the amount of freshwater required for operations, as well as minimizing the amount of water pumped to the TMF. In Section 5.10.2, it is indicated that the majority of process water will be derived from the open pit, runoff, seepage collection to the mine water pond and supernatant from the TMF pond as required.	None.	n/a
362	Ministry of Natural Resources and Forestry - Timmins District	Page ES-13, 7th Bullet It is stated that "progressive site reclamation, where and to the extent practical." Specific information should be provided.	IAMGOLD will pursue progressive site reclamation and revegetation where possible. Particularly for the MRA slopes for the overburden stockpiles. The conceptual closure plan is described in Section 5.16.	None.	n/a
363	Ministry of Natural Resources and Forestry - Timmins District	Page ES-13, List of activities carried out during operations phase During ore processing, how will the effects of cyanidation be mitigated? What are the detailed precautionary plans? <ul style="list-style-type: none"> ▪ Cyanide is extremely toxic to birds and mammals that are drawn to cyanide solution collection ponds as a source of water. How will this be mitigated? ▪ Ponds can leak or overflow, posing threats to underground drinking water supplies and wildlife in lakes and streams. (area is known to have groundwater infiltration) How will this be mitigated? ▪ Fish and Benthic macroinvertebrate are extremely sensitive to low cyanide concentrations. How will this be mitigated? 	Water quality mitigation measures are shown in Table 10-1 of the EA report. In summary, the vast majority of cyanide will be destroyed prior to the discharge to the TMF.	None.	n/a
364	Ministry of Natural Resources and Forestry - Timmins District	Page ES-13, 3rd Paragraph It will take 50 to 80 years for the pit to fill up with water. Who will be responsible for the dam and monitoring it in this timeframe? How is this work going to be funded?	See Section 5.16 for the conceptual closure plan. IAMGOLD will develop a detailed closure plan compliant with the Ontario <i>Mining Act</i> , pending EA and other approvals. Financial assurance will be indicated in accordance with the Act (see response to Comment #177).	None.	n/a

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365	Ministry of Natural Resources and Forestry - Timmins District	Page ES-16, 1st Paragraph With the changing of groundwater flow, what studies have been completed to see the impact of upwelling in Mesomikenda Lake? These upwelling's are very important for Lake Trout spawning within the lake.	As described in Section 9.4 of the EA report the potential drawdown around the open pit has a very limited extent (see Figure 9-29). The 1 m drawdown contour is predicted to extend farthest at the southwest of the open pit (approximately 1.4 km). No effects are expected beyond the drawdown cone. Therefore it is not foreseen that upwelling in Mesomikenda Lake will be affected by the Project. Full details with regards to the hydrogeological modelling are provided in Appendix H.	None.	n/a
366	Ministry of Natural Resources and Forestry - Timmins District	Page ES-16, 2nd Paragraph What influence did the old mine site have on hydrological and background water quality studies?	There is no apparent interaction between the closed out Chester Mine operation and the surface water regime in the Project area.	None.	n/a
367	Ministry of Natural Resources and Forestry - Timmins District	Page ES-17, 1st Paragraph The proposed mine site is located on the transition between Boreal and Great Lakes St Laurent Forest, with red and white pine species found in the area.	The comment has been noted. More detail on existing vegetation communities is provided in Section 6.4.2 and 6.4.5 and in full detail in Appendix K (Vegetation TSD) and Appendix M (Transmission Line Alignment Terrestrial Biology TSD).	None.	n/a
368	Ministry of Natural Resources and Forestry - Timmins District	Page ES-17, 3rd and 4th Paragraph Please provide surveys, methodology and accreditation of staff who completed wildlife surveys. What was the survey methodology used to determine that there was no significant habitat found? Was Ecological Land Classification (ELC) used here?	The baseline studies, including wildlife surveys, are summarized in Chapter 6 (Section 6.4). The detailed baseline reports are appended to the TSDs presented in Appendix L (Wildlife TSD), Appendix M (Transmission Line Alignment Terrestrial Biology TSD) and Appendix N (Aquatic Biology TSD) for the biological environment. An ecological land classification system was used to define ecosites for the baseline studies, as described in Section 6.4.2.1.	None.	n/a
369	Ministry of Natural Resources and Forestry - Timmins District	Page ES-19, 1st Paragraph Walleye are found within the water body complexes stated in the executive summary and are also found by your studies. Additionally, Walleye are known to spawn in this area and these lakes are made up of Walleye complexes. What were your survey methods and timing of year? What is the experience of the crew surveying? Which ponds were surveyed?	The baseline study findings are summarized in Section 6.4.8 of the EA report. Full baseline results including methods, dates and locations are described in Appendix N (Aquatic Biology TSD), Appendix C. All data collection was carried out by well-experienced and qualified staff.	None.	n/a
370	Ministry of Natural Resources and Forestry - Timmins District	Table ES-2, Water Supply Section There is no discussion of impacts to hydro-electric generation. Mesomikenda Lake is a Hydro Reservoir and is utilized in winter for Hydro production. Additionally, what are the effects on Lake Trout?	IAMGOLD understands the requirement to operate the Project such that it does not interfere with existing uses (see Section 9.5.3 of the EA report). Effects on aquatic species are described in Section 9.9 and Appendix N (Water Quality TSD).	None.	n/a
371	Ministry of Natural Resources and Forestry - Timmins District	Table ES-2, Water Discharge Section There is no mention of source water protection and its impacts by discharging into Mesomikenda Lake. Also, the effects on Lake Trout are not explored. Please clarify.	As described in Section 9.10 no adverse effects on the Timmins drinking water supply are expected. Effects on aquatic species are described in Section 9.9 and Appendix N (Water Quality TSD).	None.	n/a
372	Ministry of Natural Resources and Forestry - Timmins District	Table ES-2, Watercourse Realignment Compensation only addresses water course realignment, not the destruction and loss of the lake portion. How will the proponent compensate this loss of lake habitat? In Timmins District, an area with similar geological make-up, mine rock was used to dam a lake and is now leaching toxic material that has impacted the lake. What is your plan to deal with a similar situation should this happen?	The channel realignment plan include compensation for both lotic and lentic habitat. Material to build retention dams will be selected such that they will not be acid generating or metal leaching.	None.	n/a
373	Ministry of Natural Resources and Forestry - Timmins District	Table ES-2, Site Infrastructure There is no indication on the map or in this section on the existing infrastructure on the east side of Mesomikenda Lake. There is also no mention of the existing MOU in regards to the bridge. Please explain.	Table ES-2 only provides an overview of Project components that have been considered as part of the assessment of alternatives. The planned access to the future Project site does not include use of the bridge as the main access. Trelawney will continue to honour its commitments under the existing memorandum of understanding.	None.	n/a

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374	Ministry of Natural Resources and Forestry - Timmins District	Page ES-30, 4th Paragraph Gogama Area Citizens Committee does not exist anymore.	Comment has been noted. This bullet will be removed.	Gogama Area Citizens Committee has been removed from the bullet list on Page ES-31.	Page ES-31
375	Ministry of Natural Resources and Forestry - Timmins District	Page ES-35, 6th Paragraph The effects on water resources do not include the persistence of contaminants from blasting agent in waste rock effluent. Please explain.	This information is contained in the body of the EA report, Section 9.6, and in Appendix J (Water Quality TSD). In summary, blasting will be carried out in a fashion such that waste of blasting emulsion is minimized. Residual ammonia in site water will be allowed to degrade prior to discharge.	None.	n/a
376	Ministry of Natural Resources and Forestry - Timmins District	Page ES-37, 1st Paragraph The landfill site Neville Twp is currently being utilized. This needs to be identified in the report.	Domestic waste management is described in Section 5.14, where the Neville Township / MNRF landfill is duly identified. Alternatives for domestic waste management were assessed in Chapter 7 (Section 7.13.12, Appendix U7).	None.	n/a
377	Ministry of Natural Resources and Forestry - Timmins District	Page ES-39, 5th Paragraph Please provide more specific information regarding offsetting measures for fish habitat.	This information is contained in the body of the EA report, Section 9.9, and in Appendix N (Aquatic Biology TSD). In summary, IAMGOLD will offset the loss of lotic and lentic habitat to maintain the existing commercial, recreation and Aboriginal fisheries.	None.	n/a
378	Ministry of Natural Resources and Forestry - Timmins District	Page ES-39, 8th Paragraph There will be a major impact to the 4M canoe route and tourism anticipated. How might this impact local communities?	This information is contained in the body of the EA report, Section 9.10, and in Appendix O (Land and Resource Use TSD), Appendix O. In summary, IAMGOLD will facilitate access to the 4M Canoe Routed during all Project phases.	None.	n/a
379	Ministry of Natural Resources and Forestry - Timmins District	Page ES-40, 5th Paragraph What are considered "neutral" or "insignificant" effects? Please be more specific.	This information is contained in the body of the EA report, see Chapter 14.	None.	n/a
380	Ministry of Natural Resources and Forestry - Timmins District	Page 5-4, Sec 5.3.3 & 5.14.3 The mine life is said to be 15 years, however, Post-Closure Phase Stage 1 is said to last 50 to 80 years. It is stated on Page 5-38 that "further details will be determined as the engineering studies progress during the permitting stage." It is difficult to determine environmental impact if further details will be determined later. MNRF suggests providing more information in an updated version of the EA around Post-Closure Phase Stage 1.	The existing information is at a level that allows the assessment of impacts for the Project. The quoted statement merely reflects the fact that some minor adjustments to Project design can occur during the ongoing engineering. Any such changes are not expected to substantially change the Project description, Project effects, or the Project duration.	None.	n/a
381	Ministry of Natural Resources and Forestry - Timmins District	Has there been a study of the benthic macroinvertebrate communities in the area and the effects of the mine on their community composition?	This information is contained in the body of the EA report, Section 9.9, and in Appendix N (Aquatic Biology TSD). In summary, IAMGOLD will offset the loss of lotic and lentic habitat to maintain the existing commercial, recreation and Aboriginal fisheries.	None.	n/a

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382	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-3, 5th Paragraph</p> <p>The report notes that “annual water losses, based on total water lost to the atmosphere through evapotranspiration (ET) and to deep ground water resources is in the range of 400 mm to 600 mm (MNR, 1984). Annual water surplus is in the range of 200 mm to 500 mm.”</p> <p>1: Is there more up-to-date information than 1984?</p> <p>2: Please cite where the annual water surplus range data came from.</p>	<p>The referenced 1984 MNR report provides an overview of water resource availability in Ontario. More recent estimates of water loss through evaporation have been provided for Sudbury Airport 1956-2007 (553 mm; Environment Canada 2006), Timmins Victor Power Airport Timmins 1956 - 2009 (513 mm; Environment Canada 2011) and near Gogama (480 mm for the year 2003 and 2004; Pejam et al 2006). Each of these estimates is within the range reported in the 1984 MNR report.</p> <p>The annual water surplus was calculated taking the lowest stated annual total precipitation (800 mm) and subtracting the largest reported annual evaporation (600 mm) and by taking the greatest stated annual precipitation (900 mm) and the lowest reported annual evaporation (400 mm) to provide an annual water surplus range of 200 mm to 500 mm.</p>	None.	n/a
383	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-42, 8th Paragraph</p> <p>Were wetland evaluations carried out by a certified MNRF Ontario Wetland Evaluation System (OWES) Ontario Wetland Evaluator? If so, please provide a copy of the OWES evaluations.</p> <p>Additionally, how will wetland features be compensated if altered or removed?</p>	<p>Wetland information that was collected during baseline field surveys was reviewed by a certified MNRF Ontario Wetland Evaluation System Ontario Wetland Evaluator; however, formal wetland evaluations were not completed. The approach for assessing Project effects on wetlands in the EA was presented to the MNRF in a technical memorandum. Comments provided by the MNRF were incorporated into the approach and for the purpose of the EA, Project effects on wetlands were assessed based on the change in wetland form and function. As part of the <i>Fisheries Act</i> Authorization requirements IAMGOLD will develop habitat compensation / offsetting plans. As indicated in Appendix N (Aquatic Biology TSD), Section 4.3 Aquatic Habitat, the overarching goal of habitat compensation / offsetting measures will be to provide “like for like” habitat to maintain the fish communities within, and the functionality of, the affected watersheds.</p>	None.	n/a
384	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-44 – 6-46, Sec 6.4.2.2</p> <p>Page 6-44 notes that the regional study area is 3,788 km² and the local study area is 119 km². Thus, the local area is approximately 3.14% of the regional study area. With this in mind, given that plant community surveys and species at risk-vegetation surveys were performed at the local scale - pg.6-45, 6-46 - please clarify the following statement: “The vegetation baseline studies for the regional and local study areas around the project site demonstrate... the majority of the recorded plant species are native to Ontario and no provincially or federally listed or rare species were identified through field studies” pg.6-48.</p> <p>The latter suggests surveys were also performed at a regional scale, please clarify and expand on how these surveys are representative of the proposed project area.</p>	<p>As described in Appendix K (Vegetation TSD), Attachment 1, Section 5.3 a total of 50 plant community survey plots were sampled in the local study area and 16 plant community survey plots were sampled in the regional study area. Sampling in the regional study area was completed at locations east of the Project along a decommissioned power transmission corridor. Preliminary desktop mapping of upland and wetland plant communities was ground-truthed and detailed plant species inventories were completed from September 1 to 10, 2012 and from July 6 to 8, 2013. Table 4 and Table 5 in Appendix K, Attachment 1, Section 5.1.3 provide a detailed comparison of land cover in the regional study area, and local study area and indicate that that land cover in the local study area is proportional to the land cover in the regional study area. Golder biologists surveyed a representative subset of each land cover type identified during the desktop review. Additionally, survey effort was spatially distributed throughout the local study area and reflected the proportion of the availability of the land cover types in the local study area. Observations recorded during the plant community surveys indicate that habitat in the local study area is typical to that described for Ecoregion 3E-5 suggesting that the survey results can be considered representative of the proposed Project area.</p>	None.	n/a
385	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-51, 4th Paragraph</p> <p>As per the Draft Whip-poor-will Survey Protocol: “...auditory surveys must be conducted by Qualified Professionals...”</p> <p>Please provide the qualifications and experience of the surveyors.</p>	<p>Each whip-poor-will field crew was led by experienced Golder staff. Golder field crew leads for the surveys were Jennifer Braun, Shannon Fyfe, Wesley Aulbrook, Natalie Korczak, and Kyle Patrick. Each field crew lead has experience completing whip-poor-will surveys for aggregate, and quarry permitting and mining developments. Specific projects that these Golder staff have completed whip-poor-will surveys for include:</p> <ul style="list-style-type: none"> ▪ Ministry of Transportation Aggregate Permitting; ▪ 10 survey locations along Ontario highways 69 and 637 ▪ Cliff's Natural Resources Ferrochrome Production Facility; ▪ 34 survey locations on the project site north of Capreol ▪ Vale's Victor Capre Properties; and ▪ 16 survey locations on the Victor Capre Properties near Skead ▪ IAMGOLD Côte Gold Project. ▪ 34 survey locations 	None.	n/a

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386	Ministry of Natural Resources and Forestry - Timmins District	Page 6-51, 4th Paragraph Please note that as per the results of the Jan and Jun 2013 COSSARO Meetings, the previous scientific name of Eastern Whip-poor-will - <i>Caprimulgus vociferous</i> - has been changed to <i>Antrastomus vociferous</i> .	The scientific name for Eastern whip-poor-will has been revised from <i>Caprimulgus vociferous</i> to <i>Antrastomus vociferous</i> .	The scientific name for Eastern whip-poor-will has been revised from <i>Caprimulgus vociferous</i> to <i>Antrastomus vociferous</i> in Appendix K (Vegetation TSD), Attachment I.	Chapter 6, Appendix K, Attachment I
387	Ministry of Natural Resources and Forestry - Timmins District	Page 6-53, 1st Paragraph As stated in the Draft EA Report: pg. 6-53 "...Where possible, these -reptile and amphibian-surveys were combined with waterbird breeding surveys and breeding bird surveys to gain efficiencies, and were completed between 10:00 a.m. and 17:00 p.m." Please clarify how the latter was possible since the reptile and Amphibian surveys were completed between 10:00 and 17:00 and the waterbird breeding ground surveys and breeding bird surveys were completed 30 minutes before sunrise and had to be completed no later than 10:00 Please clarify which Unnamed Lake (1 or 2) the studies were performed in.	The wording in the text is incorrect and should have been more clearly constructed. Basking turtle survey observations were not simultaneously recorded with breeding bird survey observations. Breeding bird surveys began approximately 30 min before sunrise and ended no later than 10 am. Waterbird breeding ground surveys began at dawn and ended no later than 1:30pm. Basking turtle surveys (i.e., reptile surveys) began at 10 am and ended no later than 5:00 pm. During favourable weather conditions waterbird breeding survey observations and basking turtle survey observations were simultaneously recorded during the overlapping survey period of 10 am and 1:30 pm. This allowed for efficiencies to be gained by collecting some waterbird breeding ground survey observations at the same time as the basking turtle surveys. The text has been revised to state "Where possible, surveys were combined with waterbird surveys during favourable weather conditions to gain efficiencies, and were completed between 10 a.m. and 5 p.m., depending on air temperature." Basking turtle surveys were completed in Unnamed Lake 1.	The text has been revised to more clearly reflect survey methodology for basking turtles.	Chapter 6, Appendix L, Attachment 1, Section 4.8
388	Ministry of Natural Resources and Forestry - Timmins District	Page 6-53, 2nd Paragraph First paragraph (Amphibian Surveys): "One round of three minute surveys was completed at four survey locations, following the Marsh Monitoring Program ... for guidance, on June 5 to 8, 2012". As per the Marsh Monitoring Program: "Each route is to be surveyed for calling amphibians three times during the spring and early summer... By conducting three surveys, you should be able to detect all species present. The first survey is timed to monitor species that breed very early (e.g., Chorus Frog, Wood Frog and Spring Peeper). The second survey should coincide with "optimum" breeding for Spring Peeper, American Toad, Northern Leopard Frog, Pickerel Frog and, where they occur, Fowler's Toad. The third survey will monitor late-season breeders, Gray Treefrog, Cope's Gray Treefrog, Mink Frog, Green Frog, and Bullfrog". Second paragraph (Amphibian Surveys): "Surveys were initiated half an hour after sunset and ended near midnight during evenings with little or no wind a minimum temperature of 5 C". As per the Marsh Monitoring Program: "Frogs and toads always require an air temperature greater than 5C (41F) to elicit calling activity. "Late season" frogs (bullfrogs and green frogs)' species known to occur in the study area (Ontario Nature Ontario Reptile and Amphibian Atlas)' don't begin their calling activity until temperatures are even higher. Therefore night-time air temperature should be greater than 5C (41F) for the first survey, 10C (50F) for the second survey and 17C (63F) for the third survey". As well as: "...in Northern regions, surveys can start at 22:00 in the summer even if it isn't dark then". Please specify the protocol used to monitor amphibian populations indicative of early and late breeders.	The amphibian survey program was completed following the Ontario Marsh Monitoring Program (2003) with the objective of documenting a species list for the Study Area. In Central Ontario amphibian survey #1 can be completed from April 15 to 30, survey #2 can be completed from May 15 to 30 and survey #3 can be completed from June 15 to 30. Historic calling dates provided by the Marsh Monitoring Program indicates that all mid and late season frog species known to be in the region containing the Project are typically calling in early June. Air temperatures recorded during the June 5 to 8 surveys ranged from 12 °C to 18 °C. Based on the historic calling dates and the range of air temperatures recorded during the surveys it is anticipated that the majority of the mid and late season breeding amphibian species present on the site would have been recorded during the June 5 to 8 survey period. Of the eight amphibian species with potential to be present during the study green frog, mink frog and northern leopard frog were not recorded during the June 5 to 8 surveys and were not observed during other field survey programs. Each of these species begin calling around late April and early May and are well documented to have a range that overlaps with the regional study area. If these species were present during surveys it is anticipated that they would have been calling at the time of the survey; however, a conservative approach will be taken and it can be assumed that the species are present within the regional study area.	None.	n/a
389	Ministry of Natural Resources and Forestry - Timmins District	Page 6-54, 5th Paragraph Bat Survey: please clarify why only mixed wood and deciduous forest were considered candidate sites for maternity roost when the proposed project site expands through coniferous forests, and bats are known to roost in boreal coniferous forests.	Direction provided by the MNRF (pers. comm Todd Copeland May 5, 2013) indicated that the best available methodology for bats was outlined in the document titled "Bat and Bat Habitat: Guidelines for Wind Power Projects" (Ministry of Natural Resources 2011). Guidance provided by this document indicates that candidate maternity roosts can be identified within mixed forests or deciduous forests with snags / cavity trees that have a diameter at breast height that is greater than or equal to 25 cm. Additionally, a technical memorandum describing the proposed bat survey methodology was submitted to the MNRF for review and agreed upon through general discussions.	None.	n/a

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390	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-60, 6th Paragraph</p> <p>It is written in the report that “during the surveys, Whip-poor-will were heard calling from only one location within the regional study area, and none within the local area.”</p> <p>As per appendix 4, section 4.7, Whip-poor-will and Common Nighthawk Surveys by Golder Associates: Whip-poor-will surveys were performed in the local study area and not the regional study area. However, Whip-poor-wills were heard calling in the regional area. Based on the provided information please clarify the studies performed in order to properly identify Whip-poor-will populations in the regional area and the results.</p> <p>Please also provide: information on the exact location of the auditory observation completed by Golder biologists and a detailed precautionary and conservational plan dictating how the effects - on the Whip-poor-will population - of the proposed project will be mitigated in the short, medium and long-term.</p>	<p>Whip-poor-will surveys were completed in the mine site local study area and in the mine site regional study area along the decommissioned power transmission corridor. These studies generally followed the whip-poor-will survey methodology provided by the MNRF. The first round of whip-poor-will surveys was completed from June 5 to 8, 2012 at 13 locations in the mine site local study area and 9 locations in the mine site regional study area. A second round was completed from July 6 to 7, 2012 at 17 locations in the mine site local study area and 14 locations in the mine site regional study area. Whip-poor-will observations were recorded on June 6 and July 6. These observations were recorded during surveys completed in the mine site regional study area at a location approximately 10 km east of the mine site local study area. Details of the surveys completed in the regional study area are presented in Appendix L (Wildlife TSD), Attachment 1.</p> <p>The general habitat description for whip-poor-will indicates that the area of protected habitat extends from the nest or centre of the approximated defended territory to a distance of 500 m. Activities described in the Project Description indicate that the Project will not have any physical activities that extend beyond the mine site local study area and as a result will not affect the whip-poor-will habitat that is associated with this observation. As a result it is not necessary to create a detailed precautionary and conservational plan dictating how effects from the mine site on the whip-poor-will population will be mitigated in the short, medium and long-term. IAMGOLD is aware of the potential for whip-poor-will to occur in the regional study area and as stated in Chapter 10 an adaptive mitigation approach will be applied. If whip-poor-will are identified to occur in an area that has potential to be affected by the Project the MNRF will be contacted and as appropriate, mitigation measures will be developed.</p>	None.	n/a
391	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-61; 6-80, 1st Paragraph, 2nd Paragraph</p> <p>“Common nighthawks were heard calling at one location within the local study area and two locations within the regional area” pg.6-61</p> <p>“One common nighthawk was recorded during crepuscular bird surveys in the local study area along the TLAs...” pg. 6-80</p> <p>Please provide: The exact location of the auditory observation completed by Golder biologists, as well as the exact location of the auditory observation that occurred during crepuscular bird surveys, and a detailed precautionary and conservational plan dictating how the effects- on the common nighthawk population- of the proposed project will be mitigated in the short, medium and long-term.</p>	<p>The sentence stating that common nighthawks were heard calling at one location within the local study area and two locations in the regional study area has been corrected to reflect the current study area boundaries. The revised text states that common nighthawks were heard calling at three locations within the regional study area. Common nighthawks were observed in the regional study area at a location that was approximately 3 km north of the local study area and at two locations that were approximately 16 km and 21 km east of the mine site local study area.</p> <p>Activities described in the Project Description indicate that the Project will not have any physical activities that extend beyond the northern limit of the mine site local study area and as a result will not affect the common nighthawk habitat that is associated with these observations. As a result it is not necessary to create a detailed precautionary and conservational plan dictating how effects from the Project on the common nighthawk population will be mitigated in the short, medium and long-term. IAMGOLD is aware of the potential for common nighthawk to occur in the local study area and regional study area and as stated in Chapter 10 an adaptive mitigation approach will be applied. IAMGOLD will contact the MNRF and Environment Canada and, as appropriate, will develop mitigation measures if common nighthawk is identified to occur in an area that has potential to be affected by the Project.</p>	<p>Corrected the number of Common nighthawk observations in the regional study area in Chapter 6.</p> <p>The following mitigation measures have been added to Table 10-2:</p> <p>"Include Common Nighthawk and Bank Swallow identification as part of site induction to improve success of wildlife reporting programs."</p> <p>and</p> <p>"Contact the MNRF and EC within 24 hours if Common Nighthawk or Bank Swallow are recorded nesting on site."</p>	Chapter 6, Chapter 10, Table 10-2
392	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-61, 5th Paragraph</p> <p>“Egg shells of an unknown turtle were observed in the regional study area”</p> <p>Please clarify: What steps were taken to identify the species? Have there been any follow-up surveys to verify the identity of nesting turtles?</p>	<p>Egg shells of an unknown turtle species were observed in the regional study area at a location approximately 26 km east of the mine site local study area. Habitat assessment and basking surveys were completed at this location in 2012. No follow-up surveys were completed to verify the identity of the nesting turtles because activities described in the Project Description are not expected to affect the habitat that is associated with this observation.</p>	None.	n/a

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393	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-63; 6-65; Table ES-1, Table 6-23 on 6-81 -</p> <p>Page 6-63 states that "Little brown myotis (<i>Myotis lucifugus</i>) was recorded at five of the six stationary acoustic stations. Northern long-eared myotis (<i>Myotis septentrionalis</i>) was not recorded in the regional or local study areas"</p> <p>Note the following paragraphs contradict findings</p> <p>"Little brown myotis and northern long-eared bats were recorded in the regional and local study area (discussed under mammals)..."</p> <p>Table ES-1- Species at Risk Detected within the Local and Regional Study Areas: notes the presence of Northern Myotis also.</p> <p>Please clarify the presence or absence of Northern Myotis and provide adequate findings.</p> <p>As well please clarify Table 6-23 on pg. 6-81 Northern Myotis Bat is not checked as observed on site.</p> <p>Please provide: The exact location of the auditory or visual observation completed and a detailed precautionary and conservational plan dictating how the effects- on the bat species population- of the proposed project will be mitigated in the short, medium and long-term.</p>	<p>Results of the baseline acoustic bat survey indicate that the northern long-eared bat was not recorded during the acoustic bat surveys. Page 6-63; 6-65; Table ES-1 and Table 6-23 on 6-81 have been revised to reflect these baseline observations. The terrestrial baseline report provided in Attachment 1 of Appendix L (Wildlife TSD) provides a description of bat survey methodology (Section 4.11) and results (Section 5.12). Little brown myotis was recorded at five survey locations (COT02, COT03, COT04, COT05, and COT06) during the acoustic survey of candidate bat maternity roost habitat and at four (COT07, COT09, COT10, and COT13) locations during the candidate hibernacula investigation.</p> <p>As discussed in Chapter 10 an adaptive mitigation approach will be implemented to mitigate the short, medium and long-term residual effects of the Project on individuals of bat SAR designated as threatened or endangered, or their habitat. The effects of the proposed Project on the bat species population will be addressed through the mitigation proposed by IAMGOLD to avoid or reduce the residual effects of the Project on wildlife and wildlife habitat in general, plus the added protection of compliance with the Provincial <i>Endangered Species Act</i>. IAMGOLD will contact the MNRF to discuss the potential <i>Endangered Species Act</i> process timing and requirements.</p>	The incorrect references to Northern long-eared myotis in the Executive Summary, Table ES-1 and Section 6.4.3.2 have been removed.	Executive Summary, Table ES-1, Chapter 6, Section 6.4.3.2
394	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-63, 5th Paragraph</p> <p>"Two threatened (SARA 2013) upland breeding bird species were observed in the regional study area during upland breeding bird surveys: Olive-sided flycatcher and Canada warbler"</p> <p>Please provide: The exact location of the auditory observation completed and a detailed precautionary and conservational plan dictating how the effects- on the Olive-sided flycatcher and Canada warbler population- of the proposed project will be mitigated in the short, medium and long-term.</p>	<p>Olive-sided flycatcher was recorded at one point count location, which is located approximately 13 km east of the mine site local study area. Canada Warbler was recorded at five point count locations in the local study area and two point count locations in the regional study area which are located approximately 1.5 km north of the local study area and 13 km east of the local study area. Activities described in the Project Description indicate that the Project will not have any physical activities that extend beyond the mine site local study area and will not affect the olive sided flycatcher and Canada warbler habitat that is associated with the observations recorded outside of the local study area.</p> <p>Habitat for Canada warbler and olive-sided flycatcher is not currently designated or protected under the <i>Endangered Species Act</i> or SARA. Protection for the Canada warbler and olive-sided flycatcher is provided by the <i>Migratory Birds Convention Act</i> (1994) and the <i>Fish and Wildlife Conservation Act</i> (Government of Ontario 1997). IAMGOLD will comply with these acts to provide appropriate protection for the Canada warbler and their habitat over the short, medium and long term. In addition, the adaptive mitigation described in Chapter 10 will be applied as appropriate to provide additional protection for the Canada warbler and the olive-sided flycatcher.</p>	None.	n/a
395	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 6-87, 5th Paragraph</p> <p>"Based on field surveys, five avian Species at risk (SAR), one mammalian and one reptilian SAR were identified as occurring within or in the vicinity of the local study area sections along the TLAs"</p> <p>Note the latter paragraph contradicts survey findings:</p> <ul style="list-style-type: none"> ▪ There are six avian SAR species mentioned in the EA that have been observed through surveys: Bald Eagle, Canada Warbler, Olive-sided Flycatcher, Rusty Blackbird, Common Nighthawk and Whip-poor-will ▪ There are two mammalian SAR species mentioned in the EA that have been observed through surveys: Little brown myotis & Northern long-eared myotis <p>Please clarify.</p>	<p>The number of SAR reported on Page 6-87, 5th Paragraph ("<i>Based on field surveys, five avian Species at risk (SAR), one mammalian and one reptilian SAR were identified as occurring within or in the vicinity of the local study area sections along the TLAs</i>") is correct and pertains to the transmission line alignments only. The latter paragraph does not contradict this statement as the latter paragraph pertains to both the transmission line alignments and the mine site (Whip-poor-will and Northern Myotis were recorded at the mine site but not along the transmission line alignments).</p>	None.	n/a
396	Ministry of Natural Resources and Forestry - Timmins District	<p>Page 9-48, Sec 9.9.1</p> <p>If the sub watersheds are planned to be restored to pre-mining conditions, will the proposed compensatory aquatic habitat be destroyed? Will the original channels be able to sustain the original biodiversity as before with little or no maintenance?</p>	<p>The two main watercourse realignments will remain in place post-closure and the previously established habitat will mainly remain functional. Once the open pit, which overprints a large amount of lotic habitat, is fully flooded the original subwatersheds will be re-established and the new lake will become productive aquatic habitat.</p>	None.	n/a

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397	Ministry of Natural Resources and Forestry - Timmins District	Aggregate will come from two permitted sites, potential new aggregate permits (if required), and mine waste rock. Knowing land tenure is key to provide advice. As the lands are not designated under the <i>Aggregate Resources Act (ARA)</i> aggregate extraction on private lands (with surface rights) of sand and gravel would be outside the ARA but would require the permission of the private land owner if not IAMGOLD. Once land tenure is finalized, formal comments regarding aggregate extraction can be provided.	The comment has been noted.	None.	n/a
398	Ministry of Natural Resources and Forestry - Timmins District	Figure 6-5 Mapping shows all water flowing into Dividing Lake and not out. Is there an identified problem with the mapping? There are issues with watershed mapping throughout the report. For example, but not limited to, lakes being cut in half.	Flow paths in Figure 5-6 are largely focused around water bodies in the vicinity of the proposed Project site. A flow direction arrow has been added downstream of Dividing Lake for additional clarity. Maps presented in the EA are scaled and focused around the proposed Project site and defined study areas. Because of the need to show proposed Project infrastructure at various scales and the abundance of surface water features in the area, some figures may show only parts of some lakes.	A flow direction arrow has been added downstream of Dividing Lake. Adjusted angle of some arrows for greater flow direction clarity.	Figure 6-5
399	Ministry of Natural Resources and Forestry - Timmins District	Jumping between local and regional scales throughout the report is very confusing. Additionally, inferring information at the regional scale based on local land base description is not statistically sound.	Maps throughout the Amended EIS / Final EA Report are scaled and focused around the proposed Project site and defined study areas. Note that studies have used both a regional and local scale or study areas around the Project site for surveys, data collection (primary and secondary sources) and modelling.	None.	n/a
400	Ministry of Natural Resources and Forestry - Timmins District	No specific locations of where ESA species were found. This is required to determine presence or absence of habitat on or adjacent to the subject lands.	The omission of specific locations of <i>Endangered Species Act</i> species observations was necessary to protect the sensitivity of the data. Information describing the location of any <i>Endangered Species Act</i> species observations will be provided to the MNRF in the appropriate <i>Endangered Species Act</i> forms (i.e., Information Gathering Form).	None.	n/a
401	Ministry of Natural Resources and Forestry - Timmins District	Cumulative impacts to fisheries downstream in Dividing Lake and the Mollie River do not seem to be discussed. Please address.	No adverse effects on fisheries are expected in Dividing Lake and the downstream reaches of the Mollie River system (see Section 9.9 and Chapter 11).	None.	n/a
402	Ministry of Natural Resources and Forestry - Timmins District	Page 6-45, Table 6-14 Jack Pine Regeneration is not an Ontario Land Classification (ELC) type. Please correct.	The classifications presented on Page 6-45 in Table 6-14 are Land Cover classifications derived from the MNRF Land Cover 2000 digital data (Spectranalysis Inc. 2004). The Land Cover 2000 digital data identifies these polygons as Forest – dense mixed and Forest – dense coniferous. Since the Land Cover 2000 data was created the polygons have been harvested and have begun to regenerate. Based on field observations the polygon is more accurately described as Jack Pine Regeneration. An ecological land classification system was used to define ecosites within digitally derived Land Cover 2000 polygons. Ecological land classification results are presented in Appendix K (Vegetation TSD), Attachment I, Table 6.	None.	n/a
403	Ministry of Natural Resources and Forestry - Timmins District	It is not clear how fisheries and data population (fish/ha) was derived. Was captured tag recapture program utilized? It is known that the North East region average walleye population is 4 fish/ha, not the 6 to 14 fish indicated in the report.	A mark-recapture program was utilized to determine fish/ha (see Appendix N, Aquatic Biology TSD, Sections 2.4.3 and 6.2.2).	None.	n/a
404	Ministry of Natural Resources and Forestry - Timmins District	Mollie River watershed has a very good Walleye population, yet it is not shown on your tables. Please clarify.	Walleye were collected in the Mollie River Watershed and were captured in Côté Lake, Upper, Middle and Lower Three Duck lakes but not in the Mollie River itself. Tables 3.1 and 6.1 in Appendix N (Aquatic Biology TSD) shows walleye collected in Upper, Middle and Lower Three Ducks lakes but erroneously does not show that they have also been collected in Côté Lake. The tables have been corrected (see Table 6.1 in the Aquatic Addendum and Table 3.1 in the revised Aquatic Biology TSD). Walleye are shown as present in Côté Lake, Upper, Middle and Lower Three Duck lakes within the Mollie River watershed in Figure 6.6 of Appendix N	Tables 6.1 of Appendix N (Aquatic Biology TSD) has been updated in the Addendum to Appendix N.	Appendix N

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405	Ministry of Natural Resources and Forestry - Timmins District	Throughout the report, compensation plans are discussed for fish and wildlife, forestry, loss of lands and species at risk. Unfortunately, nowhere in the plan are there any detail plans to review, nor are there any timelines of when these plans will be implemented. Please address.	Compensation plans are only proposed to offset the loss of aquatic habitat (see Chapters 9, 10 and 11). Compensation plans are not foreseen for terrestrial wildlife and vegetation.	None.	n/a
406	Ministry of Natural Resources and Forestry - Timmins District	Bathymetric work presented to MNR in the past had process errors, have these errors been corrected? This area is flat and there are no dramatic drop-offs in these lakes with the exception of Mesomikenda Lake, a cold water lake with known Lake Trout species.	The comment has been noted. IAMGOLD has confidence that the bathymetric data used is of high quality and suitable to support the EA report.	None.	n/a
407	Ministry of Natural Resources and Forestry - Timmins District	Page 5-45 Need Clarification on Stabilization efforts at Major Crossing for the 230kV proposed corridor. How will the line be supported at water crossings?	Section 5.16.2.9 on Page 5-45 refers to the closure of road, pipelines and power lines and it is not clear how this comment relates to closure of the transmission line. Section 5.15.1 talks about activities during the construction phase, including the construction of the 230 kV line. Details about the transmission line are presented in Section 5.12: The proposed transmission line alignment is mainly composed of wood portal frame structures. However at some locations, steel towers will be used for line or river crossings. The wood frame structures will be H-frame portals with pole heights ranging from approximately 21 m to 24 m. Dead-end structures will be guyed. Depending on soil conditions, rock excavation may be required to set poles to the required depth for stability. The steel towers will be rigid lattices with triangular phasing configuration. The structures will require either an overburden or rock foundation depending on existing landscape conditions.	None.	n/a
408	Ministry of Natural Resources and Forestry - Timmins District	Page 5-45 As part of the site closure, if the 230kV corridor is not utilized by any other agency or group, will the rock used to stabilize the towers and poles be removed?	The proposed closure strategy for the 230kV corridor is described in Section 5.16.2.9. The possibility of transferring the transmission line to another operator will be considered, but if not, the transmission line and related infrastructure will be dismantled and removed.	None.	n/a
409	Ministry of Natural Resources and Forestry - Timmins District	Page 5-45 There is no indication pipelines will be buried in the project site area. Due to numerous License of Occupations and Leases on the site, this may cause conflict with what is allowed under current tenure.	Comment has been noted. This will be addressed through final lease applications and easement negotiations.	None.	n/a
410	Ministry of Natural Resources and Forestry - Timmins District	Page 5-45 Wherever the 230kV Corridor ends up crossing Mesomikenda, Lake, there is a License of Occupation (#7543) for Flood Rights that will need to be addressed with MNR.	Comment has been noted. This will be addressed in the permitting stage of the Project.	None.	n/a
411	Ministry of Natural Resources and Forestry - Timmins District	Page 5-47, 3rd Paragraph There is mention of a rock drainage ditch on site, can the proponent clarify if mine waste rock will be used to line this? If so, is it non-acid generating? A Certificate of Analysis will be required.	Comment has been noted. No mention of rock drainage ditches can be found in the reference paragraph. However, it is likely that mine rock will be used to build drainage ditches. Any mine rock used would be non-acid generating.	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
412	Ministry of Natural Resources and Forestry - Timmins District	Figure 5-1 The Corridor Right of Way crosses the attenuation zone for McKeown East Waste Disposal Site (MNRF). This buffer should be maintained moving forward. Certificate of Approval №: A 7306006 Easting: 461110.377 Northing: 5345558.432	Commented has been noted and will be considered in ongoing engineering optimization and during the permitting stage.	None.	n/a
413	Ministry of Natural Resources and Forestry - Timmins District	Figure 5-1 The Corridor Right of Way crosses a portion of Hydro Bay on Kenogamassi Lake that is held under a License of Occupation (LO) #7598 for Flood Rights. The LO may need to be adjusted for the addition of a corridor crossing the lake. Has this been identified?	Commented has been noted and will be considered in ongoing engineering optimization and during the permitting stage.	None.	n/a
414	Ministry of Natural Resources and Forestry - Timmins District	Figure 5-1 The Corridor Right of Way looks to be Crossing Patent Lands at the following location :468216.581E, 5358071.95N. MNRF suggests consultation between land owner and proponent.	Commented has been noted and will be considered in ongoing engineering optimization and during the permitting stage.	None.	n/a
415	Ministry of Natural Resources and Forestry - Timmins District	Figure 5-1 The Corridor Right of Way looks to be Crossing Land Use Permit #1505-1040868. This is an Attenuation Zone for a Wood Waste Facility in current operations. This buffer must be maintained moving forward. 469251.104E 5358930.65N	Commented has been noted and will be considered in ongoing engineering optimization and during the permitting stage.	None.	n/a
416	Ministry of Natural Resources and Forestry - Timmins District	Figure 5-1 There are numerous parcels of patent land surrounding the substation connection point. The corridor right of way (ROW) crosses many of these patents. Has any consultation been done with Patent holders of these properties that will be affected?	Commented has been noted and will be considered in ongoing engineering optimization and during the permitting stage.	None.	n/a
417	Ministry of Natural Resources and Forestry - Timmins District	Figure 5-1 The majority of the ROW for the transmission corridor will be placed under one form of tenure (LUP, Lease, Easement) as the majority of the ROW will be on Crown Lands and/or Crown Leases. MNRF suggests this discussion begin with Timmins District as soon as possible.	Commented has been noted and will be considered in ongoing engineering optimization and during the permitting stage.	None.	n/a
418	Ministry of Natural Resources and Forestry - Timmins District	Figure 5-1 Conditions regarding fording and in water work: 1) Before any work is conducted around the Mattagami River tributaries (i.e. Grassy and Mountjoy Rivers) which contain Lake Sturgeon, please contact a Timmins District Management Biologist. For this watershed, no in water work until after July 15. 2) Additionally, no in water work or fording will be conducted (for the entire project area) until further consultation with a Timmins District Management Biologist. For all other water courses outside of the Mattagami River watershed - no in water work would be conducted until after June 20.	The comment has been noted. No in water works will be carried out for the proposed transmission line, and IAMGOLD will contact the MNRF prior to in water work at the Project site, or for work around the Mattagami river tributaries which contain Lake Sturgeon. Timing windows established by the MNRF will be respected for all in water work. If timing windows cannot be met, IAMGOLD will contact the MNRF and DFO for advice.	None.	n/a

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419	Ministry of Natural Resources and Forestry - Timmins District	Figure 5-1 Values Identified: The hydro line corridor from Timmins to Mattagami Lake contains 1 Common Raven and 1 Broad Winged Hawk nest. The coordinates for these nests are: Common Raven (463,697, 5,308,029) Broad Winged Hawk (459,941, 5,337,588). Please address how these values will be protected.	The comment has been noted. IAMGOLD will note these locations and commits to avoiding them, assuming that they are still considered active at the time when construction activities commit.	None.	n/a
420	Ministry of Natural Resources and Forestry - Timmins District	Page 5-31, 5th Paragraph MNR questions the location of the water crossing at Mesomikenda Lake. Why has IAMGOLD not chosen to have the corridor go further south and cross at the existing bridge location where there is an existing MOU with Trelawney?	The transmission line crossing at Mesomikenda Lake will be optimized during feasibility studies.	None.	n/a
421	Ministry of Natural Resources and Forestry - Timmins District	Page 5-31, 5th Paragraph Mesomikenda Lake is an important tourism lake in the area. Is it possible to bury the 230 kV line at the proposed new location? If not possible, please explain why.	The transmission line crossing at Mesomikenda Lake will be optimized during feasibility studies.	None.	n/a
422	Ministry of Natural Resources and Forestry - Timmins District	Page 5-44, 4th Paragraph If either Cat 9 pit is to be expanded, a new ARA application must be submitted to Timmins District for review.	Commented has been noted and will be considered in ongoing engineering optimization and during the permitting stage.	None.	n/a
423	Ministry of Natural Resources and Forestry - Timmins District	App Q 2-1 How were the built heritage surveys conducted? Please provide more information regarding survey methods. Please provide the qualifications of the individuals who completed the surveys.	For the purposes of the built heritage and cultural heritage landscape assessment, AMEC undertook the following tasks: <ul style="list-style-type: none"> ▪ identification of major historical themes and activities of the study area in the Townships of Chester and Neville through historical research and a review of topographic and historic mapping; ▪ review of the survey of lands within and adjacent to the proposed Project site as conducted by Dr. John Pollock of Woodland Heritage Services Limited, for a report entitled Côté Gold Project, Draft Environmental Assessment Report Technical Support Document, Archaeological Resource Assessment of the IAMGOLD Côté Gold Project area, Chester, Yeo and Neville Townships, Sudbury District, Ontario, submitted in draft to IAMGOLD Corporation September 27, 2013. Further telephone and email communication with Dr. Pollock occurred in September and October, 2013; ▪ identification of cultural heritage landscapes and built heritage resources within the study area through the analysis of major historical themes and activities, historic mapping and consultation with Dr. Pollock; ▪ identification of proposed changes in the study area and the consequent risks to significant built heritage and cultural heritage landscapes; and ▪ formulation of mitigation recommendations. Key Qualifications: Linda Axford, MLA, Senior Heritage Specialist - Ms. Axford has been working in heritage planning since 2001. She has conducted historical background research, field surveys, analysis of built heritage and cultural landscapes and report writing. She has worked in municipal government and is very knowledgeable about Federal and Provincial planning policy as it relates to heritage. She holds a Masters degree in Landscape Architecture, an Honours Bachelor of Arts in History and is a member of the Canadian Association of Heritage Professionals.	None.	n/a

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424	Ministry of Natural Resources and Forestry - Timmins District	Please note that as of June 30th, 2013, all endangered and threatened species listed on the Species at Risk in Ontario List now receive habitat protection (either general or regulated) under the <i>Endangered Species Act, 2007</i> . Please ensure that habitat protection is considered in updated documents	The comment has been noted. The EA has been prepared in compliance with this requirement.	None.	n/a
425	Ministry of Natural Resources and Forestry - Timmins District	Mine Closure: Some roads identified in the plan are currently the responsibility of the SFL. These roads are to be returned to the SFL, and not removed at the end of operations.	The comments has been noted and will be considered when preparing the Closure Plan	None.	n/a
426	Ministry of Natural Resources and Forestry - Timmins District	Figure 1-3 Township around Pebonishewi Lake is not a disposition of Crown land, this has been reverted back to the Crown.	At the time of Amended EIS / Final EA Report preparation, the MNDM CLAIMaps website included a record / disposition around Pebonishewi Lake. IAMGOLD assumes the MNRF is aware of information that has not yet been published on CLAIMaps and has removed the disposition around Pebonishewi Lake accordingly.	Figure 1-3 has been revised to remove a disposition polygon from around Pebonishewi Lake	Figure 1-3
427	Ministry of Natural Resources and Forestry - Timmins District	Page 1-7, Section 1.5 Gogama does not have jurisdiction over land. Land is either Crown or patent. There are no lands in Gogama owned by MNRF for management of fish and wildlife.	This paragraph has been removed.	The following paragraph has been removed from Section 1.5: "Management of land at the Project site and its surroundings are either under the jurisdiction of the Province (Crown land) or of Gogama, and it is private patented land. Some lots in Gogama are owned by the Ministry of Natural Resources for the management of wildlife or fish."	Section 1.5, first paragraph
428	Ministry of Natural Resources and Forestry - Timmins District	Figure 6-12 There are no access points at Hwy 144/560 or Hwy 144/661. Many camp site points are not accurate.	The southernmost access point show on the current map is an error and it has been removed. The camp site locations have been plotted based on existing maps (i.e., 4M Canoe Route map on the Gogama website; http://www.gogama.ca/canoe.html).	The southernmost access point has been removed from Figure 6-12.	Figure 6-12
429	Ministry of Natural Resources and Forestry - Timmins District	Figure 9-28/ Figure 9-29 Legend doesn't match with lines/colours shown in data frame. Whole model area not shown. Please edit.	Please refer to Figure 4-3 in Appendix H (Hydrogeology TSD) for the complete model area. Figures 9-28 and 9-29 have been modified such that the legend now better matches the features shown in the figure.	The legends on Figures 9-28 and 9-29 have been revised to better match symbols used in the figures.	Figures 9-28 and 9-29

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430	Ministry of Natural Resources and Forestry - Timmins District	<p>Appendix F</p> <p>It is unclear what air quality data was used in this report. Was one year of data used from on-site recordings? It appears that five years of data was used from sites hundreds of kms away. Why was MNRF meteorological data not used? Please clarify.</p>	<p>Climate Data</p> <p>The existing climatic conditions at the Project Site were compiled from the Environment Canada Climate Normals database which provide 30-year climate normals for Sudbury, Timmins, and Sault Ste. Marie. This data was obtained from meteorological stations in northern Ontario that would generally experience similar weather conditions. Precipitation data for Gogama, ON was included in Appendix F (Air Quality TSD).</p> <p>The dispersion modelling was performed with meteorological data for Sudbury Ontario (2005-2009); this meteorological station is at a distance of 130 kilometres from the Project boundary which is considered to be reasonable for a northern Ontario modelling assessment.</p> <p>Baseline Air Quality Data</p> <p>The baseline Air Quality data was obtained from an on-site monitoring program for TSP, PM₁₀, metals, NO₂, and SO₂, and was supplemented by regional air quality data collected at MOECC monitoring stations at Sudbury, Sault Ste. Marie, and North Bay.</p> <p>IAMGOLD is not aware of publicly available air quality or meteorological data from MNRF sources.</p>	None.	n/a
431	CEA Agency	<p>PD1-1</p> <p>EIS Report, Section 1.3, Section 5.5.2</p> <p>The EIS states that the location of the low-grade ore stockpile was available because the safe setback distance away from the open pit for the retention dam on Three Duck Lake (upper) will expose "an area suitable for this application".</p> <p>It is unclear how the distance for the setback of the retention dam was selected and whether it was controlled strictly by the safety case for mining operations within the open pit or whether the dam was pushed back further into Three Duck Lake away from the open pit than needed strictly for the safety case to accommodate plans for a low-grade ore stockpile. If the latter situation, then this results in a greater impact on Three Duck Lake than absolutely necessary for safe operation of the mine.</p> <p>The response to this information request will assist the Agency to determine the project's potential effects to fish habitat.</p> <p>a) Provide a description of any alternative areas considered for the low-grade stockpile area</p>	<p>The location of the retention dam was driven by safety considerations for the mining operation. Based on the analysis of the results of the geotechnical investigations, the safest location for each retention dam was selected. The specific location of the retention dam east of the future low-grade ore stockpile was selected based on a multitude of factors, however, key considerations were the fact that the rock conditions are favorable at this location, and also the fact that the lake narrows at this location, thereby reducing dam length, which in turn adds safety to the structure. Based on the available land created by the retention dam, and optimal location relative to the open pit and ore processing plant, the low-grade ore stockpile location was determined to be optimal and no suitable alternatives have been identified.</p>	None.	n/a
432	CEA Agency	<p>PD1-2</p> <p>EIS Report, Section 5.3.3</p> <p>The EIS states that 225 tonne off-highway haul trucks will be used to transport to the primary crusher or stockpiles ore and waste rock. However, the haul roads are not shown on any map or figure, so potential effects (dust, runoff, spills) cannot be fully appreciated.</p> <p>The response to this information request will assist the Agency to determine the project's potential effects to the terrestrial landscape, migratory birds, water quality, fish and fish habitat.</p> <p>a) Provide in a map or figure for the location of the ore and waste rock haul roads for use by the 225 tonne heavy trucks.</p>	<p>The foreseen truck routes were used for the prediction of effects. They are shown in Appendix G (Noise and Vibration TSD), Figures 10 and 11 and Appendix F (Air Quality TSD), Figure 6.</p>	None.	n/a

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433	CEA Agency	<p>PD1-3 EIS Report, Section 1.3, Section 5.11.1</p> <p>In the EIS, it is identified that some material for tailings dam construction will need to be stockpiled for short periods of time for the construction of the Tailings Management Facility (TMF). The EIS indicates that it is planned to place these small and temporary stockpiles within the future TMF footprint so as to avoid additional clearing. The Proponent also identifies that general laydown areas will be required near the ore processing plant during the construction phase.</p> <p>With the exception of the above, the details on other laydown areas are vague and undefined. The creation of laydown areas is likely to prompt the clearing of vegetation and include the temporary storage of construction materials that may consist of overburden, crushed waste rock, or aggregate that could be a source for sediments and other contaminants mobilized by precipitation.</p> <p>For the management of water quality it would be of benefit to optimize and minimize the use of these laydown areas. The creation of laydown areas may have other environmental effects. The response to this information request will assist the Agency to determine the project's potential effects to the terrestrial landscape, migratory birds, and water quality.</p> <p>a) Provide a map which indicates the location(s), boundaries and sizes of the laydown area(s) within the TMF footprint, adjacent to the ore processing plant, and any other areas for which it is planned to utilize land for the laydown of equipment and materials.</p> <p>b) Provide a description of the predicted environmental effects of the construction and operation of laydown areas during the construction phase of the project.</p> <p>c) Provide a description of the planned duration for which these laydown areas will be used, and what mitigation measures will be in place during their use.</p>	<p>Exact laydown area locations will be determined by contractors during the construction phase. Laydown areas will be within the TMF and inside or in close proximity to the ore processing plant in areas that will require the clearing of vegetation for operational purposes. As such additional clearing for laydown areas is not expected. The effects prediction considers all effects due to construction and operations phase activities, including possible release of suspended solids from cleared areas. Since these areas will be cleared for other purposes, the duration of laydown activities would not change the effects related to vegetation removal, terrestrial landscape, migratory birds, and water quality.</p>	None.	n/a
434	CEA Agency	<p>PD1-4 EIS Report, Section 5.7</p> <p>The EIS states that with respect to overburden that "Prior to development of the TMF dams, topsoil as needed, will be stripped from the TMF area. This topsoil may be used in construction of the channel realignments or be stockpiled around the TMF footprint where appropriate in low height, small stockpiles, to be used for future closure activities." There is no information in the EIS on the exact locations or how the drainage from these stockpiles will be managed and monitored during the time that the overburden is stockpiled and before the material is utilized in rehabilitation of the site.</p> <p>Furthermore, it is unclear whether the creation of new watercourse realignments may result in the clearing of overburden and result in additional stockpiles being necessary for overburden gathered during construction of the engineered watercourse channels.</p> <p>The response to this information request will assist the Agency to determine the project's potential effects to the terrestrial landscape, migratory birds, and water</p> <p>a) Provide in a map or figure the location(s) of the overburden stockpiles associated with the TMF and the new watercourse realignments (if applicable)</p> <p>b) Provide a description of the predicted environmental effects of the construction and operation of overburden stockpiles during all phases of the project</p> <p>c) Provide a description of how drainage from these stockpiles will be managed and monitored.</p>	<p>Overburden will be stockpiled in the MRA, and only the small quantity that may be stripped from the proposed TMF area may be stockpiled close to it's perimeter at an appropriate location.</p> <p>Overburden cleared from the construction of the proposed watercourse realignments will be used in their construction or stockpiled in the MRA.</p> <p>a) No additional overburden stockpiles are planned for the TMF or the water course realignments.</p> <p>b) All expected effects associated with the construction and operations phases are included in the EA report. No additional effects prediction required.</p> <p>c) Runoff for topsoil stockpiles around the TMF would be managed similarly as in the MRA, directing flow towards the TMF seepage collection ponds or returned to the TMF. The final design will be optimized for water collection and recycling through ongoing engineering studies.</p>	None.	n/a

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435	CEA Agency	<p>EA1-1 5.11, Chapter 9</p> <p>The EIS has provided a brief summary of the explosives manufacturing and storage facilities that will be located at the project site, including a proposed location (Figure 1-2).</p> <p>Based on section 10.1.2 of the EIS Guidelines, “the proponent shall describe any change that may be caused by the project on the environment, which is defined as the components of the Earth, including:</p> <ul style="list-style-type: none"> - Land, water and air, including all layers of the atmosphere; - All organic and inorganic matter and living organisms; and - The interacting natural systems that include the components described above. <p>These descriptions will be integrated into the effects assessment sections of each VC included in the EIS”.</p> <p>Some changes to the environment that that are directly linked or necessarily incidental to the provision of a licence for the explosives manufacturing and storage facilities by NRCan are described (e.g. impacts to air quality from construction of project infrastructure) however, some information is missing.</p> <p>The response to this information request will assist the Agency to determine the project’s potential effects to the environment as a result of a federal authority exercising a duty or power.</p> <p>a) Identify the changes to the environment that may result from the construction, operation or decommissioning of the explosives manufacturing and storage facility and any mitigation or management practices that will be implemented to minimize impacts to the environment, include the following at a minimum.</p> <ul style="list-style-type: none"> ▪ Construction of explosives manufacture and storage: <ul style="list-style-type: none"> ○ Air quality ○ Vegetation and Soils ○ Water Quality ▪ Operation of explosives manufacture and storage: <ul style="list-style-type: none"> ○ Water Quality ▪ Environmental effects of accidents and malfunctions: <p>b) Provide the following explosives factory or magazine management plans and procedures:</p> <ul style="list-style-type: none"> ▪ Spill Contingency Plan ▪ Emergency Response Plan ▪ Operating Procedures. 	<p>a) No large scale environmental effects are anticipated from construction and operation of the explosives manufacturing and storage facilities relative to other site features. The explosives preparation process does not involve large case air emissions. The removal of vegetation required to build the explosives manufacturing and storage facility is included in the overall footprint of the Project. No industrial wastewater effluents are anticipated from the explosives manufacturing and storage facility; therefore no effects on water quality are anticipated. More detailed information will be provided with the application for the licence for the explosives manufacturing and storage. Accidents and malfunctions related to the manufacturing and storage of explosives are described in Section 13.2.16 of the EA report.</p> <p>b) The accidents and malfunctions section of the EA considers events related to accidental explosions. Full Spill Contingency Plans, Emergency Response Plans and Operating Procedures will be developed once the contract for the construction of the explosive manufacturing facility has been awarded, and then submitted as part of the application under the <i>Explosives Act</i>.</p>	None.	n/a

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436	CEA Agency	<p>AE1-1 Appendix F, Section 5.2.3, Tables 5-2 and 5-3, p. 5-5 to 5-6; Appendix F, Section 5.2.3, p.5-9; Appendix F, Appendix II</p> <p>Baseline air quality data in the project area were obtained from a number of sources including the Canadian Air and Precipitation Monitoring Network (CAPMoN), National Air and Pollution Surveillance Network (NAPS), and the proponent's own on-site monitoring station. In emission summary tables (Appendix F, Section 5.2.3, Tables 5-2 and 5-3), the background concentration of each compound is unclear, and the source used to determine the background concentration of each compound is also unclear. (In Appendix F, Section 5.2.3.2, page 5-9, only background levels for particulate matter are stated.)</p> <p>a) Provide the background levels that were used for each compound in Tables 5-2 and 5-3, preferably by adding a column to each table. Indicate whether these background levels were used in the assessment summarized in Table 5-3. Provide a rationale if these background levels were not used.</p> <p>b) Provide a rationale for not including PM_{2.5} in background monitoring at the project site.</p> <p>c) Provide the locations and distances to the project site of the CAPMoN monitoring stations that were used in this report.</p>	<p>a) A table summarizing the background concentrations for each effects assessment indicator has been prepared and included in the Addendum to Appendix F (Air Quality TSD).</p> <p>b) The baseline PM_{2.5} concentration was estimated to be 50% of the PM₁₀ measured at the on-site air monitoring station; this assumption is frequently used, and is based upon an Environment Canada (EC) study of particulate monitoring data at 14 sites in Canada between 1986 and 1994 (EC 2000).</p> <p>PM_{2.5} data from Environment Canada's Sudbury (~120 km) and Sault Ste. Marie (~190 km) air quality stations were also provided in the baseline report in support of the reasonableness of the estimate for background PM_{2.5} in the study area and to provide a longer term particulate trend.</p> <p>With the on-site PM₁₀ data and the PM_{2.5} data from the two stations available, it was determined that enough data were available and that monitoring of background PM_{2.5} would not be needed. This is appropriate as it is the larger size fractions that are of primary concern from material handling and mining activities while PM_{2.5} is emitted from combustion sources and not mining and material handling fugitive dust sources. Further, significant transboundary influences of PM_{2.5} are not anticipated from this site as the maximum effects were modelled along the property boundary.</p> <p>c) The CAPMoN Algoma station is located approximately 200 km southwest of the Project site, and approximately 60 km north of Sault Ste. Marie.</p>	<p>A table summarizing background concentrations of assessment indicators has been provided in the Addendum to Appendix F.</p>	<p>Addendum to Appendix F</p>
437	CEA Agency	<p>AE1-2 Appendix F, Section 4.2.5, Table 4-6</p> <p>Average concentrations for chromium, lead and nickel at the Project site are shown to be less than the method detection limits. No information is provided as to how the average concentrations were calculated.</p> <p>The response to this information request will assist the Agency in understanding baseline air quality conditions, in order to determine potential environmental effects to Aboriginal peoples resulting from the project.</p> <p>a) Provide an explanation of how average concentrations are calculated when samples have concentrations below the method detection limits.</p>	<p>Non-detectable concentrations were handled in accordance with the recommendations of the MOECC's Operations Manual for Ambient Monitoring in Ontario. All non-detects were reported as ½ the detection limit, and the average concentrations were calculated based on ½ the detection limit. As a result, samples sets with mainly non-detectable levels, are reported as an average that is below the detection level.</p>	<p>None.</p>	<p>n/a</p>

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438	CEA Agency	<p>AE1-3 EIS Report-Section 9.2.2.1, p. 9-13; Appendix F Section 5.1, p.5-1; EIS Report, Section 5.11.1, p. 5-30; Section 11.2, Table 11-3, p.11-21 to 11-23, Appendix F, Section 5.2.1, p. 5-2</p> <p>The proponent indicates in the EIS Report, Section 9.2.2.1, that it only conducted an air quality (AQ) assessment for the operation phase of the project. The proponent states that activities in the construction phase use similar mining equipment as the operations phase, and that construction phase effects will be less, and of shorter duration than those predicted for operational phase.</p> <p>Environment Canada has found, in reviewing mining projects, that the range of activities in the construction phase cannot be directly compared with that in the operation phase. For example, transportation emissions may differ as there will be (according to the EIS Report, Section 5.11.1, p. 5-30) approximately 1,500 workers during the construction phase, compared to approximately 500 workers during the operation phase. This could result in higher mobile emissions in the construction phase from passenger cars and trucks, along with the additional use of diesel generators for power and aggregate pits during construction. Environment Canada has found, from AQ assessments of other mining projects, that exceedances of air quality standards for particulate matter and NO_x (for 1-hr and 24-hr averaging period) have been observed during this phase in those instances.</p> <p>An AQ assessment for the construction phase would verify whether or not the operation phase of the project is the bounding or worst-case in terms of potential air quality effects. This would facilitate the proponent's development of measures to ensure that compliance with standards is achieved throughout these phases. An AQ assessment for the construction phase would also confirm that the magnitudes of various indicators stated in Table 11-3, in the air quality discipline, are properly characterized.</p> <p>a) Provide an AQ assessment that incorporates the construction, operation and decommissioning phases of the project, including assessment of short term AQ impacts from site preparation and construction activities with a focus on NO_x, TSP, PM₁₀ and PM_{2.5}.</p> <p>b) Provide a worst-case scenario assessment during the construction phase, predicting NO_x, TSP, PM₁₀ and PM_{2.5} (for 1-hr and 24-hr averaging period) during construction, and with comparisons with AAQC and /or NAAQO.</p> <p>c) Provide a table with the emission sources and modelling results for the construction phase air emissions, since the releases of NO_x and particulate matter (TSP, PM₁₀ & PM_{2.5}) are the main issues in the site preparation and construction phase, and any exceedances, even short term, should be documented. If necessary, modify Table 11-3 to reflect the outcomes of the assessments described above.</p> <p>d) Include fugitive dust emissions from the TMF in the AQ assessment, with a control efficiency consistent with the proposed dust best management plan (DBMP).</p>	<p>a) A quantitative comparison of the material movements and on-site traffic during construction and material movements and on-site traffic during operations is provided as part of the Addendum to Appendix F (Air Quality TSD).</p> <p>The comparison demonstrates that as a result of significantly lower activity, and therefore lower emissions, construction effects would be of a lower magnitude than those during the maximum year of the operations phase that was assessed. As a result, the assessment of maximum operations provides the maximum impact of both the development phase and the operations phase.</p> <p>b) The maximum emissions scenario was modelled; rather than modelling a specific year, a scenario was developed which consisted of the maximum material movements over the site life for each of the movements of ore, overburden, and mine rock, and maximum facility operating / production rates, and maximum haul truck and fleet activity.</p> <p>This scenario is detailed in the Addendum to Appendix F.</p> <p>c) The maximum emissions scenario was modelled, with the results of this worst-case presented in Table 11-3.</p> <p>d) A quantitative assessment of fugitive dust from the TMF has been prepared and provided in the Addendum to Appendix F.</p>	<p>A quantitative comparison of material movements and on site traffic for construction and operations has been provided in the Addendum to Appendix F.</p> <p>Additional information regarding the maximum emissions scenario has been provided in the Addendum to Appendix F.</p>	Addendum to Appendix F

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439	CEA Agency	<p>AE1-4 Appendix F, Section 5.2.2, p.5-3; Appendix F, Section 5.2.2, Tables 5-2 to 5-4, p.-5-5 to 5-7 The proponent states in Appendix F, section 5.2.2, page 5-3 that modelling in the AAQC assessment included emissions from mobile sources, while the O. Reg. 419/05 assessment considered stationary sources. It would be expected that the emission rates for the AAQC assessment should be different than O. Reg. 419/05 emission rates, but it appears that in Tables 5-2, 5-3 and 5-4 emission rates are the same for all the indicators under 3 different scenarios, whereas the modelled POI concentrations have different values.</p> <p>The response to this information request will assist the Agency in understanding changes to air quality caused by the project, in order to determine potential environmental effects to Aboriginal peoples resulting from the project.</p> <p>a) Clarify whether the emission rates for the scenarios that are summarized in Tables 5-2, 5-3 and 5-4 are accurate.</p>	<p>The maximum emission rates presented in the tables are identical as this rate was not adjusted to reflect which sources were modelled.</p> <p>A table is provided in the Addendum to Appendix F (Air Quality TSD) that identifies which sources were modelled for the AAQC assessment, and which were considered for the O.Reg. 419 assessment.</p>	<p>Sources modelled in the AAQC assessment have been provided in the Addendum to Appendix F.</p>	<p>Addendum to Appendix F</p>
440	CEA Agency	<p>AE1-5 Appendix F, Appendix III, Tables III-1,III-3 and III-5 In Appendix F, Appendix III, Table III-1, the emission estimate calculations for generator sets are not clearly shown, and the estimates could not be verified as some of the data required for calculations are not provided. In Appendix F, Appendix III, Table III-3, the emission estimate calculations for material handling could not be verified as there is not enough information provided. No rationale is given for the assumption of 75% control efficiency for water spray or enclosed drop. In Appendix F, Appendix III, Table III-5, no rationale is given for the assumption of 85% control efficiency for road dust emissions. The response to this information request will assist the Agency in understanding changes to air quality caused by the project, in order to determine potential environmental effects to Aboriginal peoples resulting from the project.</p> <p>a) Provide a detailed sample calculation for primary and secondary crushers and emission rate calculation for load haul truck (TSP, PM₁₀ and PM_{2.5}). Provide any assumptions made, operation hours, sulphur content in the fuel and equations used. Only use one generator set but include a sample calculation for each of the indicators. b) Provide a detailed sample calculation for emissions from material handling (TSP, PM₁₀ and PM_{2.5}), providing any assumptions made and operation hours. c) Provide a rationale for the assumption of 75% control efficiency for water spray or enclosed drop in material handling, and for the assumption of 85% control efficiency for road dust emissions.</p>	<p>a) As there will be baghouses controlling particulate emissions from both the primary and secondary crushing, the emission rates were estimated using the methodology cited in the Ontario Guideline A-10 Procedure for Preparing an Emission Summary and Dispersion Modelling report, Table C-2; the MOECC recommends using a very conservative outlet concentration of 20 mg/m³ for a baghouse dust collector. It should be noted that this concentration was conservatively applied to all baghouses, whereas the MOECC guidance allows for lower concentrations to be used in situations where there are multiple baghouses at a facility. The concentration of 20 mg/m³ was multiplied by the expected volumetric flowrate in order to estimate the emission rate, in g/s, for the dispersion modelling assessment.</p> <p>For the haul truck loading, the emission factor for high moisture ore (>4%) published in the United States Environmental Protection Agency AP-42 Emission Factor Compilation, Chapter 11.24 was used. Factors for uncontrolled handling of TSP and PM₁₀ are published in Table 11.24-1; the factor for PM_{2.5} was estimated using the particle size distribution published in the National Pollutant Release Inventory Toolbox for aggregate handling transfer points.</p> <p>b) Particulate emission rates for all material handling were estimated using the same emission factors as haul truck loading.</p> <p>c) The material handling will be mainly controlled by water dust suppression (attached) which could provide up to 90% (WRAP Fugitive Dust Handbook) control efficiency. The control efficiency of only 75% was conservatively applied for PM emission rate calculations.</p> <p>The road dust emissions are to be controlled by enforcing a speed limit, and water and dust suppressant application. With these measures, a control efficiency of 85% can be considered conservative. In accordance with the supporting documents (United States Environmental Protection Agency, AP-42 Section 13.2.2 for unpaved roads; International Finance Corporation Environmental, Health, and Safety General Guidelines) the watering could provide up to 95% - 98% control efficiency and limiting the vehicle speed on roadways is up to 80% effective.</p> <p>Further the control efficiencies of two or more controls in concurrent application are multiplicative. This option was not exercised deliberately and only one control efficiency of 90% for watering was applied for the road dust emission rates calculation in Tables C3 (1-3). This approach should be considered conservative.</p> <p>The calculations have been provided in the Addendum to Appendix F (Air Quality TSD).</p>	<p>Calculations for control efficiencies for water dust suppression are provided in the Addendum to Appendix F.</p>	<p>Addendum to Appendix F</p>

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441	CEA Agency	<p>AE1-6 Appendix F, Section 3.1.5, p.3-5</p> <p>The proponent indicates in Appendix F, Section 3.1.5, page 3-5 that “copper sulphate does not have a standard under O. Reg. 419/05, nor does it have an AAQC. A criterion of 20g/m³ was established by a certified toxicologist to be protective of health.” It is unclear how the criterion for copper sulphate was derived.</p> <p>The response to this information request will assist the Agency in determining potential effects of changes to the environment on Aboriginal peoples resulting from the Project.</p> <p>a) Provide a rationale for the criterion of 20 g/m³ for copper sulphate used in this report.</p>	<p>A literature review was conducted to identify regulatory limits for copper sulphate specific to the inhalation route of exposure, however information pertaining to the toxicity of copper sulphate was sparse. However, there is sufficient information discussing the toxicity of copper and for the purpose of this assessment, it was assumed to be the contributor to potential toxicity over the sulphate portion. Therefore, toxicity reference values for copper were searched and used to assess toxicity to copper sulphate.</p> <p>Toxicological reference values for copper are limited. The United States Environmental Protection Agency has not developed reference concentrations for elemental copper. The Agency for Toxic Substances and Disease Registry (ATSDR) lists acute oral and sub-chronic oral minimal risk levels (MRLs) of 0.01 mg/kg/day based on gastrointestinal effects. However, on the basis that the available data on the toxicity of inhaled copper were considered inadequate ATSDR has not developed MRLs for inhalation. California’s Office of Environmental Health Hazards Assessment has established an acute reference exposure level for copper of 100 mg/m³ based on an occupational exposure limit.</p> <p>A maximum point of impingement limit of 20 µg/m³ based on the intermediate MRL of 0.01 mg/kg/day as published by ATSDR (2004) was derived for use in the current assessment. The MRL is based on a drinking water study in adults by Araya et al. (2003). In the study, males and females were exposed to 0, 2, 4, or 6 mg/L of copper in drinking water (in the form of copper sulphate) for a period of two months. Daily dosages of copper were 0, 2.7, 5.9 and 11.3 mg/day were administered and blood samples for a subset of the study subjects were analysed for red blood cell copper, monocyte copper, serum copper, serum ceruloplasmin, superoxide dismutase, aspartate aminotransferases, alanine amino transferases, gamma-glutamyltransferase and hemoglobin levels. A no observed adverse effects level of 0.042 mg/kg/day (i.e., 2.7 mg/day) for gastrointestinal effects in males and females was derived. No alterations in the copper status parameters or biomarkers of liver disease were noted. Using the no observed adverse effects level of 0.042 mg/kg/day and an uncertainty factor of 3 for human variability, a MRL of 0.01 mg/kg/day was derived (ATSDR, 2004).</p> <p>Using the oral intermediate MRL of 0.01 mg/kg/day and the standard body weight and breathing rate of a toddler (as provided by Health Canada) of 16.5 kg and 8.3 m³/day, a maximum point of impingement of approximately 20 µg/m³ was derived.</p>	None.	n/a
442	CEA Agency	<p>AE1-7 EIS Report, Section 10.2, Table 10-1, p.10-2 to 10-9; Appendix F, Section 6.0, p.6-1 to 6-2; Appendix V, Section 1.1, p.1-1</p> <p>Environment Canada agrees with the proponent’s commitment to develop a dust best management plan (DBMP) and other mitigation plans for greenhouse gases (GHG) and engine and vehicle maintenance. However, no details are provided in terms of:</p> <ul style="list-style-type: none"> ▪ objectives to be achieved through air quality mitigation measures; ▪ listing of methods to be applied and the conditions that trigger mitigation measures; ▪ best management plan for fugitive dust and planning measures aimed at reducing fuel and power consumption for the site. <p>The response to this information request will assist the Agency in understanding proposed mitigation measures with relation to air quality, in order to determine potential environmental effects to Aboriginal peoples resulting from the project.</p> <p>In relation to information request AE1-7, see EC-76 in Annex 3 for references to codes of practice and regulations that are relevant to the development of air quality mitigation.</p> <p>GHG emission plan, Engine Maintenance Program and other mitigation actions with relation to air quality, during the construction, operation and decommissioning phases.</p>	<p>The various regulations and Codes of Practice are acknowledged and will be followed by IAMGOLD.</p> <p>The Provincial ECA for mining operations will require a fugitive dust best management plan as a condition of approval to ensure that all fugitive dust sources are identified and appropriate mitigation measures are implemented, and tracked.</p> <p>The fugitive dust best management practices plan will be submitted to MOECC for approval as part of the ECA application package; a copy of the plan will be provided to Environment Canada at that time.</p>	None.	n/a

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443	CEA Agency	<p>AE1-8 Appendix F, Section 7.0, Table 7-1, p. 7-2; EIS Report, Section 16.0, p.16-1 and Table 16-1, p. 16-3; Appendix Y, Table 4, p. 51</p> <p>It is unclear whether ambient air quality monitoring will be conducted for PM₁₀ and PM_{2.5} during construction and operation phases of the project. The monitoring measures in the EIS Report, Section 16.4, Table 16-1 and the Commitment Table in Appendix Y, Table 4 indicate that TSP, metals, NO_x/SO₂ will be monitored during construction and operation phases. It should be clarified in Appendix F, Section 7.0, Table 7-1, whether PM₁₀ and PM_{2.5} will be monitored in the construction and/or operation phases.</p> <p>Environment Canada recommends that real-time ambient air monitoring should be undertaken during site preparation, construction and operation phase for TSP, PM₁₀, PM_{2.5}, metals and NO_x/SO₂ at a minimum. PM₁₀ and PM_{2.5} should be included in the list of substances to monitor, since exceedances were predicted during the operation phase according to Appendix F, Section 5.2.3.2, p. 5-9.</p> <p>The response to this information request will assist the Agency in understanding proposed monitoring programs with relation to air quality, in order to determine potential environmental effects to Aboriginal peoples resulting from the project.</p> <p>a) Provide a description of the final environmental monitoring plan for air quality in the construction and operation phases, including monitoring parameters, methods, sampling locations, applicable standards, duration and frequencies. These plans should clearly outline action levels that may trigger certain mitigations.</p>	<p>The Provincial ECA for mining operations will require an appropriate ambient air monitoring program as a condition of approval. The air monitoring program will be developed in consultation with the MOECC to be protective of ambient air quality.</p> <p>A monitoring plan will be submitted to MOECC for approval that details the target parameters, methodologies, and the number and location of monitor stations.</p> <p>It is expected that the monitoring will include TSP and metals on the TSP size fraction, PM₁₀, dustfall and passive monitoring for NO₂ and SO₂. The PM_{2.5} concentrations would be monitored as a fraction of the PM₁₀; this monitoring for PM_{2.5} is appropriate as it is the larger size fractions that are of primary concern from material handling and mining activities while PM_{2.5} is emitted from combustion sources and not mining and material handling fugitive dust sources. Further, significant transboundary influences of PM_{2.5} are not anticipated from this site as the maximum effects were modelled along the property boundary.</p> <p>The final selection of target parameters and station locations will be done as part of the ECA approval process with the MOECC.</p>	None.	n/a

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444	CEA Agency	<p>GW1-1 EIS Report, Sections 5.7, 5.10.4; 5.14.2, 6.0, 9.0, Appendix H Hydrogeology TSD <u>Tailings Management Facility</u></p> <p>IAMGold has provided limited information on the hydrostratigraphy of the area in the vicinity of the proposed Tailings Management Facility (TMF) and no cross-sections depicting the hydrostratigraphy and groundwater flow directions are presented for the TMF. Additionally, there are no diagrams depicting groundwater flow patterns near the TMF for baseline conditions (e.g. plan view diagram). The proponent plans to collect water seeping from the TMF to groundwater through the use of ditches and seepage collection ponds, however details on seepage collection are not provided. Specifically, the proponent has not provided information on the effectiveness of containment of tailings fluids in the TMF.</p> <p>This information is important to determine if there will be impacts to groundwater resulting from the construction and operation of the TMF. It is noted that groundwater modelling was not utilized to model baseline conditions or potential impacts to groundwater in the vicinity of the TMF.</p> <p>The proponent does not anticipate that water quality in the TMF will be poor, however predictions indicate that TMF water will contain residual cyanide, ammonia and metals (Cu) and there is the possibility that sewage sludge may also be disposed of in the TMF. Given these concerns, it seems reasonable that additional characterization of the groundwater regime and seepage be provided.</p> <p><u>Open Pit</u></p> <p>The proponent has presented a significant amount of baseline hydrogeological information for the area around the proposed open pit and Mine Rock Area (MRA), and has presented a detailed numerical 3D model predicting drawdown-related impacts to groundwater resulting from pit dewatering. This information is generally sufficient and well presented. However, information on groundwater flow paths and rates for the baseline case and project case are lacking. There are no maps depicting groundwater flow directions and rates.</p> <p>It is important to understand the baseline flow regime and to predict how this regime may change as the pit is dewatered and then allowed to fill once mining has ceased. The proponent has modelled drawdown resulting from pit dewatering, but it has not modelled or considered how groundwater flow will change once the pit has filled following closure. If there is a significant change in groundwater flow regime, water from the filled open pit could be transported via shallow groundwater to surface water bodies, providing a conduit for potential contaminants present in the pit water.</p> <p>This information is requested as a clarification and to be able to determine potential environmental effects to water quantity and quality, and subsequently fish and fish habitat.</p> <p>a) Provide cross-sections through the location of the proposed TMF depicting the hydrostratigraphic units and groundwater flow directions (baseline case).</p> <p>b) Provide a plan view diagram of the proposed TMF, open pit area depicting groundwater flow directions and rates (baseline case).</p> <p>c) Conduct numerical groundwater modelling to better understand baseline hydrogeological conditions at the TMF, to characterize seepage from the TMF and to quantify potential impacts resulting from the TMF (i.e. changes to groundwater flow patterns and rates, and water quality impacts resulting from seepage).</p> <p>d) Provide details on the effectiveness of TMF containment to minimize seepage. (e.g. predicted seepage rates beneath the TMF and through the TMF dams and sides without dams).</p> <p>Comment continues on next page.</p>	<p>Seepage control measures were included in the TMF and MRA designs. The seepage control measures put in place follow standard industry practice with the intent of reducing to the extent practical seepage losses from both the MRA and TMF. At the TMF, seepage control measures include the seepage collection ditches and ponds as well as the use of geomembrane liner in the perimeter containment embankments. A total of 6 pump stations will be provided at topographic low points around the perimeter of the TMF dams to collect and pump seepage back to the TMF. At the MRA, seepage control measures include seepage collection ditches and ponds in low lying areas. It should be noted that the ore stockpile is located within the extent of drawdown of the open pit, and as such, seepage from the ore stockpile would report to the open pit from where it is pumped to the mine water pond and treated prior to discharge.</p> <p>As part of the pre-feasibility study design of the MRA and TMF, the effectiveness of the proposed seepage control measures was evaluated with a two dimensional seepage analyses for steady state condition using the SEEP/W module of the commercially available software package GeoStudio 2007. Details of this seepage modelling are included in the Addendum to Appendix H (Hydrogeology TSD).</p> <p>The seepage estimates that were calculated for the TMF and MRA were subsequently included in the Water Quality Modelling and are included as a load to the receiving environment.</p> <p>More detailed information on the hydrostratigraphy of the area in the vicinity of the proposed TMF, which includes cross-sections, groundwater elevations and flow maps have been incorporated into the Addendum to Appendix h (Hydrogeology TSD).</p>	Additional information provided in an Addendum to Appendix H (Hydrogeology TSD).	Addendum to Appendix H

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444 cont	See previous page.	<p>e) Provide information on the effectiveness of the project's proposed seepage collections measures. Specifically, how deep will seepage collection ditches or ponds be? What percentage of seepage will be collected? What will be the fate of seepage that is not collected?</p> <p>f) Provide a discussion of how the groundwater flow regime will change in the vicinity of the open pit as a result of the project.</p> <p>g) Provide a plan view diagram of the proposed open pit area depicting groundwater flow directions and rates (baseline case).</p> <p>h) Provide a discussion of how the groundwater flow regime will change in the vicinity of the open pit as the pit is allowed to fill following closure.</p> <p>i) Provide a discussion of potential effects to groundwater quality and surface water receptor quality resulting from groundwater pathways originating from the filled open pit.</p>	See previous page.	See previous page.	See previous page.
445	CEA Agency	<p>GW1-2 EIS Report, Section 5.10.3 (p. 5-22)</p> <p>Details on freshwater to be obtained from groundwater for potable and other uses (e.g. truck washing) are not provided. Clarification is needed on the location of the well(s) to be used for this purpose and on the aquifer unit where the water will be obtained. Additionally, the total daily rate of water to be pumped is unclear.</p> <p>The proponent indicates that there are 6 wells within 15 km of the project site. However, NRCAN was unable to find any discussion of how the project may affect the well users. This information is requested to determine if there is the potential for existing wells to be affected by project activities.</p> <p>This information is requested as a clarification and to be able to determine potential impacts to potable well users and the environment resulting from the pumping.</p> <p>a) Provide a map indicating the location of the freshwater wells to be used for potable water and other uses. Specify the aquifer unit.</p> <p>b) Clarify the total daily rate of water to be pumped.</p> <p>c) Provide a discussion on any potential impacts to well users resulting from the project's groundwater taking activities.</p>	<p>It is anticipated that potable water for both the construction camp and operations camp will be obtained from on site wells or surface water supplies. The location of the possible wells or surface water intakes have to date not yet been identified. However, it can be assumed that water needs would likely be on the order of 375 m³/day during construction and 150 m³/day during operations, based on a water consumption of approximately 250 L/day/person and a total of 1,500 and 600 people camp during construction and operations phases respectively. Although the proposed well locations are currently unknown, this water taking will require a Permit to Take Water from the MOECC which would incorporate a technical study to assess the impact of this taking on the local groundwater or surface water regime.</p> <p>Water budget analyses indicate average daily total lake outflows range from approximately 35,000 m³/day at Clam and Little Clam Lakes to 50,000 m³/day at Three Duck Lakes (Lower). As such, water takings on the order of 150 m³/day to 350 m³/day represent less than 1% of the total flow in nearby lakes.</p> <p>Additional information on existing water wells in the area is provided in the Addendum to the Hydrogeology TSD in Appendix H.</p>	Additional information has been provided in the Addendum to Appendix H (Hydrogeology TSD).	Addendum to Appendix H
446	CEA Agency	<p>SW1-1 EIS Report, Section 5.10.5, Section 5.10.6</p> <p>The preferred final effluent discharge location in the downstream end of Bagsverd Creek at Neville Lake has been identified but the location of the pipeline from the polishing pond to the discharge location has not been explicitly identified in any figures.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on water quality and fish and fish habitat due to discharges to the environment.</p> <p>a) Provide in a map or figure the location of the polishing pond and discharge pipeline at Bagsverd Creek.</p>	<p>The pipeline route will not cross Bagsverd Creek or any other water feature. The exact alignment has yet to be determined. In essence, the discharge pipeline will go directly north from the polishing pond towards the discharge point and will follow topographically suitable terrain.</p> <p>The polishing pond is shown in Figure 1-2 as the area labelled 'Polishing Pond Area' and is located immediately north of the TMF.</p>	None.	n/a

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447	CEA Agency	<p>SW1-2 EIS Report, Sections 5.4, 5.5, 5.5.1, 5.5.1.2, 5.5.2, 5.7, 5.8.2, 5.10, 5.10.5, 5.10.6.1, 5.11, 5.16.2.3, Water Quality Technical Support Document (TSD)</p> <p>The EIS states that engineered water management systems will be in place to collect surface drainage (runoff) and seepage from the TMF, MRA, low-grade ore stockpile, and other parts of the mine. The conceptual design of these systems has not been adequately described in the EIS.</p> <p>For example, the Water Quality TSD states:</p> <ul style="list-style-type: none"> ▪ "A series of 15 collection ponds (Mine Rock Storage Ponds; MRSPs) with connecting ditches are to be constructed around the perimeter of the MRA to collect runoff and toe seepage" ▪ "Low-grade ore will be stockpiled to the north of the open pit and east of the processing plant, as shown on Figure 1-2. Approximately 2 km of water collection ditches and four storage ponds will be constructed to collect runoff and toe seepage at the perimeter of the stockpiles, with water pumped back to the mine water pond." ▪ "Seepage losses from the TMF and runoff from the tailings dams will be collected at six Tailings Dam Seepage Ponds (TDSPs) and associated ditches located at the downstream toe of the tailings dams, with the collected seepage water pumped back to the reclaim pond." ▪ "...runoff from the area of the processing plant and associated facilities will be directed to the mine water pond." <p>Descriptions of the proposed mitigation measures, including but not limited to the above examples, should include the expected efficiencies of the various collection systems and structures, with details supported by an appropriate technical backdrop.</p> <p>The response to this information request will assist the Agency to determine whether the proposed water management measures are appropriate and effective for mitigation of the project's predicted water quality effects on fish and fish habitat.</p> <p>a) Provide conceptual designs and descriptions including figures and maps of the proposed water management systems to manage, contain, collect, and monitor surface drainage (runoff). b) Provide a quantitative assessment of the effectiveness of these measures for surface water runoff collection.</p>	<p>A discussion on the expected efficiencies of the various collection systems and structures has been included in the addenda to Appendix H (Hydrogeology TSD) and Appendix J (Water Quality TSD).</p>	<p>Additional information related to seepage loading rates is provided in the Addenda to Appendix H and Appendix J.</p>	<p>Addenda to Appendix H and Appendix J</p>
448	CEA Agency	<p>SW1-3 EIS Report, Section 9.6.2.2</p> <p>The EIS states that contact water is defined as "Contact water (i.e., water that has come into contact with mine rock, low-grade ore, the walls of open pit, or the tailings)."</p> <p>The definition of contact water is too limited and should be expanded to include water that comes into contact with overburden stockpiles, ore and waste rock haul roads, processing plant area and related maintenance buildings (with the potential to impact water quality, for example: truck washing), and explosives manufacturing areas. Water coming into contact with these areas of the project site may pick up contaminants prior to entering the waterways in the region.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and the efficacy of proposed water management measures used for mitigation.</p> <p>a) Expand the definition of contact water in Section 9.6.2.2. b) Revise, if needed, the prediction of effects to the environment and Valued Components to reflect the updated definition of contact water. c) Report and adjust the water management and monitoring plans to reflect updated definition of contact water.</p>	<p>a) The definition of Contact Water has been revised in Section 9.6.2.2 to clarify as follows: "water that has come into contact with mine works, components and their associated infrastructure". All water used for mine activities will be contained via the mine water pond for recycling, and pumped to the TMF and polishing pond.</p> <p>b) There are no changes to the predicted effects.</p> <p>c) Not applicable</p>	<p>The definition of contact water has been revised as detailed in the response.</p>	<p>Section 9.6.2.2 (second paragraph)</p>

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449	CEA Agency	<p>SW1-4 EIS Report, Section 11.2.1, Table 11-3</p> <p>The EIS states, in Table 11-3, that the only proposed mitigation measure during the construction phase for the indicator "Change in Water Quality" is Best Management Practices (BMPs).</p> <p>Be aware that the MMER requirements do apply during the construction phases of a mine.</p> <p>Recognizing that the use of BMPs in the early days of construction are the only practical means of managing surface drainage (runoff) water quality for the very short term, it is unclear why an engineered water management system is not considered as a mitigation measure during the later parts of the construction phase. As a result, it is unclear what the effects of erosion will be on surface water quality during the construction phase.</p> <p>The response to this information request will assist the Agency to determine effects of the project on water quality and the efficacy of proposed water management measures used for mitigation.</p> <p>a) Provide a quantified prediction of effects to water quality as a result of project construction activities.</p> <p>b) Provide a discussion of any additional mitigation measures which may be put into place over the course of construction.</p> <p>c) Provide a discussion of expected environmental effects to water quality as a result of construction of the mine, taking into account the mitigation in place during construction.</p> <p>d) Revise Table 11-3 to include any additional mitigation measures which will be put in place prior to completion of the construction phase.</p>	<p>The prediction of effects on water quality during the construction phase has been carried out qualitatively. Modelling of inefficiencies in the implementation of these practices carries considerable uncertainties and does not add value for the purposes of the EA.</p> <p>As there will be no process discharge during the construction phase, the main water quality concern during this period is the release of suspended sediments.</p> <p>It should be noted that the use of BMPs will be part of an overall engineered water management system which will be developed within the Sediment and Erosion Control Plans for the construction phase. BMPs include engineered structures that have been shown to successfully mitigate the potential effect of sediment runoff if implemented correctly and properly maintained. Sediment and Erosion Control plans will be developed using a risk based approach and will be thoroughly monitored. An adaptive management approach based on monitoring of the site will be applied to ensure environmental protection.</p> <p>Table 11-3 summarizes the mitigation measures. The full mitigation measures are described in Table 10-1. These include the use of earthwork methods to minimize slope length and grade, ditching, sediment ponds / traps, channel and slope armouring, use of natural vegetation buffers, vegetation of disturbed soil, and runoff controls (i.e., sediment fencing and check dams). During post-closure, erosion and sediment control would be focused on monitoring the success of closure activities.</p> <p>With these mitigation measures in place no significant water quality impacts are predicted, as described in Table 11-3 in the EA report.</p>	None.	n/a
450	CEA Agency	<p>SW1-5 EIS Report, Section 5.3.4</p> <p>The EIS provides results of the mine rock characterization program in reference to Metal Leaching and compares these results to the O.Reg. 560/94 and Provincial Water Quality Objectives.</p> <p>For the Federal Environmental Assessment and specifically for determining the lethality of the leachate to aquatic life, a comparison should be made to the CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life and to the Metal Mining Effluent Regulations.</p> <p>The response to this information request will assist the Agency to determine effects of the project on water quality, and fish and fish habitat.</p> <p>Provide mine rock leachate comparisons to the MMER and to the CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life in the EIS and in particular in Section 5.3.4.</p>	<p>Section 5.3.4 provides a brief summary of open pit material geochemistry. Section 6.3.4 of the Amended EIS / Final EA Report provides additional information on geochemistry and Appendix E includes all information related to geochemistry. To carry out the prediction of effects on water quality this information is then used in the water quality prediction of effects, which is provided in full detail in Appendix J.</p> <p>Predicted concentrations in the drainage from the MRA and low-grade ore stockpile are compared to applicable Federal and Provincial metal mining effluent limits in Appendix J, Section 4.3.2, Table 4-1. The drainage from the MRA and the low-grade ore stockpile report to the mine water pond prior to pumping to the polishing pond. Most of these flows will be recycled within the Project. However, surplus water is predicted to be discharged periodically during the open water season. The effect of these discharges with regards to aquatic toxicity are summarized in Section 9.9 of the EA reports and are described in full detail in Appendix N.</p>	None.	n/a

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451	CEA Agency	<p>SW1-6 Water Quality Technical Support Document (TSD), Attachment II Water Quality Modelling Report</p> <p>IAMGold indicates, on page 12 of the Water Quality Modelling Report, that "Contact water loading rates from the MRA were derived from estimates of rock tonnage and the results of humidity cell testing. Expected tonnages of mine rock over the Project life-of-mine were provided by G Mining Services Inc. (G Mining 2013, pers. comm.) and AMEC (AMEC 2013, pers. Comm.). Lithology-specific loading rates were assigned based on the relative tonnage proportions of the different rock lithologies and the results of humidity cell testing of 14 rock samples (labeled HC-1 through HC-14) from the Project. AMEC provided loading rates (in mg/kg/week) for the 14 humidity cell test samples, as well as sample lithologies and leach test data. The loading rates from week 0 to week 20 were not included in the load calculations, as it was assumed that these represented "first flush" conditions and are not representative of longer term, "steady state" conditions. As such, loading rates from weeks 20 through 34 were used to derive the loading rates; noting that kinetic testing is ongoing and expected to continue beyond the date of this report.</p> <p>34 weeks humidity cell testing is a short time to determine steady state. Based on NRCan's review, humidity cell loadings include weekly flushing that greatly exceeds site-specific drainage input.</p> <p>The first 20 weeks of humidity cell tests can provide some information on whether soluble sulphides exist initially in the sample and whether handling of the sample has led to some oxidation.</p> <p>The response to this information request will assist the Agency to determine effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide an explanation of why column tests using site-specific leaching rates were not conducted to provide loading measurement.</p> <p>b) Provide a comparison of the results of the humidity cell loadings with the results of the field cells for samples with similar sulphide and trace element content.</p> <p>c) Incorporate the first 20 weeks of the humidity cell tests into predicted loading with weighting based on portion of period of time being assessed.</p> <p>d) Provide an update on the humidity cell results. Indicate and discuss any changes that have occurred.</p>	<p>a) Humidity cells were selected for this work since this type of testing is recognized as appropriate for measuring primary reaction rates in the materials. Loading rates from humidity cells are expected to be conservative in terms of constituent release (less influenced by sorption and solubility constraints than column methods of testing). For the mass balance modeling approach utilized, humidity cells are an appropriate method for developing mass release source terms.</p> <p>b) Field cell upgrades were completed in 2014 and a comparison of field and humidity cell results is planned for early 2015.</p> <p>c) The humidity cell loading rates from weeks 20 through 34 were applied as a means of selecting data to model the longer term, "steady state" release rates of mass from the MRA, low-grade stockpile, and open pit at the end of operations or when the site facilities are at their ultimate extent; this approach was taken to conservatively account for the ultimate mine rock tonnage and ultimate open pit area at the site. In this context, and to simulate water quality over a range of climatic conditions, the water quality model simulated mass loading over a period of a calendar year (January to December) for average, dry, and wet climate years. The water quality modelling was not intended to be temporal, in that it did not simulate mass loading rates through time (i.e., over a number of consecutive years). Therefore, the recommendation of including the first 20 weeks of the humidity cell tests into predicted loading with time-based weighting does not fit with the modelling approach. Furthermore, at the end of operations, the mine rock pile is considerably larger (ultimate extent) and the freshly deposited material within the hydrologically connected zones would represent an immaterially small volume of the overall mine rock tonnage. For example, during the last year of operations, less than 1% of the overall mine rock will be deposited into the MRA. The use of the first 20 weeks would therefore be better applied to simulate the mass release rates from the mine rock during the early stages of operations, where water-rock interactions with freshly oxidized materials would be greater, and do not represent well the expected conditions at the end of mine life.</p> <p>d) Humidity cell results to week 90 have been inspected. For all 14 Humidity Cells, average release rates have in almost all cases declined or remained similar to previously reported average rates (weeks 20 to 34). The only consistent exception to this trend was aluminum which exhibited somewhat increased release rates for most humidity cells (HC-1, HC-2, HC-3, HC-4, HC-5, HC-6, HC-7, HC-11, HC-12, HC-13) with a typical increase of 30% observed in comparison to the previously reported average rates. Manganese release rates for two cells (HC-6 and HC-12) exhibited marginal increases on the order of 10% over previous average rates. It was also noted that for two cells (HC-9 and HC-10) while molybdenum exhibited an overall steady to decreasing long-term trend, there were a few oscillations observed with maxima up to 2x higher than previous average estimates for those cells. A detailed review of humidity cell data is planned for early 2015.</p>	None.	n/a

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452	CEA Agency	<p>SW1-7 Water Quality Technical Support Document (TSD), Attachment II Water Quality Modelling Report</p> <p>The basis for the assumption that “other lithologies” comprise 7%, or 44 Mt, of the waste rock is not understood. Furthermore, it is not clear whether the humidity cell results of 4 lithologies is representative of “other lithologies” or the mine rock in general.</p> <p>Additionally, the method of “assigning the median loading rate of all lithologies, excluding higher arsenic diorite” to form the loading rates for the other lithologies category is unknown.</p> <p>Page 13 of Appendix J explains that “to formulate more reasonable humidity cell loading rate inputs, the cumulative percent frequency plot of arsenic concentrations (see AMEC 2013e) that were measured in the overall geochemistry dataset was analyzed versus the concentrations measured in the humidity cell samples. Using the corresponding arsenic concentrations measured in the humidity cells, it was assumed that 95% of waste rock samples will have an arsenic concentration less than 5.8 µg/g. As such, the diorite samples were split into two lithologies: “higher arsenic” diorite (comprising 5% of the diorite tonnage) and “lower arsenic” diorite (comprising 95% of the diorite tonnage). This type of comparison is done for several parameters for waste rock as a whole in Figures 7-20 to 7-28”.</p> <p>Finally, it is unclear what evidence was used in supporting the conclusion that “higher arsenic” diorite comprises 5% of the diorite tonnage.</p> <p>The response to this information request will assist the Agency to determine effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide examples of literature used to develop the method of determining the loading rates of the “other lithologies” presented in the water quality model.</p> <p>b) Provide evidence to support the assumption that the humidity cell results for the 14 lithologies represent the range of geochemical conditions of the “Other Lithologies”, using ABA, especially sulphide, elemental and XRD data for humidity cells.</p> <p>c) Provide similar plots for each major lithology (e.g., tonalite, diorite, and diorite breccia) and include AP, MPA, Mod-NP, CO3-NP and copper.</p> <p>d) Provide evidence to support the conclusion that “higher arsenic” diorite comprises 5% of the diorite tonnage.</p>	<p>a) Development of loading rates from humidity cells was completed in accordance with accepted practice and guidance provided in MEND Report 1.20.1 (2009).</p> <p>b) Statistical ranges of acid base accounting characteristics of each rock type are provided in Appendix E (Geochemical Characterization Report) Tables 7-5 through 7-8 (acid base accounting) and 7-9 and 7-10 (metals). The range represented by humidity cell characteristics for key parameters are provided on cumulative frequency plots of the entire data set in Figures 7-20 through 7-28. In particular IAMGOLD also note that three humidity cells include elevated sulphide content for this site in the range of 0.1 to 0.7% sulphide.</p> <p>Please also refer to Comment #470.</p> <p>c and d) Average humidity cell loading rates were provided for the following lithologies: tonalite, magma mixing breccia, diorite and diorite breccia. These loading rates are based on the 14 humidity cell tests. The vast majority of the rock is as follows: tonalite (64%), diorite (20%), and diorite breccia (7.9%). Magma mixing breccia (1.1%) is a minor rock type but a humidity cell was completed on this lithology. The remaining 7% of the mine rock distribution is comprised of the following “other” lithologies: diorite mega breccia (1.5%), mafic dykes (1.5%), quartz diorite (1.4%), diabase (0.7 %), intrusive feldspar porphyry (0.5%), intrusive mafic lamprophyre (0.3%), fault (0.2%), intermediate and felsic dykes (0.2%), fault breccia (0.1%), quartz carbonate heterolithic breccia (0.1%), quartz sericite schist (0.04%), mafic breccia (0.03%) and hydrothermal breccia (0.01%). The four rock types tested (Tonalite, Magma Mixing Breccia, Diorite and Diorite Breccia) represent approximately 93% of the mine rock volume. The quartz diorite and mafic dyke units represent approximately 1.4% and 1.5% of the rock volume, respectively. Geochemical plots, including percent cumulative plots of NPR, Carbonate NPR, and various elements, can be found in Appendix E (Geochemical Characterization Report) for all lithologies.</p> <p>The “other” rock types, including quartz diorite and mafic dyke units, are characterized by low sulphide and high neutralization potential values with only one sample of mafic dyke reporting an NPR <2 (Appendix E, Tables 7-5 and 7-6, Graphics 7-8 and 7-9). The elemental and short-term leachate concentrations of the “other” rock types also fall within the general range of geochemical characteristics exhibited by the major rock types (Appendix E, Tables 7-9 through 7-12). Because the geochemistry of the “other” lithologies is not notably different than that of all the major rock types, the data from all 14 humidity cells was used to calculate loading rates for the “other” rock types. As discussed above, this is a reasonable (conservative to at worst a realistic) assumption given that: i) the “other” rock types are a relatively small percentage of the overall mine rock, and ii) any geochemical differences between the “other” rock types and the major rock types is not significant. Therefore, the “other” rock types are predicted to contribute a small percentage of the overall mass load via drainage from the mine rock, and have limited to negligible influence on surface water quality.</p> <p>The water quality model was updated with the most recent humidity cell data and simulations were completed by equitably applying the diorite humidity cell loading rates to the total tonnage of diorite. As such, in the revised model, the “higher arsenic” and “lower arsenic” mine rock tonnage designations / weightings in the original model were removed to evaluate the potential differences in arsenic concentrations when deriving a mass loading rate from the total tonnage of diorite by equally weighting the updated loading rates from all the diorite humidity cells. The results of the simulation with the revised model inputs with respect to arsenic concentrations are presented in the Addendum to Appendix J (Water Quality TSD); the results are very similar because the most recent humidity cell results show a continuation of the decreasing arsenic loading rates over time. Based on these results, the conclusions of the effects predictions presented in Appendix J (Water Quality TSD) are unchanged.</p>	<p>Provided discussion and results of revised model results that equitably apply the diorite humidity cell loading rates to the total tonnage of diorite in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>

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453	CEA Agency	<p>SW1-8 Water Quality TSD, Attachment II Water Quality Modelling Report, EIS page 10-14 of Chapter 10 Summary of Mitigation</p> <p>The Water Quality TSD states: "During the post-closure phase, approximately 25% of the MRA will be covered; as such, it is assumed that 25% of the runoff from the MRA will have a non-contact (i.e., natural runoff) water quality and the remaining 75% will have a contact (i.e., interaction with mine rock) water quality."</p> <p>Water coming into contact with covered portions of the MRA may temporarily possess similar attributes to natural runoff but when that water flows to areas that are not covered it soon takes on the contact water quality. The approach of assuming 25% of the surface drainage (runoff) to have non-contact water quality is not appropriate and results should be provided for post-closure phase water quality modeling that does not utilize this approach.</p> <p>It is stated in Chapter 10 of the EIS that mine contacted water will be collected and managed, and mitigation measures will be provided for all project phases. However, management of collected water is only provided for the operations phase. Furthermore, The MRA is surrounded by natural water bodies with very little space for collection and diversion.</p> <p>The response to this information request will assist the Agency to determine effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide a rationale for why assuming 25% of runoff from the MRA not having contact water characteristics is valid.</p> <p>b) Provide a discussion of how the effects predictions to water quality in closure and post closure would change if the assumption is not appropriate.</p> <p>c) Provide a description of mitigation measures for mine contact water for the closure and post closure phases of the project.</p> <p>d) Provide a discussion of the feasibility and efficacy of these proposed mitigation measures.</p>	<p>The assumption that 25% of the MRA will be revegetated was based on the Conceptual Closure and Reclamation Plan developed by IAMGOLD and as described in Section 5.16. According to the Conceptual Closure and Reclamation Plan, approximately 25% of the total MRA surface area (i.e., the flat surfaces on the benches) will be covered with a layer of overburden and vegetated during the closure phase. Areas outside of the targeted areas for vegetation will also become naturally vegetated over the course of several decades post-closure as a result of spreading of some rogue species.</p> <p>During stage I of the post-closure phase it is assumed that 100% of the water that lands on the surface of the MRA becomes contact water. As vegetation becomes established over the course of decades during the post-closure phase, precipitation that lands on the vegetated surface of the MRA will be subject to increased evapotranspiration with the remaining surplus assumed to infiltrate into the MRA subsurface. The mine rock source term in the water quality model for stage II of the post-closure phase (>50 to 80 years after closure) assumes that about 25% of the precipitation will be lost back to the atmosphere through evapotranspiration on an average annual basis. It is assumed that the remaining 75% of the water that lands on the MRA becomes contact water, either through runoff or subsurface flow, on an average annual basis. Assuming that about 25% of the precipitation is effectively non-contact water (>50 to 80 years after closure) is reasonable because up to 70% of water can be lost via evapotranspiration from lands bearing vegetation (MOE, 2003; Ayres et al., 2012). The text of the water quality modelling report has been revised to clarify this assumption and its use.</p> <p>Mitigation measures for the closure and post-closure phases can be found in Table 10-1 in Chapter 10 of the Amended EIS / Final EA Report. During post-closure, the establishment of vegetation will be monitored and its effects on the water balance will be assessed. The water from the MRA will report to the open pit for the first 50 to 80 years during post-closure (stage I), and the monitoring during this time will assist with modifications to the adaptive management and closure plan on an as needed basis.</p>	<p>Provided additional clarification on assumption that 25% of the precipitation that lands on the surface will be lost back to the atmosphere through evapotranspiration.</p>	<p>Appendix J, Attachment II, Section 2.5.3.1</p>

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454	CEA Agency	<p>SW1-9 Appendix J, Attachment 2 - Water Quality Modelling Report January 31, 2014</p> <p>On page 15 of the Water Quality Modelling Report it states, "On an average annual basis, the proportion of the surface that is flushed is 77%, assuming that some oxidation products are attenuated and release is delayed."</p> <p>Furthermore, because the particle size distribution of materials used in the kinetic test work are finer grained than typically observed in a mine rock pile, the scaled-up loading rates for mine rock were adjusted using a factor of 0.1.</p> <p>There appears to be some errors in Table 7 of the Water quality modelling report with respect to the fact that the some of the total adjustment factor were not derived using the described methodology.</p> <p>The response to this information request will assist the Agency to determine effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide an explanation of how the loading calculation handles the accumulation of oxidation products that are not flushed and that the continual accumulation of oxidation products that are not flushed increases future loading.</p> <p>b) Revise Table 7 to reflect correct total adjustment factors. NRCan requests that the proponent explain whether any of the lithologies (e.g. breccias, which are more likely to produce fines) require lower correction factors.</p>	<p>The total adjustment factors presented in Appendix J (Water Quality TSD), Attachment II, Table 7 were derived from summing the water-rock interaction adjustments for the non-dry season months and the distribution of cold-season loads and multiplying by the grain size adjustment. The significant figures presented in entries for March make it appear that the total adjustment factor is not correct (i.e., 0.04 plus 0.02 multiplied by 0.1 does not equal 0.005). For the purposes of data presentation, the non-dry season month value of 0.0393 was rounded to 0.04, the distribution of cold season loads value of 0.0156 was rounded to 0.02, and the calculated total adjustment factor of 0.00549 was rounded to 0.005. Revisions have been made to Section 2.5.3.1 in Appendix J, Attachment II to make the adjustment factor calculations more clear. Further explanation is provided below.</p> <p>Water flow through waste rock piles will follow preferential flow pathways, particularly under higher surface infiltration rates that occur during the spring freshet or storm rainfall events (Neuner et al., 2012). The higher surface infiltration rates therefore result in water that is transported through hydrogeologically isolated areas where water-rock interaction times are limited and water interacts with larger, less-reactive particles. Under dry conditions, water flow through the waste rock piles can become dominated by flow through the finer grained matrix materials where water-rock interaction times are greater. As a result, the water quality of drainage that exits the mine rock pile strongly reflects the various climate conditions that the mine rock pile is subjected to over the longer term, and is effected by a combination of preferential flow through coarse materials and flow through finer matrix materials.</p> <p>Given that humidity cell tests are completed on relatively homogenous materials, the purpose of the water-rock interaction adjustments are to account for the effect to mass loading rates due to water flowing through preferential flow pathways in the mine rock pile. In addition to differences in flow pathways, key variables that are different between laboratory-scale and full field-scale leaching rates include: temperature, reactive surface area, particle size, gas transport, and other site-specific important characteristics.</p> <p>Rather than applying a single water-rock interaction adjustment factor, an adjustment factor was applied for each month of the year to account for seasonal differences. The adjustment factors for each month are weighted based on the differences in the monthly average surplus calculated for the MRA. It is assumed that a maximum of 19% of the total oxidation products in the mine rock pile (14% non-dry season months + 5% distribution of cold season loads) are available to be flushed due to water-rock interactions during any single month, which is assumed to occur in April. For the months thereafter, the percentage of total oxidation products available for release is assumed to be proportional to the average monthly rainfall for each month relative to April. The cold-season load, or the mass load available for release during the winter months, is not released during the winter months, but is rather held as stored oxidation products and then added to the spring freshet mass load by distributing the cold-season loads over March, April, and May.</p> <p>The approach of using a water-rock interaction adjustment factor assumes that the oxidation products are only in part available to be released, and that the humidity cell tests provide a reasonable analogue of the reaction rates in the field; the rate at which the oxidation products are being generated is also assumed to be constant over time. In reality, the rate at which the oxidation products will be generated will be strongly influenced by the climatic conditions, and therefore not be similar to humidity cell loading rates, and will decrease over time as oxygen transport pathways become longer due to advancements of the oxidation front and the formation of secondary mineral coatings on the surfaces of the reactive minerals. The extent of the decrease in the reaction rates is not fully captured in the relatively short time frame of the humidity cell tests. Because the amount of mass released from the mine rock over the longer term is assumed to be constant, the model effectively assumes that any stored oxidation products will be released over time at a rate that is inversely proportional with the decrease in the rate in which new oxidation products are generated. This assumption in itself may not be perfect, but it provides a means of accounting for the differences between the mass release rates in field versus those that are observed from the laboratory-based humidity cell tests due to differences related to water-rock interaction and climate conditions.</p> <p>Response continues on next page.</p>	<p>Provided additional clarification on adjustment factor calculations.</p>	<p>Appendix J, Attachment II, Section 2.5.3.1</p>

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454 cont	See previous page.	See previous page.	<p>Although some rock types, such as breccias, may warrant a higher adjustment factor due to the potential for a greater proportion of fines being generated during blasting and rock dumping, it is equally likely that the adjustment factors for other rock types that are harder in nature are overly conservative. Therefore, an adjustment factor of 0.1 was applied for all rock types to provide a consistent approach for up-scaling the humidity cell loading rates based on grain size differences.</p> <p>Overall, the total adjustment factors to upscale the humidity cell loading rates to the full-scale mine rock pile range from 0.005 to 0.019. These are considered to be reasonable given that differences between laboratory-scale loading rates and full-scale field loading rates can differ by two to three orders of magnitude (Bailey, 2013; Kennedy et al., 2012; Bertrand et al., 2006; Malmström et al., 2000). Furthermore, when comparing the predicted water quality of the drainage from the MRA, low-grade ore stockpile, and open pit to the discussions and data presented in Appendix E (Geochemical Characterization Report), the simulated water qualities of the contact water from the various mine site components aligns well with the general geochemical characteristics of the mine rock. Lastly, given that all model predictions carry some uncertainty, IAMGOLD is committing to conduct water quality monitoring of mine site components and receiving groundwater / surface water environments during all Project phases. Information attained through monitoring will be used to adjust the adaptive management plan for the Project, on an as needed basis.</p>	See previous page.	See previous page.

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455	CEA Agency	<p>SW1-10 Attachment 2 - Water Quality Modelling Report January 31, 2014</p> <p>Tailings exposed in the reactive zone (i.e., the exposed beach area) of the TMF are subject to physical and chemical weathering over time. For the purposes of modelling, it is conservatively assumed that the thickness of the reactive zone of the beach tailings is 1 m.</p> <p>Based on federal reviewer's experience, the depth of weathering increases over time and will vary depending on the composition of the tailings. One important distinction is between tailings sand on the beach near the spigot point where the depth of weathering will eventually be much deeper and the finer tailings slimes where weathering may be relatively shallow.</p> <p><u>Lithology of the Tailings:</u> Currently, there are no data on the geochemistry of the tailings. For the purposes of the water quality modelling, the tailings geochemistry, including metal leaching characteristics, is assumed to be similar to the mine rock. As such, the input chemistry of the tailings runoff and seepage is assigned based on the lithology-specific loading rates, weighted by tonnage (as described in Section 2.5.3.1).</p> <p><u>Reactive Surface Area of the Tailings:</u> The reactive surface area of pulverized materials used in the bench-scale kinetic test work (humidity cells) is expected to be different than the reactive surface area of the tailings. As such, the kinetic test work loading rates were up-scaled to account for the difference in the reactive surface area by using an adjustment factor of 0.1. Tailings have a finer particle size than the material in humidity cells so an adjustment factor of 0.1 is inappropriate.</p> <p><u>Metal Concentrations (Copper):</u> It is assumed that the mass of copper in the seepage from the TMF will be reduced through the process of adsorption onto solids in the subsurface, as the seepage flows from the TMF to the seepage collection system. It is reasonable and conservative to assume that 25% of the mass of copper is adsorbed in the subsurface. Lund et al. (2008) carried out surface complexation modelling of copper (II) adsorption over a range of hydrous ferric oxide (HFO) and kaolinite mixture proportions, pH, ionic strength and sorbate/sorbent ratios. At neutral pH, the adsorption of copper on HFO and kaolinite was determined to be nearly 100%. This assumption is reasonable given that the model does not account for precipitation and co-precipitation mechanisms within, and down gradient of, the tailings. BP – Kinetic test work that includes the precipitation of secondary minerals can be used to address the process of adsorption onto solids in the subsurface. This could be equally valid for other elements (e.g. arsenic) and mine components (e.g. mine rock).</p> <p>The response to this information request will assist the Agency to determine effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) It is the view of federal reviewers that the lithology and geochemistry of the tailings should be different than the waste rock. Describe the tailings and explain why the loading rates should be kept the same or adjusted.</p> <p>b) Tailings have a finer particle size than the material in humidity cells so an adjustment factor of 0.1 is inappropriate. Remove the adjustment factor of 0.1 and provide updated loading rates for the tailings.</p> <p>c) Kinetic test work, like field cells and trickle leach columns, that includes the precipitation of secondary minerals can be used to address the process of adsorption onto solids in the subsurface. Provide an explanation as to why the TMF and copper were singled out for consideration of adsorption onto solids in the subsurface.</p>	<p>At the time of the effects prediction stage of the EA, and prior to EIS / Draft EA Report submission, no site-specific data was available for either the geochemistry of the tailings nor the process water quality produced by the processing plant. For the purposes of the water quality modeling, the tailings geochemistry, including metal leaching characteristics, were assumed to be similar to the mine rock; as such, the model input for the tailings geochemistry was assigned based on MRA loading rates. Process water quality was derived using knowledge of analogue gold mining project sites and professional judgement; the exception was cyanide concentrations in the process water that were assumed based on the concept-level cyanide destruction treatment specifications.</p> <p>Subsequent to the EIS / Draft EA Report submission, humidity cell testing was performed on three tailings samples produced for the Project. The samples were composites of various tailings prepared as part of IAMGOLD's bench-scale metallurgical cyanide destruction testing program. The humidity cells were initiated in March of 2014. Preliminary geochemical source terms were based on the average loading rates obtained over 18 weeks of testing of the three tailings humidity cells. Furthermore, laboratory analysis was performed on the process water quality through an ageing test procedure on Day 0, Day 7, Day 29 and Day 60. The Addendum to Appendix J (Water Quality TSD) provides a tabular comparison of the:</p> <p>i) original versus new average tailings humidity cell loading rate input data, and ii) original versus new process water quality input data.</p> <p>The new tailings humidity cell loading rates and process water quality data were input into the water quality model and predictions were re-simulated. The TMF reclaim pond has been designed to not discharge water to neither the mine water pond nor the polishing pond. The only expected discharge from the TMF to the receiving surface water environment is via seepage to Bagsverd Lake, Unnamed Lake and Bagsverd Creek, all located within the Mesomikenda Lake Watershed. It is important to note that seepage was incorporated into the simulations of both the original (i.e., as presented in the EIS / Draft EA Report) and revised versions of the water quality model. The Mollie River watershed does not receive seepage from the TMF, and the predicted water qualities for receivers in the Mollie River Watershed are therefore unchanged from those presented in the EIS / Draft EA Report.</p> <p>To assess the effect that applying the new tailings humidity cell loading rates and process water quality inputs have on the surface water receiving environment, the original predicted water qualities of key surface water features in the Mesomikenda Lake Watershed were compared to the revised predictions. These comparisons are presented in tables that can be found in the Addendum to Appendix J. For the average, dry and wet year conditions, the following parameters show a marginal increase in concentrations due to the revised tailings humidity cell loading rates and process water quality data: aluminum, calcium, cobalt, copper, iron, molybdenum, nitrate, potassium, sodium, strontium and sulphate. For the average, dry and wet year conditions, the following parameter concentrations were unchanged due to the revised tailings humidity cell loading rates and process water quality data: total ammonia, un-ionized ammonia, antimony, arsenic, boron, cadmium, chloride, lead, manganese, nickel, total phosphorus, uranium, vanadium and zinc. For the average, dry and wet year conditions, the following parameters show a decrease in concentrations due to the revised tailings humidity cell loading rates and process water quality data: barium, cyanide (total), cyanide (free) and magnesium.</p> <p>The limited change to the water quality predictions is related to the transport pathway between the TMF and the surface water receiver, which is through seepage only. Because the seepage rates that bypass the seepage collection system are low relative to the flow in the surface water receivers (e.g., Bagsverd Creek), changes to the seepage water concentrations have limited effect on the overall mass load within the surface water environment. As such, the revised tailings humidity cell loading rates and process water quality inputs did not result in material changes to the effects predictions or conclusions of the effects predictions. The original model assumptions for tailings geochemistry and process water quality were therefore reasonable and the revised model results do not change the outcome of the impact assessment.</p> <p>Response continues on next page.</p>	<p>Provided revised model results that include the site specific tailings humidity cell data and process water quality in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>

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455 cont	See previous page.	See previous page.	<p>The rationale for the tailings humidity cell adjustment factor is to assist with the upscaling of the loading rates from the laboratory-scale humidity cells to the full-scale TMF. The adjustment factor of 0.1 was applied to the tailings humidity cell loading rates to account for differences in rates of reactions that are exhibited due to the different conditions that a humidity cell test charge is subjected versus the on-site ambient conditions in the field. Given that the conditions that the tailings are subjected to as part of humidity cell testing are created to facilitate the advancement of the weathering reactions, the difference between the laboratory conditions and climatic conditions needs to be accounted for in the water quality model. Therefore, the use of the adjustment factor is valid, and the text in Appendix J, Attachment II has been revised to reflect the above discussed rationale and remove reference to differences in grain size.</p> <p>Copper will occur at elevated concentrations in the process water because copper sulphate will be added to the cyanide destruction circuit to assist with catalyzing the cyanide destruction reactions. Since process water will in part influence the pore water quality in the TMF, copper will be present in the groundwater that is transported outside of the TMF, including the groundwater that bypasses the seepage collection systems. To not overestimate the copper loadings into the receiving surface water environment, a conservative attenuation factor has been applied to the groundwater exiting the TMF to account for the limited mobility that is characteristic of copper in groundwater environments. In addition to the strong adsorption properties of copper (Lund et al., 2008; Dzombak and Morel, 1990), the mobility of copper in the subsurface, including within tailings impoundments, is limited by precipitation of discrete phases and co-precipitation with other secondary minerals, such as ferric oxyhydroxides and hydroxysulphates (Gunsinger et al., 2006; Galan et al., 2003; Webster et al., 1998). Humidity cell tests are not designed to model the mobility constraints that would be evident under actual field conditions, where the flow pathways are tens to hundreds of metres in length and the kinetic limitations of secondary mineral formation and complexation reactions would be less of a factor under field conditions where residence time in the subsurface is considerably longer.</p>	See previous page.	See previous page.
456	CEA Agency	<p>SW1-11 Appendix J, Attachment 2 - Water Quality Modelling Report January 31, 2014</p> <p>The EIS States that "The concentration of aluminum is assumed to be controlled by the low solubility of aluminum hydroxides under near-neutral pH conditions. Solubility modelling was conducted using the geochemical speciation model PHREEQC (Parkhurst and Appelo 1999) to simulate the removal of a portion of mass of aluminum from solution due to solubility controls. A correction factor of 5% was applied to the aluminum concentration predicted for the contact water (i.e., it is assumed that only 5% of the aluminum remains dissolved and the remaining mass precipitates from solution)."</p> <p>It is unclear why a correction factor was applied instead of using the number obtained from solubility modelling.</p> <p>The response to this information request will assist the Agency to determine effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide a rationale for why a correction factor was applied instead of using the number obtained from solubility modelling for predicting the concentration of aluminum.</p>	<p>GoldSim was used for the water quality modelling, which is not capable of accounting for solubility controls in the way an equilibrium geochemical speciation / mass transfer model like PHREEQC accounts for these controls. Therefore, in order to partly account for the attenuation of aluminum through solubility controls at circum-neutral pH, a correction factor was applied to remove mass within the GoldSim model. This correction factor was conservatively based on PHREEQC solubility modeling, where predicted concentrations incorporating solubility controls were compared to original concentrations to determine the percentage of aluminum removed through solubility controls. The 5% correction factor was then applied as a data element in GoldSim and multiplied by the predicted concentrations of the MRA contact water, the open pit sump water and the low-grade stockpile contact water. The 5% correction factor is conservative because PHREEQC modelling suggests that the concentrations predicted in the contact water from the MRA, low-grade ore stockpile and open pit without solubility controls, which range from 1 to 34 mg/L, will decrease by more than 95% under circum-neutral pH conditions.</p>	None.	n/a

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457	CEA Agency	<p>SW1-12 Appendix J – Water Quality Baseline - Pg. 15</p> <p>The proponent states, “For parameters where the criteria was dependent on one or more of pH, temperature, and hardness, an assumed pH of 7, temperature of 15°C, and hardness of 30 mg/L as CaCO₃ was applied”.</p> <p>It is unclear why these assumptions are necessary. It is assumed that the pH, temperature, hardness are known for the sampled sites given that they are reported in Appendix A of the Water Quality Baseline TSD.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide a discussion as to why comparing a concentration of a contaminant to criteria derived from fixed values is valid, given the pH, temperature and hardness of the samples is known.</p> <p>b) Provide a summary of Baseline Water Quality Results using the criteria derived from data in Appendix A .</p> <p>c) Provide a discussion of how the description of the baseline water quality is affected by comparing to the criteria specific to samples.</p>	<p>The average pH and hardness values were used to assign guideline values that depend on these parameters, which were evaluated versus the predicted water chemistries to confirm that the approach was scientifically sound. This approach is taken to develop a single set of benchmarks, which allows a transparent and consistent evaluation of the baseline water quality data and prediction of Project effects for all assessment locations. For parameters that have guidelines dependant on the value of other parameters, the predicted Project impacts need to be assessed by assigning water quality guidelines that reflect the predicted water chemistry of the surface water environment, not the water chemistry under existing conditions; this is particularly important for parameters that have guidelines that depend on variables such as hardness that will vary from existing conditions due to the predicted changes in water quality.</p> <p>The only parameter that has a water quality guideline that depends on temperature is dissolved oxygen, and dissolved oxygen is not expected to be decreased to below guideline values based on the predicted concentrations of nutrients in the receiving surface water environment. Un-ionized ammonia concentrations depend on temperature, but the PWQO and CWQG for un-ionized ammonia are fixed at 0.020 mg/L and 0.019 mg/L, respectively; noting that the water quality model calculated the un-ionized ammonia concentrations from the total ammonia concentrations for each time step using varying temperature data throughout the year.</p> <p>The only parameter that has a water quality guideline that depends on pH is aluminum. Based on the geochemistry of the mine rock and tailings (i.e., the non-acid generating nature of the mine rock and tailings), the surface water receiving environment is expected to have pH values that are circum-neutral. The use of the water quality guideline for aluminum based on circum-neutral pH is therefore valid.</p> <p>Predicted hardness concentrations for the assessment locations, which can be derived from the predicted calcium and magnesium concentrations, range from 23 to 70 mg/L as CaCO₃. Using a hardness of 30 mg/L as CaCO₃ to derive the water quality guidelines for purposes of comparison to predicted concentration is a scientifically sound approach given that 30 mg/L as CaCO₃ is at the low end of the predicted hardness concentration range.</p>	None.	n/a
458	CEA Agency	<p>SW1-13 Appendix J – Water Quality Baseline – Appendix D Pg.1-6</p> <p>The EIS indicates that there were 4 Quality Assurance and Quality Control (QA/QC) blanks with detectable parameters and/or values that were not within acceptable CWQG and PWQO ranges.</p> <p>Furthermore, the EIS indicates that there are 46 non-acceptable QA/QC blanks with greater than 30% relative difference between the testing results and the control.</p> <p>It is unclear if these discrepancies are indicative of methodology or testing errors without knowing the number of QA/QC blanks taken for QA/QC purposes.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide the total number of QA/QC blanks taken.</p> <p>b) Provide a discussion of the implications of the reported non-acceptable QA/QC blanks on the data and subsequent conclusions.</p>	<p>As presented in Appendix J, Attachment I, Appendix D, the total number of duplicate samples evaluated for relative percent differences is 23. As presented in Appendix J, Attachment I, Appendix D, Table 1, there were 16 samples in which the sample concentration and duplicate concentration had greater than a 30% relative percent difference (when broken down by parameter there were 46 instances of relative percent differences greater than 30%). In 5 of the samples, the only parameter with a relative percent difference greater than 30% was zinc and the results are suspected to be related to a laboratory source of zinc which has since been investigated and resolved.</p> <p>IAMGOLD is collecting duplicate samples during each water quality monitoring round according to industry-standard protocols. In the analysis of the baseline dataset and the calculation of the average baseline water quality for model input, suspect laboratory results were flagged, identified to the analytical laboratory and not included in the calculations to derive inputs for the water quality model. Therefore, any data suspected to be anomalous were not included as part of the effects predictions.</p>	None.	n/a

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459	CEA Agency	<p>SW1-14</p> <p>Appendix J – Water Quality Baseline</p> <p>In the Water Quality TSD, Tables 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7 and 4-8 only include minimum and maximum values despite the titles of these tables implying that average values are presented.</p> <p>The range of values is of little significance without the mean and the median to provide an indication of the type of spread found in the summarized data.</p> <p>Furthermore, Table 4-2 provides a prediction of water quality conditions at 2 separate receivers options, however the concentrations of cyanide at these locations is not predicted. Given the nature of the selected gold recovery process, it would be prudent to predict the concentrations of cyanide at these two receivers also.</p> <p>Finally, while total phosphorus is not itself toxic to aquatic organisms, excess phosphorus can create the conditions necessary for eutrophication which can be very damaging to aquatic ecosystems. Effects of eutrophication due to excess phosphorus found in the effluent, as predicted in the EIS, are lacking.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide, where possible, the median and mean values for parameters in Tables 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7 and 4-8.</p> <p>b) Include the concentration of cyanide as a predicted parameter in Table 4-2.</p> <p>c) Provide a discussion regarding potential effects to water quality, fish and fish habitat as a result of increased eutrophication due to release of effluent with phosphorus in concentrations above indicated parameters.</p>	<p>For average year conditions, wet year conditions and dry year conditions, the average predicted concentration in a given month was calculated for each parameter. The values presented in Appendix J (Water Quality TSD), Tables 4-1 through 4-8 are minimum and maximum monthly averages and encompass the range of predicted monthly average concentrations during the climatic conditions evaluated; these are suitable for comparison to water quality benchmarks for the purposes of the water quality effects assessment, as the maximum concentrations determine the magnitude level, not the average or the median.</p> <p>As described in Appendix J, Section 1.1.4, drainage from the tailings, including the process water containing cyanide, will be directed toward a central reclaim pond within the TMF. The water management strategy is designed to recycle water from the reclaim pond for use at the processing plant. Figure 3 of Appendix J, Attachment II has been corrected to remove an erroneous arrow denoting flow from the processing plant to the mine water pond. Water that reports to the mine water pond, which is then pumped to the polishing pond, consists largely of runoff and seepage from the open pit, MRA, and low-grade ore stockpile. The water that reports to the mine water pond and polishing pond does not include an input from the TMF reclaim pond (i.e., the TMF reclaim pond has been designed to not discharge water to the mine water pond nor the polishing pond). Therefore, the water management has been designed such that the effluent discharge to the environment from the polishing pond does not contain cyanide. Accordingly, because Table 4-2 compares the receiving environment water quality for effluent discharge options and the effluent from the polishing pond does not contain cyanide, Table 4-2 does not present cyanide concentrations and there is no value in providing predicted cyanide concentrations for this purpose.</p> <p>In response to comments regarding total phosphorous concentrations in the receiving surface water environment, further modelling and analysis was completed and included in the Addendum to Appendix J (Water Quality TSD). A description of the methodology and assumptions are also provided in the Addendum. The predicted annual average total phosphorus concentrations for Neville Lake and Mesomikenda Lake were calculated using the Lakeshore Capacity Model, which has been designed for Precambrian lakes in Ontario and has been recommended by the MOECC (MOE et al., 2010). The approach of using the Lakeshore Capacity Model to evaluate phosphorous loads includes derivation of a revised PWQO for each lake (i.e., background + 50%). The results of the Lakeshore Capacity Model analysis were compared to the revised PWQOs.</p> <p>The predicted annual average total phosphorus concentration in Neville Lake and Mesomikenda Lake are presented in table format in the Addendum to Appendix J. The predicted annual average concentrations were determined to be less than the revised, lake-specific PWQOs. Therefore, any changes in phosphorus concentrations are not expected to result in meaningful changes in dissolved oxygen concentrations nor cause a shift in the productivity of the lakes.</p>	<p>Provided revised model results for phosphorous in the Addendum to Appendix J (Water Quality TSD).</p> <p>Figure 3 has been corrected and an erroneous arrow denoting flow from process plant to the mine water pond has been removed.</p>	<p>Addendum to Appendix J; Appendix J, Attachment II, Figure 3</p>

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460	CEA Agency	<p>SW1-15</p> <p>Appendix N - Aquatic Biology Technical Support Document – Pg.6</p> <p>It is stated in Appendix N: “Predictions of potential effects on sediment quality, due to the Project, have not been completed...”</p> <p>On page 22 of the EIS Guidelines it reads: “the EIS will describe surface water quality, hydrology and sediment quality within the area of influence of the project. The baseline will provide the basis for the assessment of potential effects to surface water, presenting the range of water and sediment quality and surface water hydrology.”</p> <p>This gap in the assessment needs to be completed, as sediment quality may adversely affect aquatic biota.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide a completed prediction of effects due to changes to sediment quality caused by project activities.</p> <p>b) Provide, if necessary, appropriate mitigation measures to mitigate predicted effects of changes to sediment quality.</p> <p>c) Summarize any residual effects that may remain after mitigation due to changes to sediment quality.</p> <p>d) Provide a discussion of predicted effects to fish and fish habitat as a result of predicted changes to sediment quality.</p>	<p>Predictions of potential effects on sediment quality, due to the Project, have not been completed, but are implicitly considered through the water quality effects assessment and mitigation planning. Changes to sediment quality will be the result of: 1) geochemical processes that form precipitates directly on the sediments or colloids in the water column that become part of the sediments through sedimentation and settling processes, and 2) discharge of a suspended solid load that results in the accumulation of mineralic grains over the existing sediments. However, it is expected that changes to sediment quality associated with total suspended solids (TSS) loads will be limited based on Federal and Provincial metal mining sector effluent discharge requirements (e.g., MMER).</p> <p>Effects to sediment quality that are caused by geochemical processes will depend on changes to the water quality, and only substantial changes to water quality will result in meaningful change to sediment quality. Effects to biota are addressed through the assessment of predicted water quality, which should also address any potential changes to sediment quality.</p>	None.	n/a
461	CEA Agency	<p>SW1-16</p> <p>Chapter 5, 5.16.3; Appendix J, Attachment II, Water Quality Modelling Report</p> <p>Section 5 of the EIS states that, “Following the removal of infrastructure and waste, as well as the revegetation of disturbed areas, the open pit will continue to flood. It is anticipated that this stage could last approximately 50 to 80 years” (Post Closure Stage I).</p> <p>The pit walls may contain rock material with acid generating or metal leaching potential, which if left exposed for extended periods of time may affect water quality.</p> <p>Appendix E, Figure 6 suggests that mine lacks samples from around the upper edge of the pit, which may remain exposed post closure.</p> <p>Finally, the surface water quality modelling of the contact water in the open pit during closure assumes that there is a constant 1,924,856 m² exposed to the elements. Historically, rock collapse and raveling over the course of the closure phase will lead to a surface area greater than that of just the mine walls.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide information about characteristics of mine walls and talus as well as the lithology and geochemical characteristics of that material.</p> <p>b) Provide information about how much bedrock will remain exposed after flooding and the lithology and geochemical characteristics of that material.</p> <p>c) Provide a discussion of how the increased surface area from talus would impact predictions in the water quality model during closure and post closure</p> <p>d) Provide a discussion as to which wall lithologies are more likely to collapse.</p>	<p>The open pit mine walls consist of the following: tonalite, magma mixing breccia, diorite, diorite breccia, diorite mega breccia, mafic dykes, quartz diorite, diabase, intrusive feldspar porphyry, intrusive mafic lamprophyre, fault, intermediate and felsic dykes, fault breccia, quartz carbonate heterolithic breccia, quartz sericite schist, mafic breccia and hydrothermal breccia. For a discussion on the geochemistry of the rock in the open pit, see Appendix E (Geochemical Characterization Report), Section 7.0.</p> <p>The water quality model assumes a reactive thickness of 1 m across the exposed open pit area of 1,924,856 m² (ultimate extent area) for the water quality predictions. This is a conservative assumption and takes into consideration any surface area effects that rock collapse and the formation of talus’ on pit benches may have on the mass loading within the open pit.</p> <p>As described in Appendix I (Hydrology TSD), the water level in the open pit lake during post-closure (stage II) will have recovered to an elevation sufficient to cause overflow (and reconnection) of the pit lake to the upper basin of Three Duck Lakes. As shown in Appendix I, Attachment II, Appendix C, Table C-2, the average annual water level of water the open pit lake under average conditions during post-closure (stage II) is predicted to be 380.2 meters above sea level. A figure has been provided in the Addendum to Appendix J (Water Quality TSD) that shows the limited exposed rock during post-closure phase stage II (i.e., once the water level reaches static elevation).</p> <p>Knight Piesold conducted a pre-feasibility slope design study for the proposed open pit (Knight Piesold, 2013). Acknowledging that open pit design is ongoing, the proposed pit outline indicates that very little bedrock will remain after flooding, and will be limited to localized topographical highs (see figure in Addendum to Appendix J). The exposed bedrock (almost entirely tonalite) is predicted to be non-acid generating (Appendix E). The predominant lithology exposed at the pit edge (tonalite) was classified based on laboratory strength testing as good quality rock. Pit slope angles will be designed such that pit walls will be physically stable over the longer term under flooded conditions.</p> <p>During post-closure phase (stage I), runoff and seepage collected from the MRA will be pumped to the open pit and there will be no discharge from the open pit. During post-closure phase (stage II), runoff and seepage from the MRA will no longer be collected and pumped to the open pit, and will passively discharge in part to the open pit lake. The loadings associated with the small area of exposed rock once the open pit has flooded are expected to be negligible and similar to natural runoff over the longer term.</p>	A figure of the flooded open pit has been provided in the Addendum to Appendix J (Water Quality TSD).	Addendum to Appendix J

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462	CEA Agency	<p>SW1-17 Chapter 5</p> <p>Section 5 of the EIS states that "Considering the limited proportion of PAG samples identified, the overall low sulphide content of the rock, and the prevalence of non- acid generating rock to be produced as waste, the likelihood of net acid conditions occurring in the mine rock piles is considered to be very low. Therefore the inclusion of any PAG materials with the bulk of the waste will likely be an appropriate management method and segregation of any PAG materials does not appear to be necessary".</p> <p>Although only 5% of the waste rock has a neutralization potential ratio of less than 2 and is classified as PAG, 5% of 850 million tonnes is 43 Mt. This is a large amount of material, capable of producing deleterious drainage depending on the details of its composition and how it is mixed into the non-PAG waste rock.</p> <p>Without an understanding of the location of the PAG material is located, (e.g. a block model), it is unclear how the proponent proposes to adequately mix the PAG material with material that has a net neutralizing potential to minimize the potential that pockets of PAG materials will form and potentially lead to areas of the waste rock pile generating low pH run-off.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide additional details including:</p> <ul style="list-style-type: none"> i. Where PAG samples were located, ii. The timing of the PAG material extraction during operation, iii. A geological explanation for their occurrence, iv. A description of their physical properties compared to non-PAG, v. The predicted maximum discrete volumes of PAG within the waste rock and low-grade ore stockpiles, and vi. A description of the measures that will be employed to ensure mixing with the non-PAG waste rock and prevent large discrete masses of PAG waste rock. 	<p>Investigations carried out on the Project to date indicate that PAG rock is present as small isolated volumes that are distributed randomly through the significantly greater mass of the Non-PAG mine rock. These PAG materials likely represent occasional clusters of sulphides that occur within the mineralized area of the Côté gold deposit. Further the PAG rock tends to be composed of low sulphide (mean = 0.36% S) material with lower contents of minerals that provide acid neutralization capacity. The Non-PAG rock is also low sulphide but contains much higher concentrations of minerals that neutralize acidity. In fact the Non-PAG rock contains an excess of acid neutralization capacity. A mass-balance comparison of the net acid generation capacity of the PAG rock compared to the net acid neutralization capacity of the Non-PAG rock suggests that the overall acid neutralization capacity of the Côté mine rock is approximately 120 times greater than the acid generation capacity. Therefore the potential for net acidic conditions to occur in the Côté mine rock is considered to be extremely small.</p> <ul style="list-style-type: none"> i. Data suggests the PAG samples are randomly distributed. There was no observed spatial or geological control on the location of the PAG samples. Additional discussion regarding the distribution of PAG samples is provided in the Addendum to Appendix E (Geochemical Characterization Report). ii. As the PAG samples are randomly distributed through the deposit, it is anticipated that the proportions of PAG material extracted from the deposit will remain relatively constant throughout the mine operation. iii. The Côté Gold deposit is unusual for an Archean-age gold deposit and has been described as a porphyry gold deposit, characterized by gold mineralization that occurs in both a disseminated form and within occasional veins / veinlets through the deposit. Sulphides (e.g., pyrite) are associated with the occurrence of gold. However, the deposit is considered to be low sulphur with incomplete conversion of iron oxides into pyrite and considerable iron remaining in biotites and chlorites (RPA 2012). An important implication of this regarding ARD is that the concentration of pyrite in the deposit rocks is low, occurring either in a disseminated form or within occasional isolated veinlets at somewhat higher concentrations. Therefore, the low frequency of PAG samples can be attributed to the 'nugget effect' where samples with isolated grains of sulphide are occasionally sampled and analysed resulting in a higher than normal result. iv. No differences in the physical characteristics of the PAG and non-PAG materials were noted. v. Based on the random distribution of PAG samples in the deposit, adequate mixing of the PAG materials to prevent formation of discrete PAG masses can be achieved by the normal mining procedure of dumping mine rock within the waste rock piles. The mixing of the isolated PAG materials with the significantly greater (~20 times) volume of acid consuming non-PAG rock will result in mine rock with an overall acid consuming character. vi. Specific details regarding the management of the mine rock will be developed as the Project moves forward and detailed engineering studies are completed on the mine waste management plan. This would include a definition of 'discrete volume'. However based on the low proportion of PAG materials and the proposed method of mining and placement of waste rock, it is anticipated that the greatest discrete volume that would be encountered within the mine rock pile would be equivalent to a single dump truck load worth of material. 	<p>Additional discussion regarding the distribution of PAG samples in the ore body has been added in the Addendum to Appendix E (Geochemical Characterization Report).</p>	<p>Addendum to Appendix E</p>

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463	CEA Agency	<p>SW1-18 Chapter 5 5.16.2.3</p> <p>The EIS proposes for the project to process all stockpiled low-grade run of mine (ROM) ore during the operations phase. Thus, reclamation of these stockpiles is not expected. If necessary, any residual stockpiled ore will be stabilized in the same fashion as the MRA. It is unclear whether or not there is a contingency plan for managing low grade ore in the event that it is not processed.</p> <p>Additionally, the proponent has indicated that "results from ongoing exploration activities indicate that the ore may contain copper levels such that extraction of copper could be viable in the long term. It is therefore foreseen that, in the future, the ore processing plant may be expanded to include a copper recovery circuit. However this copper recovery circuit is not included in the scope of the current Project when predicting environmental effects.</p> <p>Finally, it is unclear how it was determined to be reasonable to assume that mineralization and therefore loadings in low grade ore are equivalent to waste rock given the large mass of material which is classified as low-grade ore.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide a contingency plan for managing low grade ore, in the event low-grade ore stock pile is not processed, including:</p> <ul style="list-style-type: none"> i. An assessment of geochemical characteristics of low grade ore stockpiles. ii. The maximum tonnage of the low-grade ore stockpile. iii. A description of potential environmental effects associated with the low-grade ore stockpile, mitigation measures that would be implemented to minimize impacts to the environment and residual effects. <p>b) Provide a rationale for assuming that the mineralization of the low grade ore is equivalent to waste rock.</p> <p>c) Provide a discussion of the implications of locating the low-grade ore stockpile partially in former lake bed created by retention dam for Upper Three Duck Lakes (e.g. what are the implications for seepage, how will the placement impact potential metal leaching rates).</p> <p>d) Provide a discussion regarding how the predictions from the water quality model would change and the project's potential environmental effects if copper recovery does occur.</p>	<p>IAMGOLD assumes that these comments are on Section 5.16.2.3. Section 5.5.15.2.3 does not exist.</p> <p>a) As part of the Project Description it is fully anticipated that the low-grade ore stockpile would be fully consumed by the end of the operations phase. As described in Section 5.16.2.3, if this were not the case the stockpile would be closed out in the same fashion as the MRA. In the very unlikely scenario that the low-grade ore stockpile, or portions thereof, were to remain at the commencement of closure, the Closure Plan would be revised accordingly.</p> <p>b) It is not assumed that the low-grade ore is similar to the mine rock. The low-grade ore is of the same mineralization as the ore and, therefore the tailings.</p> <p>c) As described in Section 9.6.2.2. water that has come into contact with mine rock, low-grade ore, the walls of open pit, or the tailings is predicted to have near-neutral pH, as the geochemistry study suggests that the mine rock and tailings are non-acid generating, and contain major ions and metals at concentrations lower than the Federal and Provincial effluent discharge limits. Contact water from the MRA, low-grade stockpile, and open pit is predicted to contain ammonia and nitrate from the dissolution of residual explosives. Contact water in the TMF will be influenced by process water that is discharged from the cyanide destruction circuit, which is expected to contain residual cyanide species, ammonia and metals (i.e., copper).</p> <p>The water collected from the MRA, low-grade stockpile, and open pit reports to the mine water pond, with the surplus pumped to the polishing pond (see proposed water management system in Figure 5-2). Seepage from the low-grade ore stockpile would report to the open pit.</p> <p>d) Copper recovery is not included in the Project described and assessed in this EA. If a copper circuit were to be included the requested additional information would be provided as part of the EA / approvals process.</p>	None.	n/a

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464	CEA Agency	<p>SW1-19 5.16.2.4</p> <p>The EIS states that “The closure concept for the TMF has been developed to promote long-term chemical and physical stability, minimize erosion, provide long-term environmental protection, and minimize long-term maintenance requirements. Initial assessment indicates that the tailings will be NAG. Additional geochemical test work is underway to confirm the geochemical characteristics of the tailings”.</p> <p>Based on the review of the EIS, the tailings results during test milling show the concentrations of total sulphur were generally low (<0.3%) ranged from 0.007% to 1.9%, with a median value of 0.07%, and predominantly occurring as sulphide. The maximum measured sulphide content was 1.9%. For the majority of samples (90 of 93 samples or 97%) the NPR was greater than two. Similarly 87 of 93 samples (94%) had a Carbonate NPR >2. Of the samples with NPR and Carbonate NPR <2, two and one samples respectively have NPR <1 (see Graphics 8-3 and 8-4). Furthermore, the EIS indicates that tailings test work is ongoing.</p> <p>The EIS has not provided information on the types of treatment that would be implemented, should it be required.</p> <p>It is understood that additional tailings test work is being conducted. The results of this test work will support future determinations of potential effects and conclusions.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide the results of humidity cell work on tailings samples from test milling to predict the rate of sulphide oxidation.</p> <p>b) Provide a description of the treatment options being considered (e.g., effluent treatment vs. tailings treatment) in the event that treatment should be required.</p> <p>c) Provide a description of how different methods of processing impacted the test mill results and will impact geochemical effects during operation.</p> <p>d) Provide a description of the additional tailings test work that will be undertaken, including when it will be undertaken.</p> <p>e) Provide an explanation for the samples with 1.9% Sulphide content and a NPR < 1.</p>	<p>a) Three tailings samples are undergoing humidity cell testing. Rates of sulphide oxidation and metal release are low, with sulphate release rates averaging approximately 10 mg/kg/week (5 week averages of 3, 6 and 25 mg/kg/week). Updated results from ongoing geochemical testing are provided in the Addendum to Appendix E (Geochemical Characterization Report).</p> <p>b) The Côte tailings have a very low risk of metal leaching / ARD. The tailings are net acid consuming and have low metals concentrations. Based on these observations no treatment options are considered necessary.</p> <p>c) Simulated tailings were generated in a process that is based on the processing method described in the EA including; crushing / grinding, gravity cyanide leaching, carbon-in-pulp gold recovery, followed by carbon stripping and electro-winning. Different processing methods such as heap leach are not proposed for the Project and tailings generated by other methods do not need to be assessed.</p> <p>d) Monitoring of tailings humidity cells is ongoing. No further testing of tailings is contemplated at this time.</p> <p>e) A single tailings sample reported a sulphide content of 1.9%. Median sulphide content of the tailings was 0.07%. This outlier value (1.9%) is consistent with the observation that the distribution of elevated sulphide values within the ore and waste is random and occurs at a low frequency.</p>	Updated results from ongoing geochemical testing have been provided in the Addendum to Appendix E (Geochemical Characterization Report)	Addendum to Appendix E (Geochemical Characterization Report)
465	CEA Agency	<p>SW1-21 Appendix J</p> <p>The EIS indicates that the tailings produced from ore processing, which will contain some residual cyanide and dissolved metals, will be directed to an in-plant cyanide destruction and precipitation circuit. Prior to discharge to the TMF, the process water and tailings will be treated at the process plant for cyanide, dissolved metals and potentially ammonia. The water quality of discharge will meet the provincial and federal effluent discharge limits.</p> <p>It is unclear what mitigation measures are being considered to ensure that dissolved metals and ammonia aren't exceeding the discharge limits.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide additional information regarding the mitigation measures that will be implemented to remove dissolved metals and ammonia.</p>	As described in Appendix Y (EA Commitments Table), IAMGOLD has committed to the monitoring and treatment of effluent from the polishing pond, as required, before discharge to the receiving environment. IAMGOLD can provide treatment to concentrations less than the effluent discharge requirements (MMER and O. Reg. 560/94, Effluent Monitoring and Effluent Limits – Metal Mining Sector). If required, treatment may be via a treatment plant to be located before the effluent discharge point at Bagsverd Creek. As presented in Appendix J (Water Quality TSD), Attachment II, Table A10, the predicted water quality in the polishing pond is not expected to exceed the MMER limits and is not anticipated that additional treatment will be necessary beyond the cyanide destruction circuit in the processing plant.	None.	n/a

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466	CEA Agency	<p>SW1-22</p> <p>Appendix J, Attachment 2 - Water Quality Modelling Report January 31, 2014</p> <p>In presenting the water quality model, the EIS states that, "A correction factor was applied to the MRA load to account for decreased reactivity over time as the MRA reaches a steady-state condition. Using arsenic as an analog, concentrations in the 14 humidity cells decreased between 9 and 60% over -weeks 1 through 34. It is assumed that it is reasonable to expect loading rates from the MRA to decrease 50% over the decades between the operations phase and the post-closure phase stage II. As such, a correction factor of 0.5 was applied to the lithology-specific loading rates in the post-closure phase stage II model to account for the decreased reactivity over time."</p> <p>There is empirical evidence that a build-up of oxidation products may increase loadings over time (E.g. Waste Rock monitoring at Equity Mine, B.C.)</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p><u>Reference:</u> W.A. Price, M. Aziz and K. Bellefontaine. Increase in Contaminant Concentrations Over Time From Waste Rock - 2011 Review of 2010 Financial Security at Equity Silver Mine. Mine Closure Conference Lake Louise, Alberta (http://www.trcr.bc.ca/httpwww-trcr-bc-ca-publications/)</p> <p>a) Provide evidence to support the assumption that the build-up of oxidation will not increase loadings over time, which may offset the assumption that loading rates from the MRA to decrease 50% over the decades between the operations phase and the post-closure phase stage II.</p> <p>b) Provide a discussion of how the fish and fish habitat effects predictions would change if the loading rates of the MRA do not decrease over time.</p>	<p>Waste rock at the Equity Mine is considerably acid generating, with lime treatment ongoing to adjust pH of drainage to near-neutral values. The acidification of waste rock over time can result in increased loading rates as metals become more soluble at lower pH values, which may reflect the apparent build-up of oxidation products and increased loading rates over time noted by the reviewer at Equity Mine. Nonetheless, the mine rock for the Côté Gold Project is non-acid generating (Appendix E; Geochemical Characterization Report), and therefore the example of Equity Mine is not analogous and the geochemical evolution is not expected to be similar.</p> <p>The loading rates calculated from the humidity cells containing mine rock show a decreasing trend over time for many parameters. If the current trends are extrapolated into the future, the loading rates would exhibit a decrease in mass load over time; note that this assumption was only applied to the post-closure phase stage II (i.e., >50 to 80 years after closure). The assumption that there is a decrease in the mass loading rate into the future is reasonable as the future mass load will decrease as reaction rates slow over the longer term. This is because the reaction kinetics will decrease exponentially over time due to increased oxygen ingress pathways and the formation of secondary mineral coatings on the reactive mineral surfaces. Since the early time mass loading rates calculated from the humidity cells reflect a combination of sulphide oxidation reaction kinetics and in part some solubility controls, it is therefore reasonable to assume that the mass loading rate will decrease 50 to 80 years after post-closure.</p> <p>The water quality model, including the derivation of mass loading rates to simulate contact water quality, uses a scientifically sound approach with the available information to provide conservative, to at worst realistic, predictions of effects to water quality. When comparing the predicted water quality of the drainage from the MRA, low-grade ore stockpile, and open pit to the discussions and data presented in Appendix E (Geochemical Characterization Report), the simulated water qualities of the contact water from the various mine site components aligns well with the general geochemical characteristics of the mine rock. Given that all model predictions carry some uncertainty, IAMGOLD is committing to conduct water quality monitoring of mine site components and receiving groundwater / surface water environments. Information attained through monitoring will be used to adjust the adaptive management plan for the Project, on an as needed basis.</p>	None.	n/a

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467	CEA Agency	<p>SW1-23</p> <p>Attachment 2 - Water Quality Modelling Report January 31, 2014</p> <p>Section 2.5.6 states that, "No information exists as to the specific quality of the process water that will be produced by the processing plant; as such, assumed concentrations were derived from typical process water compositions observed at analogous sites and using professional judgment (with the exception of cyanide species, as discussed below). Table 10 presents the assumed process water concentrations.</p> <p>The destruction of cyanide will create ammonia as a by-product. Based on total ammonia observed in tailings ponds at analogous sites, the cyanide destruction process is estimated to generate total ammonia concentrations in the process water of approximately 20 mg/L."</p> <p>However there is empirical evidence that total ammonia concentrations following cyanide destruction can greatly exceed 20mg/L. The concentration of ammonium at the Equity Mine in B.C. has reached 90 mg/L.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p><u>Reference:</u></p> <p>Price, W.A, and M. Aziz. 2012. The Flooded Tailings Impoundment at the Equity Silver Mine. 36th B.C. Mine Reclamation Symposium, Kamloops, British Columbia Sept 17th to 20th (http://circle.ubc.ca)</p> <p>a) Provide details of the examples of analogous sites and evidence to support how the Cote Gold Project's process water quality will mimic the process water of the analogous sites mentioned in Section 2.5.6.</p> <p>b) Provide a discussion of effects to fish and fish habitat should the ammonia concentrations differ from the predicted process water quality.</p>	<p>As noted by the reviewer, the total ammonia concentration of 90 mg/L at the Equity Mine, which operated from 1980 to 1994, is a single day ultimate maximum concentration taken from a decade's worth of monitoring data (Price and Aziz, 2012). The total ammonia concentration data presented in Price and Aziz (2012) reflects site-specific conditions, the cyanide leaching requirements for gold extraction, and the management of cyanide and ammonia in waste water that took place at the Equity Mine.</p> <p>Subsequent to the water quality modeling and EA submission, ageing tests were conducted on three composite tailings samples that were produced using bench-scale metallurgical and cyanide destruction tests for the Côté Gold Project. Laboratory analysis was performed on the ageing test decants on Day 0, Day 7, Day 29 and Day 60. Total ammonia concentrations ranged from 3.1 mg/L to 11.2 mg/L in the ageing test data. Based on the ageing tests that were completed on process water derived from Project-specific test work, the assumption that total ammonia in the process water will be about 20 mg/L is reasonable and conservative. This is consistent with other large gold operations in Ontario, and may perhaps be overly conservative.</p> <p>The water quality and aquatic effects assessments only include an assessment on predicted effects. A discussion on the effects to fish and fish habitat should the ammonia concentrations differ from the assumed process water quality is not relevant given that the assumption is conservative and the water quality model does not account for degradation of ammonia in neither the reclaim pond nor the receiving surface water environment. Given that all model predictions carry some uncertainty, IAMGOLD is committing to conduct water quality monitoring of receiving groundwater / surface water environments, including aquatic toxicity testing. Information attained through monitoring will be used to adjust the adaptive management plan for the Project, on an as needed basis.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
468	CEA Agency	<p>SW1-24</p> <p>Attachment 2 - Water Quality Modelling Report January 31, 2014, 2.6 Key Model Limitations and Assumptions</p> <p>Section 2.6 of Attachment 2 of Appendix J states that, "Screening-level static testing was not conducted on the rock samples selected for humidity cell testing and, as such, there is some uncertainty regarding the suitability (or the representativeness) of the existing humidity cell data to predict the drainage characteristics of the mine rock and pit walls. For the purposes of modelling, it is assumed that the available humidity cell test data is representative of the range of geochemical characteristics present in the mine rock, pit walls, and low-grade ore. Static test data for the humidity cell samples is partially available in Appendix E Section 7.5"</p> <p>Section 2.6 of Attachment 2 of Appendix J also states that, "No geochemistry data is available for the Project-specific tailings, as geochemical test work has not been completed on tailings samples. For the purposes of modelling, it is assumed that the available humidity cell test data collected from the 14 rock samples is representative of the range of geochemical characteristics present in the tailings. There is geochemical data for tailings available in Appendix E."</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide a discussion of the environmental effects should the pit flood faster than predicted.</p> <p>b) Provide a discussion, using the partially available data in Appendix E, Section 7.5 regarding the validity of the assumption that the humidity test cell data is representative the range of geochemical characteristics present in the mine rock, pit walls, and low-grade ore.</p> <p>c) Provide an updated prediction using geochemical data available in Appendix E and any other data that has become available to update their water quality predictions for tailings.</p> <p>d) Provide sample calculations for modelling results, including but not limited to calculations for arsenic and copper for the 'A' series of tables (predictions during operations).</p>	<p>The open pit is predicted to flood over a period of decades (50 to 80 years). The water quality model was designed to predict the water quality of the open pit lake and the downstream lakes (Three Duck Lakes) regardless of when the open pit lake is re-aligned with the Mollie River Watershed. Therefore, if the open pit lake flooded faster than predicted due to unaccounted for variances in natural groundwater inflow, the effects to water quality would be similar to those presented for the post-closure phase.</p> <p>Appendix J, Attachment II, Section 2.6 states that screening-level static testing was not conducted on rock samples selected from humidity cell testing and, as such, there is some uncertainty regarding the suitability of the existing humidity cell data to predict the drainage characteristics of the mine rock and pit walls at the time of the effects predictions stage of the EA. Subsequent analysis of the geochemistry, as presented in Appendix E, suggest that the humidity cell test samples are representative of the range of geochemical conditions expected to be encountered in the mine rock. Graphics that show the cumulative values or concentrations of NPR, carbonate NPR, and various metals for the fourteen humidity cell samples plotted with the overall geochemical reference dataset are presented in Appendix E. The NPR values, carbonate NPR values and trace element concentrations measured in the humidity cell samples generally cover the wide range of values observed in the overall geochemistry dataset. Based on a review of the geochemistry data to date, it is our opinion that the humidity cell test results represent a reasonable range of geochemical conditions.</p> <p>At the time of the effects prediction stage of the EA, and prior to the EIS / Draft EA Report submission, no site-specific data was available for neither the geochemistry of the tailings nor the process water quality produced by the processing plant. For the purposes of the water quality modeling, the tailings geochemistry, including metal leaching characteristics, were assumed to be similar to the mine rock; as such, the model input for the tailings geochemistry was assigned based on MRA loading rates. Process water quality was derived using knowledge of analogue gold mining project sites and professional judgement; the exception was cyanide concentrations in the process water that were assumed based on the concept-level cyanide destruction treatment specifications.</p> <p>Subsequent to the EIS / Draft EA Report submission, humidity cell testing was performed on three tailings samples produced for the Project. The samples were composites of various tailings prepared as part of IAMGOLD's bench-scale metallurgical and cyanide destruction testing program. The humidity cells were initiated in March of 2014. Preliminary geochemical source terms are based on the average loading rates obtained over 18 weeks of testing of the three tailings humidity cells. Furthermore, laboratory analysis was performed on the process water quality through an ageing test procedure on Day 0, Day 7, Day 29 and Day 60. The addendum to Appendix J (Water Quality TSD) provides a tabular comparison of the:</p> <p>i) original versus new average tailings humidity cell loading rate input data, and</p> <p>ii) original versus new process water quality input data.</p> <p>The new tailings humidity cell loading rates and process water quality data were input into the water quality model and predictions were re-simulated. The TMF reclaim pond has been designed to not discharge water to either the mine water pond nor the polishing pond. The only expected discharge from the TMF to the receiving surface water environment is via seepage to Bagsverd Lake, Unnamed Lake and Bagsverd Creek, all located within the Mesomikenda Lake Watershed. It is important to note that seepage was incorporated into the simulations of both the original (i.e., as presented in the EA) and revised versions of the water quality model. The Mollie River watershed does not receive seepage from the TMF, and the predicted water qualities for receivers in the Mollie River Watershed are therefore unchanged from those presented in the EA.</p> <p>Response continues on next page.</p>	<p>Revised model results that include the site specific tailings humidity cell data and process water quality have been provided in the Addendum to Appendix J (Water Quality TSD).</p>	<p>Addendum to Appendix J</p>

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468 cont	See previous page.	See previous page.	<p>To assess the effect that applying the new tailings humidity cell loading rates and process water quality inputs have on the surface water receiving environment, the original predicted water qualities of key surface water features in the Mesomikenda Lake Watershed were compared to the revised predictions. These comparisons are presented in tables that can be found in the Addendum to Appendix J (Water Quality TSD). For the average, dry and wet year conditions, the following parameters show a marginal increase in concentrations due to the revised tailings humidity cell loading rates and process water quality data: aluminum, calcium, cobalt, copper, iron, molybdenum, nitrate, potassium, sodium, strontium and sulphate. For the average, dry and wet year conditions, the following parameter concentrations were unchanged due to the revised tailings humidity cell loading rates and process water quality data: total ammonia, un-ionized ammonia, antimony, arsenic, boron, cadmium, chloride, lead, manganese, nickel, total phosphorus, uranium, vanadium and zinc. For the average, dry and wet year conditions, the following parameters show a decrease in concentrations due to the revised tailings humidity cell loading rates and process water quality data: barium, cyanide (total), cyanide (free) and magnesium.</p> <p>The limited change to the water quality predictions is related to the transport pathway between the TMF and the surface water receiver, which is through seepage only. Because the seepage rates that bypass the seepage collection system are low relative to the flow in the surface water receivers (e.g., Bagsverd Creek), changes to the seepage water concentrations have limited effect on the overall mass load within the surface water environment. As such, the revised tailings humidity cell loading rates and process water quality inputs did not result in material changes to the effects predictions or conclusions of the effects predictions. The original model assumptions for tailings geochemistry and process water quality were therefore reasonable and the revised model results do not change the outcome of the impact assessment.</p> <p>In support of the water quality component of the EA, deterministic water quality models were developed for the Project using GoldSim. GoldSim is a graphical, object-oriented mathematical modelling program where all input parameters and functions are defined by the user and are built as individual objects or elements linked together by mathematical expressions. The water quality model is extraordinarily complex, which incorporates the site wide and receiving environment water balances, and water quality / geochemistry source terms for many model components. The integrated system was simulated using a daily time step for thousands of time steps. Sample calculations for the "A" series tables are incredibly onerous and cannot be duplicated by hand for example purposes.</p>	See previous page.	See previous page.

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469	CEA Agency	<p>SW1-25</p> <p>Attachment 2 - Water Quality Modelling Report January 31, 2014, 2.5.4 Residual Explosives Inputs</p> <p>The EIS indicates in the Water Quality Modelling report in Appendix J, Attachment 2 that, "Residual explosives inputs are estimated to be: ANFO: 94%, NH₄NO₃, 6% Fuel Oil, Emulsion: 80% NH₄NO₃, 6% H₂O, 6% Fuel Oil, 6% Mineral Oil, 1% Thiourea and 1% acetic acid."</p> <p>"An explosives usage rate (powder factor) of 0.30 kg per tonne mine rock and ore is assumed for the purposes of water quality modelling, assuming 70% ANFO use and 30% emulsion. The fraction of explosive residues remaining after blasting (i.e., "waste rate") is assumed to be 5%. The residual mass of nitrogen species by rock type is presented in Table 9. Half of the explosives waste is assumed to be contained within the MRA and low- grade stockpile, split based on the relative tonnages of each of the two (with the tonnage of waste rock and ore being 71.5% and 28.5% of the total mine rock tonnage, respectively). The other half is assumed to remain within the open pit. Loading rates were assigned assuming that 1% of the nitrogen is available per year, which is consistent with observations at mine site where studies have been completed on water quality effects due to residual explosive loading rates associated with mine rock (Ferguson and Leaks 1988)."</p> <p>It is unclear how 50% of explosive waste would be left in the pit over the course of the mine life given that residual explosives waste will be extracted along with mine rock, ore and low-grade ore during the entire operations phase.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide an supporting evidence for why half of the explosives waste would remain in the pit.</p> <p>b) Provide a discussion of how the water quality effects predictions would change should more or less waste remain in the pit over the life of the mine.</p> <p>c) Provide a discussion of how water quality prediction changes would affect the fish and fish habitat effects predictions.</p>	<p>As detailed in Appendix J (Water Quality TSD), Section 1.1.6, the contact water from the open pit, the MRA and the low-grade ore stockpile is directed to the mine water pond. Surplus water in the mine water pond not required for processing activities is directed to the polishing pond and eventually discharged to the environment in accordance with Federal and Provincial discharge requirements. As the predicted water quality in the mine water pond already incorporates the combined residual explosives load from the open pit, the MRA, and the low-grade ore stockpile, adjusting the percentage of residual explosives assigned to the MRA/low-grade ore stockpile to be higher would not materially change the conclusions of the effects predictions.</p>	None.	n/a
470	CEA Agency	<p>SW1-26</p> <p>Appendix E, Cote Gold Project Geochemical Characterization Report, December 2013, Mine Rock Characterization</p> <p>The EIS indicates that 14 humidity cell tests were conducted on composite rock core samples from only 4 mine rock units (Tonalite, Magma Mixing Breccia, Diorite and Diorite Breccia). The other rock units such as quartz diorite and mafic dykes do not appear to have been run for humidity cell tests. So the humidity cell test results may not be representative of the entire mine rock mass.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Provide a rationale for not including mine rock samples from quartz diorite and mafic dykes in humidity cell tests</p> <p>b) Provide a discussion of how incorporating other major lithologies (e.g., quartz diorite and mafic dyke lithologies into the humidity cell testing would alter the water quality modelling predictions and predictions of effects to fish and fish habitat.</p>	<p>a) The four rock types tested (Tonalite, Magma Mixing Breccia, Diorite and Diorite Breccia) represent approximately 93% of the mine rock volume. The quartz diorite and mafic dyke units represent approximately 1.4% and 1.5% of the rock volume respectively and are characterized by low sulphide and high neutralization potential values with only one sample of mafic dyke reporting an NPR <2. Overall both these rock types reported higher NPR values than most other rock types and were considered to have a very low risk for ARD.</p> <p>b) The "other" lithologies were accounted for in the water quality modelling. Because the geochemistry of the "other" lithologies is not notably different than that of all the major rock types, the data from all 14 humidity cells was used to calculate loading rates for the "other" rock types. This was done by taking the median of the loading rates for the 14 humidity cells. Therefore, it is being assumed that the loading rates from the "other" rock types are statistically in the middle between the highest and lowest loading rates observed as part of the humidity cell testing. As discussed above, this is a reasonable (conservative to at worst a realistic) assumption given that: i) the "other" rock types are a relatively small percentage of the overall mine rock, and ii) any geochemical differences between the "other" rock types and the major rock types is not significant. Therefore, the "other" rock types are predicted to contribute a small percentage of the overall mass load via mine rock drainage, and have limited to negligible influence on surface water quality.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
471	CEA Agency	<p>SW1-27</p> <p>Appendix E, Cote Gold Project Geochemical Characterization Report, December 2013, Mine Rock Characterization</p> <p>The ML-ARD characterization program for tailings included static testing only. It appears that kinetic tests (both laboratory and field cell) were not conducted on the tailings samples.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality and subsequently fish and fish habitat.</p> <p>a) Conduct and provide the results of kinetic testing of tailings samples in order to determine the primary reaction rates of these materials under laboratory and field weathering conditions and understand the geochemistry of the resulting leachate in the context of potential for ML-ARD generation.</p>	See response to Comment #139.	None.	n/a
472	CEA Agency	<p>SW1-28</p> <p>EIS Report Figure 1-2, Section 5.10.7.2, 5.10.7.3; Appendix I, Attachment I, Section 5.5, Table 12</p> <p>As part of the channel realignment around the mine site, the EIS states that some lakes will gain water depth and others will lose water depth. Information has not been provided on how new water levels were predicted. Further, insufficient information was provided on the predicted range of new water body levels, which needs to take into account seasonal variations in flow and precipitation. A complete understanding of the range of water levels that may occur at various times of the year (i.e. spring flood, summer low flow) is key to understanding how changes to water body levels may impact the environment, level changes to assess impacts and determine any required mitigation (i.e. in relation to habitats, erosion, methyl mercury formation).</p> <p>The information (mapping) that is provided is also very unclear and of too small a scale to conduct an analysis of the potential impact. In addition, area calculations of areas of each water body to be flooded (or of wetted area loss) are not also provided. Such calculations would serve to quantify the predicted changes to surface water and habitats.</p> <p>The maps shown in Appendix I, Attachment I, Appendix C should clearly show locations where lakes are wetted now and where they will be wetted after channel realignments and damming. Areas of loss of wetted area and gain of wetted area should be calculated for each lake and watercourse. Subsequent loss and gain of each habitat type should also be calculated.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat.</p> <p>a) Provide an analysis of lake level changes including predictions for new flooded area, loss of existing wetted area, and changes in expected seasonal variations in lake level variations.</p> <p>b) Provide a description of how and the degree to which the new water course outlets will drain, including a description of approximate outlet levels that will control the new proposed lake levels.</p>	<p>The predicted effects on water quantity, water quality and aquatic biology are provided in detail in Appendix I (Hydrology TSD), Appendix J (Water Quality TSD) and Appendix N (Aquatic Biology TSD) and are summarized in the Amended EIS / Final EA Report, Sections 9.4, 9.6 and 9.9.</p> <p>More detailed mapping and information on the flow controls will be developed during Project permitting.</p> <p>More detailed information on watercourse realignments has been provided in the Addendum to Appendix N (Aquatic Biology TSD).</p>	<p>A description of the watercourse realignments and their characteristics, and an assessment of realignments on hydrographs has been provided in the Addendum to Appendix N</p>	Addendum to Appendix N

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473	CEA Agency	<p>SW1-29 Appendix I Section 4.1.2</p> <p>The quantification of impacts to surface water flow and mine water budget were predicted using average annual values. In order to assess the significance of impact, seasonality should be incorporated into the analysis. This analysis should include assessment of water flow changes and water takings during low flow periods for at least fall, winter and summer.</p> <p>840 m³/day is provided as an estimate of daily water demand for mine operations and it is estimated at 1% of average annual of Mesomikenda Lake outflow. However substantial impacts could occur at seasonal low flows but not at average annual flows. The proposed extraction rate should be compared to seasonal low flows in order to assess the significance of the impact during this critical period.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat. a) Provide an assessment of the impact of low flow periods on the ability to discharge water from the polishing pond to Bagsverd Creek and Neville Lake due to water quality issues. Provide an assessment of the impact of water taking from Mesomikenda Lake during low flow periods. Seasonal low flow values (e.g. at least fall, summer and winter values) should be provided and a comparison made to the proposed water withdrawal for mine operations.</p>	<p>The ability for Bagsverd Creek and Neville Lake to accept discharge water from the polishing pond is dependent on the rate of discharge from the polishing pond. Discharge from the polishing pond is expected to be minimal, if any, during dry years due to process plant water demand and recycling of process water on site. Seasonal discharge for Bagsverd Creek, Neville Lake and Mesomikenda Lake are provided in the Addendum to Appendix I (Hydrology TSD).</p> <p>Discharge from Mesomikenda Lake is also related to the operation of the Mesomikenda Lake Dam, where operating level objectives have been set. Additional simulations regarding Mesomikenda Lake are outlined in Addendum to Appendix I, and the modelled scenarios simulated a maximum of 0.2 m change during the dry summer conditions. It is recognized that the ultimate water withdrawal rate from Mesomikenda Lake will be subject to further analysis during the Permit to Take Water application process.</p>	Added seasonal discharge for several lakes and additional scenarios as part of the Addendum to Appendix I (Hydrology TSD).	Addendum to Appendix I
474	CEA Agency	<p>SW1-30 Appendix I, Attachment I, Section 5.1.1, 6.1.1</p> <p>Yearly water shortages for mine operations during low precipitation and high evaporation years do not appear to have been considered. With high evaporation and low precipitation years there may be no water excess for mine operations. Individual yearly evaporation rates may be significantly higher than the 400 - 600 mm average value cited in the EIS report. This may lead to higher than expected water taking needs and, in turn, increased water quality and aquatic habitat impacts.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat.</p> <p>Provide an analysis of multiple years of high evaporation and low precipitation to ensure that appropriate contingencies are in place for mine operations and to assess the potential water quality and aquatic habitat impacts that may occur.</p>	<p>The 1:25-year dry year simulated the hydrological response to a year in which 734 mm of precipitation and 646 mm of evaporation occurred. This provides a total water surplus of 88 mm during the year. For an analysis of multiple years of high evaporation and low precipitation, IAMGOLD completed an additional model scenario that simulated this 1:25-year climate occurring for ten consecutive years with consequential increased freshwater process water demand. This simulation did not result in a decreasing trend in water level or discharge in Mesomikenda Lake. Further detail is presented in Addendum to Appendix I (Hydrology TSD). The water withdrawal rate from Mesomikenda Lake will be subject to further analysis during the Permit to Take Water application process.</p>	Additional information provided in an Addendum to Appendix I (Hydrology TSD).	Addendum to Appendix I

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475	CEA Agency	<p>SW1-31 EIS Report Section 5.7, 5.10.7, Appendix I</p> <p>The EIS states that “natural channel design” will be used for significant lengths of channel realignment which are proposed to route water around the mine site. In order to ensure that excess channel erosions does not occur this will include construction of active channel (bankfull channel) and floodplain function of the new channel. The channel characteristics of a natural channel play an important part in attenuating flow to prevent erosion.</p> <p>It is unclear whether both the active channel and floodplain will be constructed. The feasibility of the construction of these channels in the locations proposed was not provided. Large amounts of earth movement or significant construction of channel through Canadian Shield rock could be technically problematic and carry its own set of potential impacts.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat.</p> <p>a) Provide a description of the channels to be constructed, including a description of characteristics such as roughness, energy dissipation in riffles and pools, channel length and sinuosity.</p> <p>b) Indicate whether these channels will be constructed in such a manner that pre and post hydrographs are the same by maintaining natural channel characteristics mentioned in the description requested above.</p> <p>c) Provide an assessment of soils and topography in the areas identified for new channel construction confirm that the channel construction and design are feasible.</p>	<p>A detailed description of the physical characteristics of the realignment channels has been provided in the Addendum to Appendix N (Aquatic Biology TSD).</p>	<p>Channel realignment characteristics have been provided in the Addendum to Appendix N (Aquatic Biology TSD)</p>	<p>Addendum to Appendix N</p>
476	CEA Agency	<p>SW1-32 EIS Report, Section 1.1.7, Appendix I</p> <p>The proposed channel realignment will result in significant increases in flow to some natural sections of channel (e.g. channels connecting Unnamed Lake #2 and Unnamed Lake #1 to Bagsverd Creek, and channels connecting Little Clam Lake to Bagsverd Lake). The high amount of flow through the natural channels could result in substantial channel erosion.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat.</p> <p>a) Provide a fluvial geomorphology assessment to ensure that the existing natural channels can handle additional flow without significant erosion.</p> <p>b) In the event erosion is determined likely, provide a description of the mitigation measures and monitoring plans in place to prevent erosion in the existing natural channels (e.g., modifications to the natural channels)</p> <p>c) Provide a discussion of potential effects to fish and fish habitat should unexpected erosion occur.</p>	<p>Further detailed engineering will be completed to develop channel features capable of minimizing erosion in locations where flow increases will occur. As such, no erosion is anticipated in these locations. Additional analysis along Bagsverd Creek with respect to changes in water level and velocity are provided in the Addendum to Appendix I. Note that a geomorphological survey of Bagsverd Creek has been initiated in 2014 and will continue during the development of the Project.</p>	<p>Additional information provided in an Addendum to Appendix I (Hydrology TSD).</p>	<p>Addendum to Appendix I</p>

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477	CEA Agency	<p>SW1-33 EIS Report Section 1.1.7, 5.16.4, Figure 5-5, Appendix I</p> <p>In the EIS, it is proposed that after closure of the mine and filling of the open pit with water that some of the channel realignments will be redirected so that water that had been redirected from Bagsverd Creek to the Mollie River during operation of the mine will be redirected back to Bagsverd Creek, while connecting the pit lake to Three Ducks Lake. It is estimated to take approximately 80 to 100 years from the time that the realignment channels are constructed for the pit to fill with water.</p> <p>The realignment proposed in Mine Closure Phase II may have unanticipated and potentially adverse effects to the ecosystem that has re-established itself to its new realignment.</p> <p>All post-closure options should be considered, such as leaving the flow regime as is or altering it, and the impacts of all options should be assessed with respect to changes and impacts to all social and ecological components. Further, long-term monitoring would be required to determine when the pit is finally filled with water. The flow conditions (and possibly habitats) that exist when the pit is filled will likely be quite different from what exists at the end of operations, and will need to be factored into any realignments that eventually do occur.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat.</p> <p>a) Update the alternatives assessment to include the any technically or economically feasible option of leaving the flow regime in place indefinitely following the operations phase.</p> <p>b) Provide a description of the predicted effects to the environment of altering the flow regime following closure for a second time.</p>	<p>As described in Section 5.16.3 it is anticipated that it would take approximately 50 to 80 years for the open pit to flood. Once the open pit is flooded it is the most technically and environmentally feasible option to remove most of the retention dams. The flow systems will be designed such that the removal of the dams will not negatively affect existing fisheries. Also, IAMGOLD aims to re-establish currently existing watershed. The effects prediction and assessment of impacts consider this scenario. No other alternatives are feasible.</p>	None.	n/a
478	CEA Agency	<p>SW1-34 Appendix I Section 5.2.1</p> <p>It is indicated that WSC gauge on the Mollie River and OPG Mesomikenda Lake Dam data will be used in the monitoring. However, if the aforementioned data is not available, it is important to have some contingencies and/or redundancy in the monitoring to ensure that mitigation is applied appropriately.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat.</p> <p>Provide a description of the contingency plans for gathering of data for monitoring and follow-up should sources of data indicated in the EIS no longer be available.</p>	<p>A site water monitoring network will be developed through Provincial ECA approvals and a Federal <i>Fisheries Act</i> authorization. This network is expected to provide more comprehensive information about site flows than existing WSC gauges. The network is expected to include multiple water level / flow measurement devices on surrounding streams and rivers, which will provide redundancy if individual devices fail.</p>	None.	n/a
479	CEA Agency	<p>SW1-35 Appendix I, Attachment I, Section 4.2.2 and Appendix A</p> <p>Many of the rating curves have issues that make the curves relatively inaccurate. These issues include changes in control due to beaver dam construction, change of the culverts at the gauge site and ice conditions.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat.</p> <p>a) Provide a discussion regarding the validity of the rating curves based on data from current onsite flow monitoring stations.</p> <p>b) Provide a discussion of how the prediction of effects may change if the rating curves derived from current flow monitoring stations are inaccurate.</p>	<p>During the development of the hydrological model, the simulated discharge based on the applied rating curves was compared to the relative contributing area of the flow monitoring stations in each of the major studied watersheds (i.e., the Mesomikenda Lake and Mollie River watersheds). As detailed in the Addendum to Appendix I (Hydrology TSD), the relative flow contributions to the model outflow locations were within 5% of the relative watershed contributing areas. In this respect, the applied rating curves were considered acceptable. As noted, hydrological monitoring is ongoing at the Côté Gold Project Site in order to refine the rating curves developed for the Draft EA Report.</p>	Additional information provided in an Addendum to Appendix I (Hydrology TSD).	Addendum to Appendix I

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480	CEA Agency	<p>SW1-36 EIS Report Section 5, Section 8</p> <p>In the EIS, it is proposed that water within the mine site will remain on the site using the mine rock pond, TMF and other ponds on site. Estimates of the volumes of the individual ponds in relation to high precipitation events do not appear to be provided. High precipitation events can result in higher than predicted water levels and inadequate storage.</p> <p>A purely qualitative description of management of excess water supply is provided in Section 8 of the EIS, however this is considered insufficient to determine whether or not it will mitigate the potential for environmental effects in the result of a high precipitation event.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat.</p> <p>a) Provide the volumes and surface catchment areas for the various ponds used for the collection of water.</p> <p>b) Provide a more in depth discussion of how high precipitation events will be addressed, including a numeric description of the capacities of the collection ponds relative to their catchment areas.</p> <p>c) Provide a discussion of effects should any of the collection ponds overflow during high precipitation events.</p>	<p>The total volume of the various storage ponds will be confirmed during detailed engineering phases of the Project. These will be commensurate with requirements based on the assigned Hazard Potential Classification under the <i>Lakes and Rivers Improvement Act</i> or Canadian Dam Safety Guidelines. As such, each pond will incorporate an allowance for storm storage (e.g., a 1-in-100 year, 24-hour event). Estimated catchment areas for each of these storage ponds are provided in the Table below.</p> <table border="1"> <thead> <tr> <th>Description</th> <th>ID</th> <th>Catchment Area (ha)</th> </tr> </thead> <tbody> <tr><td>MRA seepage collection ponds</td><td>MRSP-1</td><td>32</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-2</td><td>170</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-3</td><td>11</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-4</td><td>9</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-5</td><td>16</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-6</td><td>16</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-7</td><td>38</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-8</td><td>7</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-9</td><td>66</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-10</td><td>12</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-11</td><td>46</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-12</td><td>9</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-13</td><td>34</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-14</td><td>47</td></tr> <tr><td>MRA seepage collection ponds</td><td>MRSP-15</td><td>105</td></tr> <tr><td>ore stockpile seepage collection ponds</td><td>OSSP-1</td><td>73</td></tr> <tr><td>ore stockpile seepage collection ponds</td><td>OSSP-2</td><td>8</td></tr> <tr><td>ore stockpile seepage collection ponds</td><td>OSSP-3</td><td>12</td></tr> <tr><td>ore stockpile seepage collection ponds</td><td>OSSP-4</td><td>12</td></tr> <tr><td>mine water pond</td><td>MWP</td><td>81</td></tr> <tr><td>TMF</td><td>TMF</td><td>852</td></tr> <tr><td>polishing pond</td><td>PP</td><td>110</td></tr> </tbody> </table> <p>IAMGOLD defined design criteria for the collection ponds carefully and conservatively and does not expect that they would overflow during any of the Project phases. However, Chapter 13 of the EA addresses accidents and malfunctions, and, in more detail, Section 12.2.3 addresses seepage collection system failures.</p>	Description	ID	Catchment Area (ha)	MRA seepage collection ponds	MRSP-1	32	MRA seepage collection ponds	MRSP-2	170	MRA seepage collection ponds	MRSP-3	11	MRA seepage collection ponds	MRSP-4	9	MRA seepage collection ponds	MRSP-5	16	MRA seepage collection ponds	MRSP-6	16	MRA seepage collection ponds	MRSP-7	38	MRA seepage collection ponds	MRSP-8	7	MRA seepage collection ponds	MRSP-9	66	MRA seepage collection ponds	MRSP-10	12	MRA seepage collection ponds	MRSP-11	46	MRA seepage collection ponds	MRSP-12	9	MRA seepage collection ponds	MRSP-13	34	MRA seepage collection ponds	MRSP-14	47	MRA seepage collection ponds	MRSP-15	105	ore stockpile seepage collection ponds	OSSP-1	73	ore stockpile seepage collection ponds	OSSP-2	8	ore stockpile seepage collection ponds	OSSP-3	12	ore stockpile seepage collection ponds	OSSP-4	12	mine water pond	MWP	81	TMF	TMF	852	polishing pond	PP	110	None.	n/a
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481	CEA Agency	<p>SW1-37 Appendix I, Attachment I, Table 14</p> <p>The flow values in Table 14 would indicate that increases in flow are not proportional to watershed area; however no explanation was given for this. It is important to have relatively accurate flow values so that changes in flow due to channel realignment can be estimated and the impact can be assessed.</p> <p>The response to this information request will assist the Agency to determine potential effects of the project on water quality, water quantity and subsequently fish and fish habitat.</p> <p>a) Provide upstream drainage area for each of the stations in Table 14 b) Provide a rationale if flow increases are not proportional to drainage area.</p>	<p>The upstream areas for each hydrological station are provided in the baseline Hydrology and Climate report (Table 3). As described in the response to Comment #479 and detailed in the Addendum to Appendix I, the relative flow contributions were within 5% of each of their respective relative contributing areas.</p>	<p>Additional information provided in an Addendum to Appendix I (Hydrology TSD).</p>	<p>Addendum to Appendix I</p>
482	CEA Agency	<p>TL1-1 Chapter 9 – p.9-50, 9-53, Chapter 10 – p.10-17, Chapter 11 – p.11-24, 11-44, Figure 5-3, Figure 6-2, Figure 6-6, Appendix E – Geochemical Report p. 3-1, Table 6-2 p. 7-1-7-3, Table 7-2, Chapter 5, Chapter 9 of the EIS- Section 9.9.2.1 (Construction Phase)</p> <p>In the EIS it is stated that, “flooding of terrestrial vegetation for watercourse realignments may cause increased methyl mercury production which may reduce the usability of sport fish for recreation” (9-50) and, “it is possible that the decay of terrestrial vegetation will result in the production of methyl mercury that will be taken up by resident fish. This could reduce the value of recreational fishing within the watershed although it would not be expected to harm the fish themselves. The removal of vegetation prior to flooding will reduce the potential for methyl mercury production. There are currently fish consumption advisories for mercury in lakes within the local study area. (MOE, 2013) and therefore, the potential to affect the recreational value of these lakes would be minor”.</p> <p>Further information could not be found in the EIS and supporting documents on methyl mercury and the composition of the organic and mineral horizons of the soils (i.e. mercury and carbon concentrations) to support the prediction “that flooding may cause increased methyl mercury production” or evidence to support the conclusion that removal of vegetation prior to flooding would be an effective mitigation measure.</p> <p>Given that the methyl mercury concentrations in water depend on several factors, including the composition of the organic and mineral horizons of the soils in the vicinity of an area that will be flooded, additional information is required.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects to migratory birds, wildlife and wildlife habitat that support Aboriginal activities, and/or impacts to Aboriginal peoples as a result of the Project.</p> <p>a) Provide baseline information (from field work and/or literature review as applicable) on the mercury and methyl mercury levels in the project area, particularly in soils/terrains that will be flooded. As part of this, characterize the organic and mineral horizons of soils in terms of mercury and carbon concentrations in representative vegetation cover areas. b) Provide evidence to support the statement that removal of vegetation would mitigate the potential effect of increased methyl mercury in the environment; and, examples of other sites where this technique has been effective (if available).</p>	<p>A response to comments on the potential for methyl mercury production has been provided and detailed in the Addendum to Appendix N (Aquatic Biology TSD) in light of changes to mitigation measures proposed for the Project.</p> <p>Although methyl mercury production is not expected to be a concern, IAMGOLD is committing to remove terrestrial vegetation within the small areas that are expected to experience flooding prior to the construction of watercourse realignments (Section 10, Table 10-2); this commitment has been expanded to include the removal of shallow organic-rich soils in the small areas expected to become flooded. Table 4.2 in Appendix N has been revised (see Addendum to Appendix N). These mitigation measures are expected to further limit methyl mercury production (Windham-Meyers 2008). Furthermore, low-level total mercury and methyl mercury have been added as parameters to the baseline water quality sampling and fish tissue (total mercury only) monitoring as part of the overall monitoring commitments for the Côté Gold Project. Section 5.0 (Monitoring) of Appendix N (Aquatic Biology TSD) has been modified to include mercury monitoring (see Addendum).</p> <p>Methyl mercury that is generated from inorganic mercury that is sequestered by terrestrial vegetation from the atmosphere typically occurs at very low total concentrations (i.e., nanograms per litre). The generation of methyl mercury depends upon the development of favourable geochemical conditions (i.e., sulphate reducing) to allow for sulphate reducing bacteria to transform the inorganic mercury to organic mercury. The rate of the microbial-induced methylation of the mercury depends on a number of factors including: distribution and concentrations of inorganic mercury in biodegradable organic matter, geochemical conditions (pH, redox, temperature), presence of compounds that can complex with inorganic mercury (e.g., dissolved organic carbon and sulphide), and presence and activity of sulphate-reducing bacteria (Benoit et al. 2003). Uncertainties associated with the source term, geochemical conditions and microbial communities, compounded with uncertainties associated with modelling exposure pathways and bioaccumulation in fish, makes modelling the overall effect of potential methyl mercury production very challenging and carries a range of uncertainty that is likely to be significantly greater than the range of the predicted magnitudes. Therefore, modelling methyl mercury does not provide value in the context of the EA, and would not remove the need to follow through with the proposed mitigation and monitoring commitments that are discussed above.</p>	<p>Additional information on methyl mercury production has been provided in the Addendum to Appendix N (Aquatic Biology TSD)</p> <p>Removal of organic soils, in addition to removal of vegetation, has been added to Chapter 10 as a mitigation measure to reduce the potential for methyl mercury production along the realignments</p> <p>Total mercury and methyl mercury have been added to Chapter 16 as monitoring parameters for the baseline water quality and fish tissue sampling</p>	<p>Addendum to Appendix N Chapter 10 Chapter 16</p>

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483	CEA Agency	<p>TL1-2 EIS Report, Section 6.4.2; Appendix K; Appendix W – HHRA TSD – Table 4; Section 2.2.1 and 2.2.3.2</p> <p>The ambient soil chemistry in regard to trace elements and the ambient concentrations of trace elements in wetland and upland vegetation is not clear.</p> <p>In Appendix W, Table 4 presents the increase in the concentration of the identified parameters in soil as a result of project activities. Furthermore, Appendix W reports that no parameters of potential concern were identified in surface soil hence no “unacceptable” risks from exposure. There is no discussion about current background soil concentrations and the total increase from background as a result of project activities. The total concentration should be compared to applicable health-based criteria and then screened for further assessment based on potential health effects and presented in the Human Health Risk Assessment (HHRA). To meet the requirements of the EIS guidelines, a complete HHRA examining all exposure pathways for pollutants of concern may be necessary to adequately characterize potential risks to human health.</p> <p>Furthermore, it is unclear whether there will be a monitoring program to assess impacts to human health as a result of changes to the trace element uptake in soils and in wetland and upland vegetation at mine closure, and where possible, during the mine life.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects to migratory birds, wildlife and wildlife habitat that support Aboriginal activities, and/or impacts to Aboriginal peoples as a result of the Project.</p> <p>a) Provide information on: the ambient concentrations of trace elements in soil and wetland and upland vegetation; an evaluation of the current baseline soil and vegetation (wetland and upland) concentrations at the project site and expected increases in concentrations as a result of project activities; and comparing health-based criteria in order to determine which contaminants of potential concern (COPCs) should be carried forward in the HHRA; and an update the HHRA as applicable.</p> <p>b) Clearly identify environmental effects, mitigation measures and residual effects, as well as potential impacts to Aboriginal peoples.</p> <p>c) Provide proposed commitments to monitoring programs for assessing trace element uptake in soils and vegetation.</p>	<p>The approach taken to assessing changes in ambient concentrations of trace elements in soil, and by extension vegetation and wildlife, was based on an evaluation of changes in soil chemistry resulting from wet and dry deposition over the lifetime of the Project. As a conservative measure, the quantities of trace metals deposited were assumed to mix in the top one centimeter of soil only. Information on local background concentrations of different elements in soil indicated that concentrations are within the range considered background for Ontario soils. As such, for the purpose of the HEHRA, results of depositional modelling were compared to the Table 1 SCS developed by the Ontario MOECC. These are based on an extensive sampling program of undisturbed urban and rural parkland across Ontario. The Table 1 SCS are based on the 98th percentile of the sampling dataset to account for natural variability. As the depositional modelling did not predict an increase in soil concentrations for any parameters evaluated approaching the Table 1 SCS, it could be concluded that there would be no acceptable risk via direct and indirect soil contact pathways inclusive of uptake by plants and grazing animals.</p> <p>Additional discussion, including a discussion on background soil concentrations in and around the Project site has been added to the relevant section of Appendix W (HEHRA).</p> <p>a) As above. Section 2.1.3.2 of Appendix W (HEHRA) includes a discussion of expected changes in soil concentration as a result of Project activities. As these levels do not increase above background levels in Ontario soils, it can be concluded that there is no unacceptable health risk associated with direct and indirect soil contact pathways.</p> <p>b) As unacceptable risks were not identified associated with soil contact pathways, mitigation measures are not required and have not been recommended.</p> <p>c) Considering the depositional modelling results and the modest increase in soil concentrations of trace elements, a monitoring program for assessing trace element uptake in soils and vegetation is not considered necessary.</p>	<p>The following text has been added to Appendix W (HEHRA), Sections 2.1.3.2 and 3.1.2.2:</p> <p>“Incremental changes in soil quality were assessed against criteria representative of “background” soil quality in Ontario (i.e., Table 1 SCS; MOE, 2011). Table 1 SCS were developed by the Ontario Ministry of the Environment and Climate Change and are based on an extensive sampling program of undisturbed urban and rural parkland across Ontario. The Table 1 SCS are based on the 98th percentile of the sampling dataset to account for natural variability. Information on local background concentrations of different elements in soil indicates that concentrations are within the range considered background for Ontario soils.”</p>	Appendix W (HEHRA), Sections 2.1.3.2 and 3.1.2.2

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
484	CEA Agency	<p>TL1-3 EIS Report, Section 6.4.2, Appendix K; Appendix M</p> <p>It is unclear whether topsoil and overburden is suitable for use in re-vegetation of surface-disturbed areas.</p> <p>Based on the results of the terrain and soil surveys, it is unclear whether an assessment of terrain stability was conducted. Information on terrain and soil surveys and mapping should be used in the soil salvage, soil and surface sediment erosion control assessment, and preparation of the closure plan. This information is needed to ensure that re-vegetation as part of the reclamation process is sufficiently characterized for regional and local areas occupied by migratory birds, as well as wildlife and wildlife habitat that support Aboriginal activities (ex. hunting), and to determine the potential environmental effects and residual effects to migratory birds, as well as wildlife and wildlife habitat that support Aboriginal activities (ex. hunting).</p> <p>The response to this information request will assist the Agency in determining potential environmental effects to migratory birds and wildlife and wildlife habitat that support Aboriginal activities, and/or impacts to Aboriginal peoples as a result of the Project.</p> <p>a) Provide information on terrain stability and explain whether topsoil and overburden is suitable for use in re-vegetation of surface-disturbed areas, and if so, which topsoil and overburden, in what locations and for what types of re-vegetation.</p> <p>b) Provide information on how re-vegetation will mitigate effects to migratory birds and wildlife and wildlife habitat that support Aboriginal activities (ex. hunting).</p>	<p>a) This level of detail is not available during the EA process. Prior to commencement of construction, a Closure Plan will be submitted. This closure plan will further refine the approach to closure, including the use of overburden and organics. During the construction and early operations phase, soils from areas that need to be stripped will be stockpiled and the quantity / volume will be recorded in detail. Throughout the operations phase IAMGOLD will develop a more refined closure scenario that will ultimately describe which topsoil and overburden will be applied in location and for what types of revegetation.</p> <p>b) In response to this question it should be noted the EA report concludes that there will be no significant impacts on wildlife and wildlife habitat that support Aboriginal activities. However, once re-vegetation activities are completed, previously disturbed parts of the Project site are expected to progress to a more natural state over time. As per Section 5.16.2 of the EA, the primary objective of the closure phase is to rehabilitate the Project site area to as near, and productive of a natural state as possible.</p> <p>It should be noted that revegetation will be a key aspect of the rehabilitation measures. This will occur through seeding and hand-planting of seedlings of indigenous plant species, as appropriate, to initiate colonization of those plant species. Investigations may be carried out to determine if any enhancement to facilitate revegetation (e.g., fertilization) is required, and to evaluate the possibility of establishing specific wildlife habitats following closure.</p>	None.	n/a
485	CEA Agency	<p>FH1-1 EIS Appendix N, Section 2.4.2 page 6 ; Table 2.1, and page 19; Section 4, EIS Report Section 9, Description of Project Effects, subsection 9.9, page 9-49</p> <p>The assessment of effects on fisheries has been based on five fish species: northern pike, yellow perch, walleye, whitefish and smallmouth bass.</p> <p>Baseline information and the potential effects of the proposed project on all fish species and their habitat need to be assessed. This includes fish species and their habitat that are of importance to the health and socio-economic conditions, cultural heritage and the current use of resources for traditional purposes by Aboriginal peoples.</p> <p>If using a few fish species and their habitat as a surrogate for evaluating the effects on all fish and fish habitat that are part of or support a fishery, the fish chosen must be representative of all the fish species found in the study area, i.e. they represent the same habitat requirements, food requirements, life histories, etc.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on fish and fish habitat and/or impacts to Aboriginal peoples as a result of the project.</p> <p>In relation to information request FH1-1, see DFO-01 and DFO-02 in Annex 3.</p> <p>a) Provide a rationale for fish baseline survey methodologies, including how the chosen fish species are representative of all fish species and fish habitat in the study area. If those five species are not representative of all species and habitat, add other species for determining the baseline and effects assessment.</p>	<p>See Appendix N (Aquatic Biology TSD) for complete details on the methodology and rationale for the fish baseline data collection.</p> <p>The EA indicators identified and used for the aquatics effects prediction encompass the gamut of Project effects on the aquatic environment.</p>	None.	n/a

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486	CEA Agency	<p>FH1-2 EIS Report Section 9.9.2.1, page 9-53, EIS Report Section 10, Table 10-2 page 10-18 EIS Report Section 11, Table 11-6, EIS Appendix N Table 3.1</p> <p>Environmental effects from blasting in the open pit may affect fish habitat and spawning (such as for Burbot) in the adjacent Clam Lake (south basin) during construction and the early years of operation. The report indicates effects are determined to be likely limited to individuals and not result in a community or population level effect. All potential effects should be in the Impact Assessment Matrix, Table 11-6 and mitigation proposed, as applicable.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on fish and fish habitat as a result of the Project.</p> <p>In relation to information request FH1-2, see DFO-05 in Annex 3.</p> <p>a) Include all potential effects to fish and fish habitat in the Impact Assessment Matrix and identify mitigation, as applicable. This should include effects of blasting in the open pit on Burbot in Clam Lake and applicable mitigation.</p>	<p>a) Table 11-6 summarized the impact in the post-closure phase. No blasting is planned during this phase therefore the effects of blasting were not assessed within this table. When blasting does occur, effects for spawning have been predicted at 238.5 m from the pit during construction and at 349 m during operations. This overlaps Clam Lake in the south eastern portion of the lake (see Figure 4.1 from Appendix N; Aquatic Biology TSD). The dominant species found in this lake are smallmouth bass which typically spawn within the first meter of water over and around cobble, gravel and sandy bottoms. All the other species found within Clam will typically use the first two meters for spawning substrate. Of all the species found in Clam, only smallmouth bass, burbot and johnny darter use sandy, rock substrate for spawning. All other species spawning substrate are associated with the presence of vegetation. Minimal vegetation is present within the area affected by the blasting. The habitat present is largely cobble, rock, sand and silt substrate which is abundantly present in Clam Lake. During construction, the shoreline perimeter affected by the blasting will be approximately 240 m and 892 m during operations. The predominant area affected during operations falls in water depths greater than two meters of water, therefore it is anticipated that the area affected for spawning will be minimal when taking the entire area of the lake into consideration and the habitat present.</p>	None.	n/a

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487	CEA Agency	<p>FH1-3 EIS Appendix N, page 22 and Table 4.8; page 19 and Table 4.1, EIS Appendix I Section 1.1.7 Page 4</p> <p>It is not clear in the EIS if environmental effects are being fully mitigated by offsetting measures.</p> <p>When evaluating whether proposed offsetting measures, such as watercourse realignments, fully mitigate potential effects to fish and fish habitat, the lag time in the functioning of the offsetting measures should be factored in to the mitigation. This may require creation or enhancement of additional habitat.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on fish and fish habitat as a result of the Project.</p> <p>In relation to information request FH1-3, see DFO-06, DFO-07, and DFO-13 in Annex 3.</p> <p>a) Quantify the habitat loss to determine effects to fish and fish habitat as a result of the watercourse realignments and other proposed changes to existing waterbodies.</p> <p>b) Indicate whether the watercourse realignments to be decommissioned upon mine closure are those that are to be constructed with fish habitat features as part of mitigation. If habitat created as mitigation is to be destroyed or permanently altered upon mine closure, then include how this subsequent loss of fish habitat will be mitigated.</p> <p>c) Indicate whether there is a lag time in functioning of the offsetting measures and if it is incorporated into the mitigation. If not, discuss the duration of potential adverse environmental effects and how the significance of adverse effects to fish and fish habitat may be affected.</p>	<p>a) IAMGOLD is currently working with DFO to outline the analysis of how the in-kind habitat creation measures proposed will offset any serious harm to fish. As described in the policy entitled, Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting (the Policy), dated November 2013, if there is likely to be serious harm to fish after the application of avoidance and mitigation measures, then the proponent must develop a plan to offset the residual serious harm. The avoidance and mitigation of effects to the fishery has and will be an integral part of the design and engineering of the Project, but as noted, the Project is anticipated to permanently alter or destroy some existing fish habitat. The avoidance and mitigation of effects to the fishery will be addressed in two ways; first through reducing the number of fish harmed, and the duration and spatial extent of fish habitat being affected and second to develop and "in-kind" approach to offsetting that will be incorporated into the channel realignment plan, such that habitat that is destroyed or permanently altered is replaced by habitat of similar quantity and quality, with consideration of uncertainty and time lags. The approach will define a dimensionless habitat unit by multiplying the life stage-specific rating of habitat quality by the spatial area of the habitat type affected (e.g., m²). This will be calculated for all the habitat that will be lost as well as the habitat gained (created or enhanced) because of offsetting. These dimensionless units will be used to calculate the gain-to-loss ratio. A description of the methodology to be used in the assessment is provided in the Addendum to Appendix N (Aquatic Biology TSD).</p> <p>b) The watercourse realignments will be constructed to accommodate the development of the open pit and the TMF. The Mollie River will flow into Clam Lake which will flow north through the South Arm of Bagsverd Lake and then be redirected south into Weeduck Lake and on to Upper Three Duck Lake where it will resume its original watershed configuration (see Figure 1.2 of Appendix N; Aquatic Biology TSD). Furthermore, the outlet of Bagsverd Lake (Bagsverd Creek) will be realigned to the west of Bagsverd Lake where it will flow north around the TMF and enter Unnamed Lake #2 and rejoin the original Bagsverd Creek. The Mollie River (from Chester Lake to Clam Lake) and Bagsverd Creek realignment will remain in perpetuity. Once the pit is filled (anticipated to take approximately 50 yrs.) some of the realignments will be decommissioned as follows:</p> <ul style="list-style-type: none"> ▪ the Mollie River water realignments (Clam Lake to West Beaver Pond) will be removed; and ▪ south arm of Bagsverd Lake to Bagsverd Pond and Bagsverd Pond to Weeduck Lake and the watershed will be returned to its original configuration (see Figure 1.3 of the Aquatic Biology TSD). <p>All habitat altered or destroyed upon mine closure will be mitigated through the newly constructed or enhanced fish habitat provided by the pit lake and restoring the channels that will connect Clam Lake to the pit lake and the pit lake to Upper Three Duck Lake.</p> <p>c) It is proposed that the transplanting of vegetation, benthic invertebrates and forage fish be carried out to expedite the establishing of compensatory habitat. Minnow has previously implemented this approach at another site (Agrium Kapuskasing Phosphate Operations 2006) and results were quite effective (e.g., no loss in year class of any of the fish species relocated to the newly constructed lake). In areas where aquatic vegetation was transplanted, the coverage and expansion of colonization was much larger and quicker than in areas that were not transplanted providing cover for juvenile fish and decreasing erosion from construction and wind. Transplanting activities will be sequenced to allow for the best opportunity for the successful transfer of fish from lost areas to the newly constructed channels and therefore reduce lag times. Transplanting activities will likely include the transplantation of macrophytes (aquatic plants), benthic invertebrates, and the relocation of small-bodied fish (forage fish) and of large-bodied fish. The sequence of transfers will take into account spawning and incubation periods of the dominant species found within the systems to ensure successful transfer of young-of-the-year fish. The objectives of these transplants will be to accelerate the establishment of the ecosystem and food chain within the newly constructed areas prior to the placement of the key fish species, thus reducing lag times. Furthermore, the realignments will be constructed using natural channel design and will incorporate habitat structure to support successful utilization of the constructed habitats by resident fish. Therefore, it is expected that the lag time within the created habitat will be minimal. A description of the natural channel design and habitat structure to be incorporated into the channel realignments is provided in the response to Comment #475.</p>	None.	n/a

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488	CEA Agency	<p>FH1-4 EIS Appendix N pages 7,9, & 19 Potential waterbodies and fish habitat sites that could be rehabilitated, restored or created for possible habitat gains to offset losses from the project must be identified, with considerations made to fish relocation and fish loss.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on fish and fish habitat as a result of the Project.</p> <p>In relation to information request FH1-4, see DFO-08 in Annex 3.</p> <p>a) More information is required to assess the effects of the relocation and loss of fish. Include a justification for:</p> <ul style="list-style-type: none"> ▪ why it is anticipated that some fish will not be able to be relocated ▪ any specific species or size of fish that is expected to be difficult to capture or relocate ▪ the number of fish estimated to be lost ▪ the number of fish to be relocated ▪ effects of the fish relocations on existing fish populations in the waterbodies connected to the constructed habitats <p>b) Update the Impact Assessment Matrix accordingly to reflect these potential effects and identify mitigation as applicable.</p>	<p>a) Fish will be required to be relocated from habitats lost during the development of the mine (i.e., the construction of the open pit and the TMF). It is anticipated that fish will be relocated at ideal timing windows to minimize fish and egg stranding during the watercourse realignments. Timing of spawning for all fish found within the local study area indicated that the optimal window for all species will be late summer, early fall. By August all species young-of-the-year should be large enough to catch and transfer. Only golden shiner potentially spawn into August. Since their spawning window is quite large, it is not anticipated that the entire year class would be lost or that the species could not spawn in the new area they are transferred to. To concentrate fish, it is anticipated that a series of progressive water drawdowns will be conducted (taking into consideration ideal timing for fish removal) to catch and relocate fish from areas being lost to newly constructed habitat. A variety of fish gear will be employed to capture fish to ensure all sizes and species are caught. Fish will be relocated within the same watershed. As the fish being relocated will be moved to newly constructed areas, minimal effects on existing populations are anticipated. The only location where fish may be relocated to another water body is for Côté Lake. Fish from Côté Lake will likely be relocated to Upper Three Duck Lake. Côté Lake and Upper Three Duck Lake are currently only separated by culverts and fish can move freely between the two water bodies. As many fish as practically possible will be moved during the relocation, however it is anticipated that some fish will not be able to be relocated either through stranding during drawdowns or not being able to catch the fish. It is not possible to estimate the number of fish that will be lost in all areas. Minnow has previously conducted a complete fish removal at Agrium Kapuskasing Phosphate Operations, where the estimated population of northern pike was successfully relocated (population estimate [95% confidence limits] = 525 [232-1054] and 575 northern pike were relocated).</p>	None.	n/a

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489	CEA Agency	<p>FH1-5 EIS Appendix N page 23, page 10, Table 4.1, EIS Section 10 Table 10-2 page 10-19, EIS Appendix I Table 4.2, Table 4.3, Table 4.4 Table 4.5</p> <p>Reductions in flows to Bagsverd Creek are anticipated to begin during operations and remain in perpetuity. Fish habitat may be affected. It is proposed to survey the stream morphology prior to construction to assess the potential for exposure of habitat and barriers to fish passage. Then, if required, the mitigation proposed is to modify the stream bed to ensure an adequate depth of water for fish to utilize habitat and allow for fish passage.</p> <p>Without defining the effects, it is unknown whether the proposed mitigation will be effective and whether it will completely mitigate potential adverse effects to fish and fish habitat.</p> <p>Appendix N of the EIS indicates that predicted changes in water flow have been considered in the assessment of potential effects to fish habitat, however the only water flow changes assessed in Table 4.1 are the changes to Bagsverd Creek.</p> <p>Some watercourses will experience an increase in flows greater than 100% of the pre-development flow. These watercourses are not all identified as the constructed watercourse realignments. It is noted the constructed alignments will be designed for the expected flow, however the effects of increased flows to the existing watercourses (for example, Un-named Lake #2 Outflow) is not evaluated, and mitigation is not proposed.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on fish and fish habitat as a result of the Project.</p> <p>In relation to information request FH1-5, see DFO-10 and DFO-14 in Annex 3.</p> <p>a) Explain the effects to Bagsverd Creek as well as downstream effects (for example what will be the effects to Neville Lake).</p> <p>b) Evaluate the effects to fish and fish habitat arising from increased flows from mine activities, including effects related to increased erosion and sedimentation, high flows as a barrier to fish migration, and direct changes to habitat.</p> <p>c) Update the Impact Assessment Matrix accordingly to reflect these potential effects to fish and fish habitat and identify mitigation measures as applicable.</p> <p>d) Provide an analysis of the feasibility of the proposed mitigation, indicating the extent to which mitigation will offset the effects.</p>	<p>Additional investigations were completed in 2014 to address concerns with respect to potential changes in water levels within Bagsverd Creek. The outcome of these investigations and the response to Comment #489 a, b, and c, are provided in the Addendum to Appendix N (Aquatic Biology TSD).</p>	<p>Additional information on changes to water levels within Bagsverd Creek has been added to the Addendum to Appendix N (Aquatic Biology TSD).</p>	<p>Addendum to Appendix N (Aquatic Biology TSD)</p>
490	CEA Agency	<p>FH1-6 EIS Appendix N Table 4.1</p> <p>Effects have been considered post-mitigation in Appendix N, Table 4.1. However, all potential effects to fish and fish habitat, pre-mitigation, are unclear. For example, the impact of whole-lake destruction is not clear, including, for instance, but not limited to the use of the lake by Aboriginal people. The habitat offsets by building habitat into the watercourse diversions/realignments is a mitigation measure. Pre-mitigation there is the loss of either whole or parts of waterbodies and watercourses. The effects of the project need to be clearly stated, and then the mitigation applied.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on fish and fish habitat as a result of the Project.</p> <p>a) Include all potential effects to fish and fish habitat (i.e. death of fish or destruction or permanent alteration of fish habitat), and evaluate them pre-mitigation.</p> <p>b) Update the Impact Assessment Matrix accordingly to reflect these potential effects to fish and fish habitat and identify mitigation measures.</p>	<p>a) The methodology for the EA considers only effects including mitigation as mitigation is in many instances inherent to the proposed design.</p> <p>b) No update necessary.</p>	<p>None.</p>	<p>n/a</p>

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491	CEA Agency	<p>FH1-7 EIS Appendix N Section 5, EIS Section 16, Table 16-1, Table 16-2 Effects of blasting and reduced flows to watercourses, (particularly, but not limited to Bagsverd Creek) should be described in the monitoring outlined in Section 5 of Appendix N. Monitoring of blasting should confirm the EA predictions regarding the setbacks as well as monitor for effects to fish and fish habitat. It is not clear if this is covered in EIS Section 16, Table 16-1 under Noise and Vibration on page 16-6. Flow monitoring should also confirm the EA predictions as this will be important in determining the effects to fish and fish habitat in watercourses such as Bagsverd Creek that may require offsetting. It appears this is covered in EIS Section 16, Table 16-1 under Hydrology and Climate on pages 16-8 and 16-9. EIS Section 16, Table 16-2 does not include monitoring of the functioning of habitats created to offset potential effects to fish and fish habitat. This monitoring is mentioned within Appendix N but should also be included in the Aquatic Biology section of Table 16-2. Monitoring should also consider potential changes to fish population dynamics as a result of the project activities. The response to this information request will assist the Agency in determining potential environmental effects on fish and fish habitat as a result of the project. a) Provide information on effects of blasting and reduced flows to watercourses in the monitoring plan. Provide details of how changes to fish population dynamics as a result of project activities will be monitored.</p>	<p>a) Please see the response to Comment #486 for effects of blasting. Since the effects of blasting are expected to be minimal, no monitoring was proposed. The area affected will be included in the habitat loss for the <i>Fisheries Act</i> Authorization. Furthermore, it has been proposed that fish health monitoring should be conducted every three years in accordance with EEM guidance and that the newly created habitat be monitored to ensure it is functioning as designed. These programs will assess endpoints for population dynamics (e.g., catch-per-unit-effort, growth and reproduction endpoints).</p>	None.	n/a

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492	CEA Agency	<p>FH1-8 EIS Report, Section 6.4.8.2, page 6-92 to 6-113; Section 6.4.8.3, page 6-113 to 6-114; Appendix N. Section 2.4.2; Section 3.0</p> <p>In the EIS, baseline metal levels, particularly mercury and methyl mercury, in fish is not discussed. Methyl mercury is more toxic than total mercury. Furthermore, in Appendix N, baseline information on methyl mercury levels in fish is not described in sufficient detail to determine potential effects and residual effects and draw conclusions about bioaccumulation as a function of fish weight or length and chemical consumption limits.</p> <p>In addition, reference areas for fish and benthic invertebrate species studies were not found. For example, it is not clear if a reference area (i.e. area without mercury exposure) was used when studying mercury in fish tissue. No information on the total mercury in fish tissue in a reference area was found. This information is necessary for results and conclusions to be meaningful.</p> <p>In order to evaluate any changes in methyl mercury concentrations in fish, methyl mercury should be monitored as part of a fish monitoring program that captures the peak and subsequent decline in methyl mercury over time.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on fish and fish habitat as a result of the Project.</p> <p>a) Provide a discussion on baseline information on metal levels in fish, particularly mercury, and provide an assessment of potential effects on fish related to changes in metal levels as a result of the project.</p> <p>b) Provide a description of fish tissue results, particularly in regards to mercury and methyl mercury, and how these results relate to fish consumption limits.</p> <p>c) Provide information on the mercury levels in fish for the reference area. Effects on fish usability should be evaluated by measuring concentrations of mercury from fish in the exposure and reference areas.</p> <p>d) Provide a fish monitoring program that includes methyl mercury.</p>	<p>It is true that methyl mercury represents the biologically available form of mercury accumulated by fish in their tissue. Therefore, the total mercury concentrations measured in fish tissue represent methyl mercury (Grieb et al. 1990) and it does not need to be analyzed as methyl mercury. Total mercury (representing methyl mercury) has been analyzed in forage and sport fish from most water bodies within the study area.</p> <p>a) The fish tissue baseline concentrations were provided (see Appendix N; Aquatic Biology TSD, Appendix C, Appendix F) and assessed in Appendix W (HEHRA).</p> <p>b) Fish consumption benchmarks were developed for metals analyzed in fish tissues. These benchmarks were compared to the tissue concentrations of fish collected during the 2012 and 2013 aquatic baseline studies (see Tables F.46 and F.47 in the Addendum to Appendix N which represent additional tables to Appendix F of the Aquatic Baseline Report found in Appendix N of the EA document). Comparison to benchmarks found that mercury tissue (muscle) concentrations in northern pike and/or walleye were above consumption benchmarks for the general population in almost all lakes sampled within the local study area (Table F.47). Mercury was above the consumption guideline for sensitive populations (woman of child bearing years and children under 15) for these species as well as for small-mouth bass where they were sampled. Yellow perch was below the consumption guidelines for mercury but this is likely a function of the small size of the fish collected (typically juveniles). Arsenic was above the consumption benchmark based on a carcinogenic threshold in all fish collected from all areas but below a more general consumption benchmark based on USEPA data (Tables F.46 and F.47). The tissue concentrations of all other metals were less than the consumption benchmarks. Fish tissue concentrations were also screened against the CCME wildlife benchmark of 0.033 ug/g (CCME 2000) and are provided in Table F.47 in the Aquatic Biology Addendum.</p> <p>c) All the fish tissue concentrations collected in 2012 and 2013 were baseline, prior to any areas being affected by the mine and therefore, can all be considered reference areas. Future monitoring after mine construction and during operations, fish tissue metal concentrations will be evaluated in a control-impact design where areas have been affected by flooding (due to realignments) will be compared to reference and baseline.</p> <p>d) Fish tissue monitoring for mercury has been proposed (see Section 5 of the revised Aquatic Biology TSD). It should be conducted in all lakes where water levels are going to increase as a result of watercourse realignments.</p> <p>A table has been added to Appendix N (Aquatic Biology TSD), Appendix C, Appendix F such that Table F.46 shows the consumption benchmarks used to evaluate fish tissue and the rationale / reference and Table F.47 provide the fish tissue concentration for each fish sampled together with the fish species and size (total length) of the specimen sampled compared to the benchmark (see Addendum to Appendix N).</p>	<p>An addendum to Appendix N (Aquatic Biology TSD) has been included with the EA to provide additional information described in the response.</p>	<p>Addendum to Appendix N</p>

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493	CEA Agency	<p>MB1-1</p> <p>Appendix G – Noise and Vibration Technical Support Document, Appendix L – Wildlife</p> <p>Appendix G (Noise and Vibration Technical Support Document) presents an analysis of construction (Fig. 7, Fig. 8) and operational noise (Fig. 12, Fig. 13, Fig. 14, Fig. 15), which focuses primarily on receptors that are a considerable distance from the mine footprint.</p> <p>As noted on Environment Canada’s ‘Incidental Take’ website (http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=8D910CAC-1#_01), migratory birds are typically adversely affected (disturbed) by sound levels exceeding 50 dBA.</p> <p>The EIS indicates that migratory birds/waterfowl could experience adverse effects due to noise levels (lowering reproductive success and predator detection); however predictions of the effects of increased noise levels have been made in the absence of a noise analysis to inform the effects predictions. For instance, Appendix L (Wildlife) states that, “upland migratory bird populations in the RSA are likely to have adapted to human-related sensory disturbance because human activities including forestry and mineral exploration have been carried out in the RSA since 1800. Also, changes in habitat quality from sensory disturbance do not necessarily result in demographic consequences to populations (Gill et al. 2001). Most of the effects from indirect changes in habitat quality may be related to a local shift in distribution with little influence on survival and reproduction rates.” (Appendix L – Wildlife, page 52).</p> <p>Statements such as this should be substantiated by the calculation of areas of disturbance within the various habitat types within the greater than 50dBA zone, as well as the number of birds potentially affected by noise. The sound modelling has already been produced in the Appendix G -Noise and Vibration document, therefore it is possible to produce mapping of the 50dBA isopleth overlaid with the already mapped habitat types using GIS methods and calculate the disturbance areas.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on Species at Risk and migratory birds as a result of the Project.</p> <p>a) Provide a noise analysis, based on a 50 dBA threshold for determining the effect of the Project on local bird populations in the area.</p> <p>b) Provide a map which shows the area surrounding operations affected by 50 dBA or greater, overlaid on habitat types, as well as a table summarizing areas within this threshold by habitat type. In addition to an estimate of how many birds (by species) will be displaced by vegetation clearing within the mine footprint (as was provided for the proposed Transmission Line Alignments), provide an estimate of how many birds will be disturbed in the area which lies outside of this cleared footprint area and is within the area affected by 50 dBA or greater. For ease of reference, it is recommended that this disturbance estimate be based on mapping of the 50 dBA noise isopleth, and that the mapping be provided at a relatively large scale, for example, the figures cited above are at too small a scale to be sufficiently reviewed.</p>	<p>All noise that is greater than or equal to 50 dBA is predicted to be contained with the terrestrial biology local study area. As such, most of the effects from indirect changes in habitat quality may be related to a local shift in distribution with little influence on survival and reproduction rates. The predicted 50 dBA noise contour covers approximately 24 km² (2,422 ha). The most common habitat within the predicted 50 dBA noise contour is dense mixed forest, which covers 1,194 ha (49.3%) of the 50 dBA noise contour area. The next common habitat in the noise contour area is dense coniferous forest (540 ha; 22.3%). Sparse forest covers 141 ha (5.8%) of the 50 dBA noise contour area and forest depletion – cuts covers 204 ha (8.4%). Treed bog and dense deciduous forest cover 64 ha (2.6%) and 45 ha (1.9%) of the 50 dBA noise contour, respectively. Jack pine regeneration / cuts habitat is not present in the noise contour area. Open water covers 235 ha (9.7%) of the noise contour area.</p> <p>Relative abundance of bird species (birds per hectare) was calculated for each land cover type using data collected during baseline surveys in 2013 (Table 1; Section 5.5 in the Terrestrial Baseline Report). Density estimates could not be calculated for open bog, treed bog, or forest depletion – cuts habitats. Open bog and treed bog habitats are similar to wetland habitat and were assigned the density estimates for wetland habitat (2.13 birds/ha; Table 1). Forest depletion –cuts habitat may have similar habitat attributes as sparse forest. For this analysis, forest depletion – cuts habitat was assigned the density estimate value that was calculated for sparse forest (3.05 birds/ha; Table 1).</p> <table border="1"> <thead> <tr> <th>Land Cover Type</th> <th>Number of Plots Surveyed</th> <th>Relative Abundance^(a) (Mean ± 1SE)</th> </tr> </thead> <tbody> <tr> <td>Dense Coniferous Forest</td> <td>25</td> <td>3.58 ± 0.19</td> </tr> <tr> <td>Jack Pine Regeneration/Cut</td> <td>14</td> <td>3.98 ± 0.43</td> </tr> <tr> <td>Deciduous Forest</td> <td>6</td> <td>3.67 ± 0.88</td> </tr> <tr> <td>Dense Mixed Forest</td> <td>36</td> <td>3.36 ± 0.25</td> </tr> <tr> <td>Sparse Forest</td> <td>7</td> <td>3.05 ± 0.83</td> </tr> <tr> <td>Wetland</td> <td>10</td> <td>2.13 ± 0.26</td> </tr> </tbody> </table> <p>Notes: Abundance = the number of birds per ha SE = standard error</p> <p>Using the habitat areas within the 50 dBA noise contour and upland breeding bird density estimates presented above, noise from the Project is predicted to adversely affect a total of 7,298 migratory upland breeding birds. Approximately 4,011 birds are expected to be lost from the removal of dense mixed forest in the 50 dBA noise contour area, while 1,933 birds are expected to be lost from the removal of dense coniferous forest habitat. The removal of sparse forest is predicted to result in the loss of 429 birds, while 622 birds may be lost from the removal of forest depletion – cuts habitat. The removal of treed bog and dense deciduous forest may result in the loss of 137 and 166 birds, respectively.</p> <p>The total number of birds that may be adversely affected by noise greater than or equal to 50 dBA is approximately 0.7% of the total predicted number of birds in the regional study area (based on the ecological land classification and bird densities presented in Table 1). The relatively small number of birds that may be adversely affected by noise greater than or equal to 50 dBA is not expected to result in significant residual effects to upland breeding bird populations.</p> <p>The overall density of waterbirds in the regional study area was not calculated but few species were observed during baseline surveys in 2013 (Section 5.7 in the Terrestrial Baseline Report). Noise greater than or equal to 50 dBA is predicted to adversely affect 235 ha of open water habitat. This is 0.6% of open water habitat that is present in the regional study area. Residual effects are not predicted to have a significant residual effect on waterbirds because of the relatively small area to be disturbed by noise greater than or equal to 50 dBA.</p>	Land Cover Type	Number of Plots Surveyed	Relative Abundance ^(a) (Mean ± 1SE)	Dense Coniferous Forest	25	3.58 ± 0.19	Jack Pine Regeneration/Cut	14	3.98 ± 0.43	Deciduous Forest	6	3.67 ± 0.88	Dense Mixed Forest	36	3.36 ± 0.25	Sparse Forest	7	3.05 ± 0.83	Wetland	10	2.13 ± 0.26	None.	n/a
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494	CEA Agency	<p>MB1-2</p> <p>Appendix L – Technical Support Document: Wildlife, Attachment 1 – Terrestrial Baseline Report Section 4.4 - Breeding Bird Point Count Surveys</p> <p>The Environment Canada document entitled, “EC Guidance on Baseline and Post-construction Surveys for Migratory Birds” became available to some mine proponents in June, 2011, and it seems these protocols were largely followed for the work presented in the EIS. For example, point count stations were placed at least 250 m apart, and 10-minute point counts were used (EIS, Sec. 6.4.3.1, p. 6-49, para. 8; Wildlife TSD Sec. 4.4, p. 13, para 4 and 5). However, it is unclear whether or not Environment Canada’s 3-5-10 minute protocol was used when conducting the 10- minute point counts. This involves recording all birds seen or heard in the first 3 minutes, and separating all birds seen or heard for the first time in the next 2 minutes, and then in the final 5 minutes (i.e., so each bird is recorded only once). It is most important that a 10-minute point count was used, but breaking up the point count period in this manner makes the data more comparable to other point count data sets in order to determine the environmental effect on local bird populations. According to the EIS guidelines, the results of any baseline surveys and a description of the methodology are to be included in the EIS. If additional avian baseline data is collected, it is recommended that the point counts be conducted using the aforementioned protocol in order to meet Environment Canada’s guidance requirements.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on Species at Risk and migratory birds as a result of the Project.</p> <p>a) Identify if Environment Canada’s 3-5-10 minute protocol was used when conducting the 10 minute point counts and if another protocol was used. If another protocol was used, provide details on this protocol and provide a rationale for why IAMGOLD believes the protocol used is adequate to assess the effects to migratory birds. If additional avian baseline data is collected, it is recommended that the point counts be conducted using Environment Canada’s 3-5-10 minute protocol.</p>	<p>Environment Canada’s 3-5-10 minute protocol was used during the 2012 and 2013 point count surveys of the mine site. Data from the surveys completed in 2012 and 2013 were combined to create a larger dataset for the analysis. Two levels of analysis were completed on the dataset. A species-level analysis examined the relative abundance (i.e., density) of individual species within each land cover type, and a community-level analysis examined the density and richness of all species in the bird community. For the assessment, maximum density estimates were used so that effects would not be underestimated, but if necessary, the data are available for future monitoring requirements.</p> <p>Environment Canada’s 3-5-10 minute protocol was also used during 2013 point count surveys of the transmission line. Field data sheets displaying this protocol can be found in Appendix M (Transmissio Line TSD), Appendix VIII. Data was not analyzed for each of the three time frames because this information has no bearing of the effects assessment and this was not explicitly detailed in the methodology description provided the EA (Section 6.4.3.1) and in Appendix L (Wildlife TSD; Section 4.4).</p>	None.	n/a

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495	CEA Agency	<p>MB1-3</p> <p>Appendix Y – EA Commitments Table, Appendix M – Terrestrial Biology for Transmission Line Alternatives Technical Support Document</p> <p>Common Nighthawk is known to occur in the vicinity of the mine, and because this species is attracted to areas featuring exposed mineral soil and bedrock outcrops that exist naturally or from recent disturbances resulting in cleared habitat (forest fires, forest harvest, road construction or mine site construction), there exists the potential that more nighthawks may be found to occur in the LSA once mine construction commences, and for the years when the mine is operational. One aspect of nighthawk behaviour that should be considered is nightly resting on patches of mineral soil (e.g., gravel roads). If this does happen on the mine site or along sections of mine access/haul roads with nightly vehicle traffic, then there will be potential effects to birds (i.e. road kill).</p> <p>It is not clear in the EIS if the effects to birds will be fully mitigated during the operation of the transmission line as the EIS states that IAMGOLD proposes to, “implement marker balls, bird diverters, or other strategies to reduce the likelihood of bird collisions with power lines in high-risk location such as near wetlands or other areas of topography.” (Terrestrial Biology for Transmission Line Alternatives TSD, App M, Sec. 3.2.7, p. 3-51, para. 4, bullet 2; App M, Sec. 4.2.7, p. 4-53, para. 1, bullet 2). Specific high-risk locations are not identified on a map and a rationale for where this mitigation will be implemented is not provided.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on Species at Risk and migratory birds as a result of the Project.</p> <p>a) Identify high-risk power line collision locations on a map where mitigation will be implemented accompanied with a rationale for their selection.</p> <p>b) If resting birds, such as the Common Nighthawk, are identified in the local or regional study area, provide mitigation as appropriate.</p> <p>c) There was no information on follow-up and monitoring for migratory birds, specifically Common Nighthawk. Provide a conceptual description of the follow-up and monitoring plans for migratory birds, including Common Nighthawk.</p>	<p>a) No Common Nighthawk were found within the Project footprint or the local study area. A total of four Common Nighthawk observations were recorded within the regional study area during baseline crepuscular breeding bird surveys. In the case of the transmission line regional study area, only a single nighthawk was recorded. Although this species occurs in the region, the dense forest habitat present along much of the length of the transmission line may prevent this species from existing locally at moderate to high densities. Therefore high-risk collision locations have not been identified.</p> <p>b) Mitigation measures have been added in the event that Common Nighthawk are observed within the local study area.</p> <p>c) Follow-up monitoring for this species will be initiated as part of the wildlife monitoring plan within the Project footprint. Wildlife reporting programs and enforcement of speed limits on Project roadways will serve to prevent nighthawk collisions with vehicles within the Project footprint. In the event that higher numbers of Common Nighthawks occur around the mine throughout its lifetime, adaptive mitigation will be implemented to prevent harm to this species or its nesting habitat.</p>	<p>The following mitigation measures have been added to the Executive Summary, Chapters 10 and 11, and Appendix Y:</p> <p>"Include Common Nighthawk and Bank Swallow identification as part of site induction to improve success of wildlife reporting programs.</p> <p>Contact the MNR and Environment Canada within 24 hours if Common Nighthawk or Bank Swallow are recorded nesting on site."</p>	<p>Tables ES-3, ES-4, ES-5, 10-2, 11-3, 11-4, and 11-5, Appendix Y</p>

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496	CEA Agency	<p>MB1-4 EIS Report, Section 9.7.2; Section 10, Table 10-2; Section 11, Table 11-3</p> <p>In the EIS, Species at Risk (SAR) are identified in the project area, however some species are reported to be found in the LSA whereas others in the RSA. A consistent approach that identifies SAR species in both the LSA and RSA is important for providing context and for determining effects. Furthermore, when removal of habitat is described as a percentage of suitable habitat, it is unclear at times if this is in reference to the LSA or RSA and how many hectares of habitat is removed in these areas. this actually accounts for.</p> <p>In Section 9.7.2, the environmental effects on SAR species are described, with the exclusion of the snapping turtle and the monarch. This section identifies that the Project will result in the removal of suitable habitat. General mitigation measures for wildlife and wildlife habitat is presented in Section 10, Table 10-2 of the EIS, however, it is unclear how the potential effects to individual SAR species will be mitigated. Furthermore, in Section 11, Table 11-3 of the EIS, residual effects and monitoring are unclear. For example, in Chapter 9 of the EIS, it is mentioned throughout that, "effects from habitat loss and fragmentation are expected to be partially reversible with duration of greater than 15 years after project closure". However Table 11-3 determines the residual effects to wildlife as a result of the Project to be not significant and not likely. This seems contradictory. It is unclear what the residual effects will be after closure and how these residual effects will be monitored.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects on Species at Risk and migratory birds as a result of the Project.</p> <p>a) Identify all SAR species listed under the <i>Species at Risk Act</i> known to date in the LSA and RSA that may be affected by the Project and provide baseline information for each SAR species in the LSA and RSA.</p> <p>b) Predict environmental effects for each SAR species and migratory birds as a result of changes to the environment from project activities and identify mitigation measures as appropriate. Note that EIS guidelines require that where mitigation measures have been identified in relation to species and/or critical habitat listed under the <i>Species at Risk Act</i>, the mitigation measures will be consistent with any applicable recovery strategy and action plan.</p> <p>c) Provide information on residual effects for each SAR species and migratory birds in consideration of the proposed mitigation measures.</p> <p>d) For each SAR species and migratory birds, clearly draw conclusions based on the baseline, predicted effects, mitigation, and residual effects, and identify appropriate follow-up and monitoring plans.</p>	<p>a) Descriptions of SAR with respect to their <i>Endangered Species Act</i> and SARA listing status and their occurrence within either the local study area or regional study area are presented in the Project's baseline reports, TSDs and the EA. A table that lists SAR that have the potential to occur in the regional study area (and therefore the local study area), and information on species occurrence during baseline surveys, is provided in Appendix D of the Terrestrial Baseline Report. Species that are listed by SARA that have potential to occur in the regional study area (and local study area) are: Canada warbler, chimney swift, common nighthawk, olive-sided flycatcher, peregrine falcon, rusty blackbird, short-eared owl, whip-poor-will, eastern wolf, Blanding's turtle, snapping turtle, and monarch. Of these species, Canada warbler, common nighthawk, olive-sided flycatcher, rusty blackbird, and whip-poor-will were considered to have a high potential for occurrence in the regional study area, and all of these species were observed during field surveys within the regional study area (Appendix L Wildlife TSD; Attachment I Terrestrial Baseline Report).</p> <p>b and c) Conclusions for each SAR and for migratory birds with regards to predicted effects, mitigation, and residual effects is outlined in various sections of the EA, described below. Effects to eastern wolf are discussed in Section 3.1.2.1 of Appendix L (Wildlife TSD). Effects to common nighthawk and whip-poor-will (nightjars), Canada warbler, olive-sided flycatcher, and rusty blackbird are discussed in Section 3.1.3.1 of Appendix L. Effects to peregrine falcon and short-eared owl are discussed in Section 3.1.3.3 of Appendix L. Preferred habitat for Blanding's turtle is shallow water with an organic substrate and high density of aquatic vegetation (COSEWIC 2005); this is similar to the definition of preferred habitat used in the EA. As such, effects to Blanding's turtle are anticipated to be similar to those assessed for waterbirds (Section 3.1.3.2 in Appendix L). Effects to snapping turtle were not assessed because there are no historical reported observations of this species in the regional study area (Natural Heritage Information Centre 2013). There was no native grassland identified by the ecological land classification in the regional study area and associated local study area. As such, monarch butterfly is expected to have a low potential for occurrence in the regional study area and Project-related changes to habitat loss, alteration and fragmentation to monarch butterflies are anticipated to be not measurable at the population level.</p> <p>Recovery strategies are not currently available for Canada warbler, chimney swift, common nighthawk, olive-sided flycatcher, peregrine falcon, rusty blackbird, short-eared owl, whip-poor-will, eastern wolf, Blanding's turtle, snapping turtle, or monarch. Recovery strategies are currently in preparation for common nighthawk, olive-sided flycatcher, and Canada warbler (Wayland 2014). Therefore, there is currently no critical habitat identified for SAR that have a high potential for occurrence in the regional study area that would need to be protected from disturbance.</p> <p>d) The following information is found in the EA and presents a summary of the effects assessment for SAR, and mitigation and monitoring plans.</p> <p>The regional study area is predicted to contain approximately 54.3% (205,874 ha) potential suitable habitat for eastern wolf, under reference conditions (Section 3.1.2.1). Previous and existing developments have removed 10.3% (21,270 ha) of potential wolf habitat in the regional study area relative to reference conditions. The Project is predicted to remove 0.6% (124 ha) of potential wolf habitat.</p> <p>Response continues on next page.</p>	None.	n/a

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496 cont	See previous page.	See previous page.	<p>There was predicted to be from 4.1% to 6.6% (15,579 to 25,128 ha) potential suitable habitat for nightjars, olive-sided flycatcher, and rusty blackbird, in the regional study area under reference conditions (Section 3.1.3.1 of Appendix L). In the regional study area, suitable habitat for these Federally listed bird species has decreased by 2.7% to 9.7% (670 to 2,119 ha) from reference to 2012 baseline conditions. The Project is predicted to remove from 0.5% to 1.5% (4 to 23 ha) of potential suitable habitat in the regional study area for nightjars, olive-sided flycatcher, and rusty blackbird. The regional study area consisted of 82.1% (310,988 ha) potential suitable Canada warbler habitat under the reference condition (Section 3.1.3.1 of Appendix L). Previous and existing developments have removed approximately 10.7% (33,128 ha) of potential suitable Canada warbler habitat in the regional study area. The Project is predicted to remove 0.4% (143 ha) of potential suitable Canada warbler habitat. Forestry is expected to have a larger influence on common nighthawk, whip-poor-will, Canada warbler, olive-sided flycatcher, and rusty blackbird populations in the regional study area than other human developments including the Project. Non-forestry related human activities have disturbed about 2.1% of the regional study area since reference conditions, while recent harvested areas (less than 18 years old) currently cover 7.4% of the regional study area. The Project, forestry operations and other developments in the regional study area are anticipated to have no to little measurable effect (olive-sided flycatcher) or measurable effects that are within the adaptive capability and predicted resilience limits (Canada warbler, rusty blackbird, nightjars) on the abundance and distribution of listed upland breeding bird species' populations. Recent harvested areas may have a positive influence on olive-sided flycatchers and provide suitable habitat for nightjars. Although harvesting operations have primarily removed dense mixed and dense coniferous forest habitat, these are the most common habitat types in the regional study area and effects to species that rely on these habitats are anticipated to be negligible.</p> <p>Potential breeding habitat for waterbirds (and Blanding's turtle) is predicted to have covered approximately 8.2% (31,043 ha) of the regional study area under reference conditions (Section 3.1.3.2 in Appendix L). Previous and existing developments have removed 4.1% (1,273 ha) of potential waterbird (and Blanding's turtle) habitat in the regional study area, relative to reference conditions. The Project is predicted to remove 0.7% (9 ha) of potential waterbird (and Blanding's turtle) habitat. Previous and existing developments and the Project are predicted to decrease the amount of waterbird (and Blanding's turtle) habitat in the regional study area by 4.8% relative to reference conditions.</p> <p>Habitat features, such as cliffs, are preferred by peregrine falcon for nesting (COSEWIC 2007) but these topographic features are uncommon in the local study area. Peregrine falcons may occasionally nest in abandoned tree nests (COSEWIC 2007) and so potential peregrine falcon habitat is considered to be tree-nesting raptor habitat (Section 3.1.3.3 in Appendix L). Short-eared owls typically nest in open areas such as open bog habitat (potential suitable short-eared owl habitat) (Wiggins et al. 2006). The reference regional study area is predicted to have contained approximately 84.3% (319,484 ha) potential suitable tree-nesting raptor (peregrine falcon) habitat and 0.2% (908 ha) potential suitable short-eared owl habitat. Previous and existing developments have removed 10.7% (34,043 ha) of potential peregrine falcon habitat in the regional study area, relative to reference conditions. Approximately 18.7% (170 ha) of potential short-eared owl habitat in the regional study area has been removed by previous and existing developments. The Project is predicted to remove 0.4% (147 ha) of potential peregrine falcon habitat. The Project is not predicted to remove any potential short-eared owl habitat.</p> <p>Monitoring that is related to SAR includes the following: Site surveillance monitoring to identify the species, number, and location of incidents with wildlife SAR, and risks to wildlife SAR. SAR that are involved in mine incidents will be recorded and reported to the MNRF and adaptive management will be used to limit further incidents with SAR.</p> <p>Response continues on next page.</p>	See previous page.	See previous page.

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496 cont	See previous page.	See previous page.	<p>Effects to wildlife from habitat loss associated with the Project are expected to be partially reversible at the end of the construction phase (two years). Residual effects were deemed to be 'likely' to occur because changes in habitat quality from sensory disturbance do not necessarily result in demographic consequences to populations (Gill et al. 2001). Also, habitat loss and fragmentation in the regional study area is below the thresholds (e.g., 40% habitat loss) identified for highly mobile species (such as most birds) (With and Crist 1995; Flather and Bevers 2002; Swift and Hannon 2010). Effects were assessed as non-significant because effects are anticipated to influence a few individuals in the population but effects are not anticipated to be measurable at the population level. That is, a few animals may be displaced or removed from the population due to habitat loss and sensory disturbance (e.g. noise, smells, dust) from the Project, but these effects are not anticipated to cause a measurable reduction in breeding and survival rates on the population as a whole.</p> <p>Mitigation to limit residual effects on SAR includes the following:</p> <ul style="list-style-type: none"> ▪ if an active nest is found in areas to be disturbed, all disruptive activities will be halted until nesting is completed; ▪ a buffer zone that is appropriate for the species and the surrounding habitat will be instituted around active nests and this buffer zone will remain in place until the young have naturally left the vicinity of the nest; ▪ construction activities will be completed outside of the core nesting period as much as practical; and ▪ if construction activities cannot be completed outside of the core nesting period nonintrusive monitoring methods will be used to determine the presence of nests in the areas to be disturbed. 	See previous page.	See previous page.

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497	CEA Agency	<p>AP1-1</p> <p>Executive Summary, pg 36; EIS Report, Section 9.16.3, pg 9-85; Appendix O, Land and Resource Use, Section 3.1.6, pg 3-16, Section 3.1.8, pg 3-20, Section 3.2.6, pg 3-24, Section 3.2.8, pg 3-25; Section 4.3.2.8, pg 4-23; Appendix P, Traditional Land and Resource Use</p> <p>In the EIS it is unclear whether works involving dewatering, depositing, and/or infilling will occur in any waterways subject to NPA and if these works will result in potential environmental effects or impact navigation by Aboriginal peoples (including in the event that the IAMGOLD chooses to "opt-in"). Information about dewatering, depositing, and infilling of waterways will assist in predicting potential environmental effects, as well as predicting impacts on Aboriginal peoples and other users about their rights such as the potential loss or restriction of rights to access navigable water as a result of the project.</p> <p>The following comment applies for infilling/throwing/dewatering works and those works requested to be opted-in: Section 9.1.3 of the EIS Guidelines requires that the "in describing how the project may impede navigation, the EIS will identify any project components and a description of any activities (e.g., dredging, alteration of water bed and/or water banks, loss/realignment of waterbodies) that may affect waterways and water bodies and limit or access to those waterbodies (e.g. roads, trails, portage routes); describe any recreational uses of natural waters (i.e. swimming, canoeing, fishing); and provide information on current and/or historic usage of all waterways and waterbodies that will be directly affected by the project, including current Aboriginal uses, where available".</p> <p>The response to this information request will assist the Agency in determining potential environmental effects and/or impacts to Aboriginal peoples as a result of the project.</p> <p>Specific information will be required to determine navigability of each waterway affected (see http://www.tc.gc.ca/eng/programs-622.html) and construction methodology for dewatering/infilling activities.</p> <p>a) If any waterways are deemed to be navigable, provide information on environmental effects of the works as well as impacts to Aboriginal peoples and their rights and other users as a result of the works, such as impacts of the loss to navigation (including socio-economic effects).</p> <p>b) Provide information of current and/or historic usage of all waterways and waterbodies that may be directly affected by the project, including current Aboriginal and other users.</p> <p>c) Discuss whether these considerations change the conclusions in regards to any indicators (valued components) in the EIS.</p>	<p>a) Effects on users of the waters surrounding the Project site are described in Sections 9.10 and 9.11. It should be noted that IAMGOLD is committed on keeping the 4M Canoe Route functional and available to the public and Aboriginals throughout all phases of the Project. Environmental effects of the works in watercourses are described in detail in Appendix I (Hydrology TSD), Appendix J (Water Quality TSD), and Appendix N (Aquatic Biology TSD) and are summarized in Chapter 9 of the EA. As per Table 10-3, in consultation with users, IAMGOLD will establish a suitable portage / connection such that the portage route will still be usable or that an alternative route be developed. All of the effects described above are assessed for their significance in Chapter 11 of the EA. In summary, Chapter 11 concludes that there will be no significant impacts on users of the waters surrounding the Project site.</p> <p>IAMGOLD is currently planning to use the opt-in process provided by Transport Canada. Additional information will be provided through this process.</p> <p>b) Information on current use of the waterways and waterbodies surrounding the Project site is provided in Appendix O (Land and Resource Use TSD). Traditional uses of these waterways and waterbodies are described in Appendix P (Traditional Land Use TSD).</p> <p>c) As discussed in items a and b above, effects on waterways and waterbodies are fully considered and their impacts assessed throughout the EA report. Therefore, these considerations do not change the conclusions in regards to any EA indicators.</p>	None.	n/a

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498	CEA Agency	<p>AP1-2 EIS Report, Section 6.5.1.1, p. 6-115, 2nd paragraph; Section 6.5.1.2, p.6-119</p> <p>In Section 6.5.1.1 of the EIS Report it is stated that, "requests for detailed information from the Ministry of Natural Resources (MNR) on bear hunting (licensed outfitters and harvest data), trapping (trapline holders and harvest data), and outfitters have been made and this information is outstanding." This information must be provided to access potential effects of the Project on hunting, trapping and outfitting by Aboriginal peoples.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects and/or impacts to Aboriginal peoples as a result of the Project.</p> <p>Provide information on traplines, along with a description of potential effects of the Project on current use of land and resources for traditional purposes by Aboriginal peoples. For each of the following, discuss on a community by community basis.</p> <p>a) Provide information on trapline locations in the Project area</p> <p>b) Generally identify Aboriginal and non-Aboriginal trapping rights and trapping holders in the Project area</p> <p>c) Discuss how potential effects of the Project on Aboriginal activities along or adjacent to the traplines such as trapping, hunting and gathering will impact Aboriginal peoples (current use of land and resources for traditional purposes; socio- economics; employment, human health, etc.)</p> <p>d) Discuss any ceremonial or other culturally significant practices identified by Aboriginal peoples in the Project area, including along or adjacent to traplines and discuss how the project will affect these practices</p> <p>e) Provide information on how effects to all trapline use will be mitigated</p> <p>f) Provide information on how effects to traplines will be mitigated, in consultation with Aboriginal trapline holders</p>	<p>a) Trapline areas and cabin location information is provided in Appendix O (Land and Resource Use TSD), Appendix I (Land and Resource Use Baseline Study Report), Figure 13.</p> <p>b) Trapping rights and related information is presented in Appendix O, Section 5.3.2.</p> <p>c) Potential effects of the Project on Aboriginal TLU activities are discussed in Appendix P (Traditional Land Use TSD), and are summarized in Section 9.11 of the EA.</p> <p>d) Based on the TK / T LU studies conducted ,there are no details about ceremonial or other culturally significant practices identified by Aboriginal peoples (see Appendix P, Section 3.1.5.1)</p> <p>e) Mitigation for potential impacts to trapline areas are presented in Section 10.</p> <p>f) No Aboriginal trapline holders have been identified through consultation with the MNRF or Aboriginal people. IAMGOLD will continue to discuss potential Project effects on traditional activities with potentially affected Aboriginal communities throughout the life the Project. Should additional information regarding an Aboriginal community's traditional practices become available, the Proponent will review and assess any potential effects, and develop and implement necessary mitigation measures, as appropriate.</p>	None.	n/a

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499	CEA Agency	<p>AP1-3 EIS Report, Section 6.5.1.2, p. 6-119, 4th paragraph; Section 9.9.1, pg. 9-49, Section 9.9.2, pg. 9-52, pg. 9-54, pg. 9-56; Appendix N</p> <p>Areas identified to be (or supporting) recreational or Aboriginal fisheries in potentially affected surface waters are not clearly identified and not sufficiently discussed. It is unclear from what source the information on fisheries, particularly Aboriginal fisheries, were obtained, and which water bodies in the local study area (LSA) and regional study area (RSA) are used for Aboriginal fisheries.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects and/or impacts to Aboriginal peoples as a result of the Project.</p> <p>a) Provide information on recreational and Aboriginal fisheries. Also discuss where information on fisheries was sourced.</p> <p>b) Identify Aboriginal and non-Aboriginal fisheries in the Project area</p> <p>c) Provide information on potential effects to fisheries, including potential effects to fish in these fisheries, and how these potential effects will impact Aboriginal and non-Aboriginal peoples (socio-economics, employment, human health, etc.)</p> <p>d) Discuss any socio-economic or cultural impacts to Aboriginal and non-Aboriginal peoples due to loss of access to existing fisheries</p> <p>e) Provide information on how effects to recreational and Aboriginal fisheries will be mitigated, in consultation with fisheries users</p> <p>f) Outline if arrangements have been made to mitigate impacts to Aboriginal peoples as a result of potential effects to Aboriginal fisheries.</p> <p>g) Outline if arrangements have been made to mitigate impacts to non-Aboriginal peoples as a result of effects to recreational fisheries</p> <p>h) Discuss offset plans in relation to compensation for Aboriginal peoples on a community by community basis</p> <p>i) Discuss whether these considerations change the conclusions in regards to any indicators (valued components) in the EIS.</p>	<p>a) Information on recreational and Aboriginal fisheries was determined through consultation with outfitters, the public and Aboriginal groups as well as discussions with the MNRF.</p> <p>b) There are no known commercial fisheries in the land and resource use regional study area (see Appendix O, Land and Resource Use TSD, Section 5.33) and no Aboriginal-identified Sensitive Area Lakes overprinted by the Project (see Appendix P, Traditional Land Use TSD, Section 3.1.3).</p> <p>c) IAMGOLD does not anticipate any effects to fisheries as there are no commercial or Aboriginal fisheries in the area. With respect to recreational fishing, most of the popular fishing lakes in the area will not have any access restrictions (see Appendix O, Section 3.1.6.3).</p> <p>d) There are no net losses are anticipated to Aboriginal or non-Aboriginal fisheries.</p> <p>e) The proposed effects management strategy for limiting adverse effects on fishing areas includes designing or timing construction phase activities so limited or no in-water work is required.</p> <p>f) IAMGOLD will continue to discuss potential Project effects on traditional activities with potentially affected Aboriginal communities throughout the life the Project. Should additional information regarding an Aboriginal community's traditional practices become available, the Proponent will review and assess any potential effects, and develop and implement necessary mitigation measures, as appropriate.</p> <p>g) IAMGOLD does not anticipate any impacts on non-Aboriginal peoples due to the proposed mitigation measures identified in the water quality and aquatic biology studies (see Appendix J, Water Quality TSD; and Appendix N, Aquatic Biology TSD). Most of the popular recreational fishing spots in the region are outside of the controlled access area for the Project.</p> <p>h) IAMGOLD is committed to building and maintaining a strong relationship with potentially affected Aboriginal groups. As part of that commitment, IAMGOLD is negotiating impact benefit agreements with potentially affected First Nations (Mattagami First Nation and Flying Post First Nation) and with the Métis Nation of Ontario – Region 3. These agreements are expected to include a number of topics, including an ongoing process for socio-economic effects management. This document is not meant to be prejudicial to those negotiations.</p> <p>i) These considerations do not change the conclusions in the EIS; however, should additional information become available regarding Aboriginal fisheries, IAMGOLD will consider this in consultation with Aboriginal groups.</p>	None.	n/a

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500	CEA Agency	<p>AP1-4 EIS Report, Section 9.11.2.1, p. 9-63, 4th paragraph; 6.5.3, p. 6-126 to 6-128; Section 6.5.2.2, p. 123, 2nd bullet; Appendix Q</p> <p>It is unclear in the EIS Report and in Appendix Q how Aboriginal traditional knowledge (ATK) informed the identification of built heritage resources, except for a mention in Section 6.5.2.2 of a portage route that was identified from the Mattagami and Flying Post TK/TLUs.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects and/or impacts to Aboriginal peoples as a result of the Project.</p> <p>Provide information on built heritage resources, including portage routes. For each of the following, discuss on a community by community basis.</p> <p>a) Provide information on how ATK informed the identification of built heritage resources, including portage routes, in the local study area.</p> <p>b) Provide information on traditional use of portage routes by Aboriginal peoples and clearly identify these waterways</p> <p>c) Provide information on how loss of waterways in the Project area will impact Aboriginal peoples, specifically in relation to accessibility</p> <p>d) Provide information on how effects to portage routes will be mitigated, in consultation with portage route users</p> <p>e) Outline if arrangements have been made to mitigate impacts to Aboriginal peoples as a result of effects to portage routes</p> <p>f) Discuss whether these considerations change the conclusions in regards to any indicators (valued components) in the EIS.</p>	<p>a and b) As part of the TLU studies, the Mattagami First Nation and Flying Post First Nation developed a TK / TLU study (see Appendix I of Appendix P; Traditional Land Use TSD). In this study a canoe / portage route is identified. Effects and mitigation measures for the portage route are considered as part of Appendix Y (EA Commitments Table).</p> <p>c) IAMGOLD is committed to maintaining access to existing identified canoe and portage routes. As such, there will be no significant impact on Aboriginal peoples with regards to use of waterways. Impacts on Traditional Land Use - Canoeing are considered in Chapter 11 of the Amended EIS / Final EA Report.</p> <p>d and e) As described in Appendix P, Section 3.1.4, the use of the canoe and portage route identified by First Nations will be controlled during the construction phase. As described in Section 3.2.4, during the operations phase IAMGOLD will establish a suitable portage / connection such that the canoe / portage route will still be usable. IAMGOLD will work with any potential canoe route users to identify suitable conditions for crossing controlled-access lakes.</p> <p>f) These considerations are already included in the assessment under the EA indicator Traditional Lane Use - Canoeing.</p>	None.	n/a

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501	CEA Agency	<p>AP1-5 EIS Report, Section 9.9.2.1; Section 5; Appendix W- Human and Ecological Risk Assessment Pg. 2-20; Appendix N - Aquatic Biology Technical Support Document – Pg.8; Appendix Y</p> <p>It is stated in Appendix N that, “the created fish habitat associated with the watercourse realignment will involve the flooding of some existing terrestrial habitats. It is possible that the flooding of vegetation within these water bodies will result in methyl mercury in production that may be taken up by fish and limit their ability for consumption. This could potentially impair their use for recreational fishing.” The potential for methyl mercury production and the effects that this may have on ecological and social receptors, prior to mitigation, has not been quantified and assessed.</p> <p>It is further stated in Appendix W (Human and Ecological Risk Assessment) that, “there are currently fish consumption advisories for mercury in lakes within the study area, it is considered unlikely that project-related activities will have the potential to increase exposure to mercury for anglers in the area.” However, an increase in mercury in fish tissue may have some impact on any advisories. For example, cause a reduction in the size of fish or number of meals of fish per month that are safe to eat, and may result in additional fish species added to the advisory. In addition, based on the 2013-2014 Guide to Eating Ontario Sport Fish, none of the water bodies (lakes, rivers) in the immediate vicinity of the site are listed as being under advisory for fish consumption. Not all anglers or subsistence fishers may be aware of and follow any advisories. In addition to environmental effects from increased methyl mercury, it is unclear what impact an increase in methyl mercury concentrations in fish would have on Aboriginal peoples in term of their consumption patterns and access to traditional fishing resources. Finally, if methyl mercury levels increases in fish, it is unclear what impacts may result in other species that consume fish and are subsequently consumed by Aboriginal peoples. For example, Aboriginal peoples consuming waterfowl that have been consuming fish with elevated levels of methyl mercury.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects and/or impacts to Aboriginal peoples as a result of the Project.</p> <p>Assess and explain the potential for the watercourse realignments to result in increased methyl mercury in the environment (e.g. in fish tissue) and the potential impacts to Aboriginal and non-Aboriginal peoples (e.g. human health, socio-economic, employment, etc.). For each of the following, discuss on a community by community basis.</p> <p>a) Provide a list of the water bodies with fish consumption advisories</p> <p>b) Provide a prediction and characterization of the likely increase to methyl mercury production and implications to current consumption advisories</p> <p>c) Provide an assessment of environmental effects (e.g. wildlife that eats fish) and impacts to Aboriginal and non-Aboriginal peoples, including anglers, resulting from increased methyl mercury levels, prior to mitigation (considering all pathways when determining the environmental and human health risk assessment and update the findings, as appropriate)</p> <p>d) Provide an explanation of the methodology, rationale for mitigation measures, and effectiveness of the proposed mitigation (with alternative mitigation approaches as applicable), including residual effects</p> <p>e) Provide an explanation of how , increased methyl mercury levels may impact Aboriginal peoples, including:</p> <p>1) Traditional food sources and country foods, including fish and other species that consume fish and are subsequently consumed by Aboriginal peoples.</p> <p>2) Consumption patterns and access to traditional fishing resources by Aboriginal peoples.</p> <p>Comment continues on next page.</p>	<p>a) Mesomikenda Lake and Middle Three Duck Lake both have consumption guidelines in the 2013-2014 Guide to Eating Ontario Sport Fish (MOE 2013). For Mesomikenda Lake, there are current guidelines for the consumption of ling (burbot), northern pike, walleye and white sucker (Sport Fish Consumption Advisory 2013-2014). Middle Three Duck Lake has guidelines for the consumption of northern pike (Sport Fish Consumption Advisory 2013-2014).</p> <p>b) See response to Comment #482.</p> <p>c) The potential for increases in methyl mercury production as a result of the Project have been assessed in the Aquatic Biology effects assessment (Section 9.9 of the EA). In order to address the potential concern associated with methyl mercury production in areas to be flooded, IAMGOLD is committing to removing terrestrial vegetation within the areas that are expected to experience flooding due to the construction of watercourse realignments (Section 10, Table 10-2). This commitment has been expanded to include the removal of shallow organic-rich soils in the small areas expected to become flooded. IAMGOLD does not expect a significant increase in methyl mercury production post-inundation, and therefore does not expect significant changes in body burdens in the fish populations present in the lakes affected by the Project. Significant increases in mercury concentrations are not expected for two reasons: a) the area to be flooded is small (and is already subject to seasonal changes in water levels) and b) mitigation measures in the form of removing organic material and topsoil have been proposed which will serve to limit conditions favourable for methyl mercury production post-flooding.</p> <p>Fish tissue monitoring for mercury levels will be ongoing and should monitoring identify mercury concentrations that indicate that the current advisory levels are no longer protective of human health, then IAMGOLD will revise the advisories accordingly, taking into consideration consumption patterns. Affected communities will be notified.</p> <p>d) See response to Comments #190, #482 and the Addendum to Appendix N for additional information.</p> <p>e) As above, IAMGOLD does not expect a significant increase in methyl mercury flux in the lakes near the Project, and therefore does not expect significant effects to Aboriginal people. This is due to both the limited area subject to flooding and proposed mitigation measures to that will serve to limit conditions favourable for methyl mercury formation.</p> <p>f) Mitigation for methyl mercury production is described in the response to Comment #482. Although increases in methyl mercury production are not expected, should there be an increase then consumption advisories will be revised taking into consideration consumption patterns.</p> <p>g) Fish tissue monitoring for mercury has been proposed (see Section 5 of the Aquatic Biology TSD). It should be conducted on all lakes where water levels are going to increase as a result of watercourse realignments.</p> <p>h) An Addendum to Appendix N (Aquatic Biology TSD) has been prepared which includes additional information related to methyl mercury production.</p> <p>i) No new effects assessment indicators have been added to the effects assessment in Chapter 9 of the EA. The effect of mercury on the usability of sport fish is considered through the commercial, recreational and Aboriginal fisheries indicator for Aquatic Biology.</p>	Additional information related to methyl mercury production has been provided in the Addendum to Appendix N.	Addendum to Appendix N

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501 cont	See previous page.	<p>f) Indicate what arrangements the proponent is considering for mitigating impacts to Aboriginal peoples should methyl mercury levels increase</p> <p>g) Provide a fish monitoring program that includes methyl mercury and considers the fish species, size, type of tissue and sample preparation method that is representative of how (Aboriginal) people are most likely to consume the fish (e.g. fillet including skin vs. skinned fillet, raw vs. cooked, etc.) as per Health Canada guidance¹.</p> <p>h) As applicable, note any changes to conclusions in the EIS in relation to work done in relation to the requests immediately above.</p> <p>i) Discuss whether these considerations change the conclusions in regards to any indicators (valued components) in the EIS.</p> <p>¹ Health Canada. 2010. Federal Contaminated Site Risk Assessment in Canada. Supplemental Guidance on Human Health Risk Assessment for Country Foods (HHRA). Prepared by Contaminated Sites Division, Safe Environments Directorate. October.</p>	See previous page.	See previous page.	See previous page.
502	—	This comment number has not been assigned.	—	—	—

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503	CEA Agency	<p>AP1-6</p> <p>Appendix P – Traditional Land and Resource Use; Appendix W – HHRA TSD – Section 2.1.2 (Study Area and Potential Exposure Pathways); Appendix K</p> <p>According to Appendix P, the project area is used for traditional activities, including blueberry picking and hunting.</p> <p>As there are uncertainties with the predicted future soil and surface water contaminant concentrations (which could contaminate future terrestrial and aquatic flora and fauna), the ingestion of contaminated country foods may have the potential to impact Aboriginal peoples.</p> <p>The list of exposure pathways identified in Appendix W (HHRA TSD) includes both the ingestion of fish and wild game and the ingestion of plants. These pathways are not discussed further in the HHRA.</p> <p>The EIS and supporting documents do not identify any baseline monitoring of country foods or recommend monitoring of country foods during operations. In order to evaluate pre-project country foods contaminant levels, it would be useful to collect baseline samples of specific country foods typically harvested in the area (including plants, berries, fish and game/waterfowl) and analyze them for the relevant COPCs, refer to Health Canada's Guidance on Human Health Risk Assessment for Country Foods, which can be found at the following link, http://www.hc-sc.gc.ca/ewh-semt/pubs/eval/eval/eval/index-eng.php.</p> <p>The response to this information request will assist the Agency in determining potential environmental effects and/or impacts to Aboriginal peoples as a result of the Project.</p> <p>Identify the country foods important to Aboriginal peoples on a community by community basis and make reference to the source of this information. In addition:</p> <p>a) Provide baseline information on country foods and discuss how country foods will be monitored during the Project phases to evaluate any changes to contaminant levels in country foods and confirm predictions of effects. Refer to Health Canada's guidance on human health risk assessment for country foods¹.</p> <p>b) Evaluate and discuss the exposure pathways that result from ingestion of contaminated country foods in the HHRA and determine any potential environmental effects and/or impacts to Aboriginal peoples and non-Aboriginal peoples.</p> <p>c) If an exposure pathway is not evaluated in the HHRA, provide a rationale.</p> <p>d) Provide appropriate mitigation measures and identify residual effects.</p> <p>e) Outline if arrangements have been made to mitigate impacts to Aboriginal peoples as a result of effects from contaminants in soil and surface water that may affect country foods and vegetation species used in traditional activities.</p> <p>f) Discuss whether these considerations change the conclusions in regards to any indicators in the EIS.</p> <p>¹ Health Canada. 2010. Federal Contaminated Site Risk Assessment in Canada. Supplemental Guidance on Human Health Risk Assessment for Country Foods (HHRA). Prepared by Contaminated Sites Division, Safe Environments Directorate. October.</p>	<p>Indirect soil contact pathways inclusive of country foods were assessed through an evaluation of changes in soil quality that might result from the Project. As no changes in soil quality were predicted to occur over the lifetime of the Project when assessed against the MOECC Table 1 SCS, it can be concluded that unacceptable risks associated with exposure to contaminants that partition to country foods are not expected.</p> <p>a) The approach taken to assessing changes in ambient concentrations of trace elements in soil, and by extension vegetation and wildlife, was based on an evaluation of changes in soil chemistry resulting from wet and dry deposition over the lifetime of the Project. As a conservative measure, the quantities of trace metals deposited were assumed to mix in the top one centimeter of soil only. Information on local background concentrations of different elements in soil indicated that concentrations are within the range considered background for Ontario soils. As such, for the purpose of the HEHRA, results of depositional modelling were compared to the Table 1 SCS developed by the Ontario MOECC. These are based on an extensive sampling program of undisturbed urban and rural parkland across Ontario. The Table 1 SCS are based on the 98th percentile of the sampling dataset to account for natural variability. As the depositional modelling did not predict an increase in soil concentrations for any parameters evaluated approaching the Table 1 SCS, it can be concluded that there would be no acceptable risk via direct and indirect soil contact pathways inclusive of uptake by plants and grazing animals.</p> <p>Considering the depositional modelling results and the modest increase in soil concentrations of trace elements, a monitoring program for assessing trace element uptake in soils and vegetation is not considered necessary.</p> <p>b) Exposure pathways associated with ingestion of country foods have been discussed in Section 2.2.3.2 of Appendix W (HEHRA).</p> <p>c) Where exposure pathways have not been evaluated, a rationale has been provided. The one exception is ground water where additional discussion has been added to Appendix W in response to Comment #510.</p> <p>d) As unacceptable risks have not been identified mitigation measures are not required and therefore have not been recommended.</p> <p>e) With the exception of fish consumption advisories, which are already in effect in the Study area, mitigation measures for country foods for Aboriginal populations are not anticipated and therefore have not been recommended.</p> <p>f) There are no changes to conclusions regarding indicators in the EA.</p>	<p>The following text has been added to Appendix W (HEHRA), Sections 2.1.3.2 and 3.1.2.2:</p> <p>"Incremental changes in soil quality were assessed against criteria representative of "background" soil quality in Ontario (i.e., Table 1 SCS; MOE, 2011). Table 1 SCS were developed by the Ontario Ministry of the Environment and Climate Change and are based on an extensive sampling program of undisturbed urban and rural parkland across Ontario. The Table 1 SCS are based on the 98th percentile of the sampling dataset to account for natural variability. Information on local background concentrations of different elements in soil indicates that concentrations are within the range considered background for Ontario soils."</p>	<p>Appendix W (HEHRA), Sections 2.1.3.2 and 3.1.2.2</p>
504	CEA Agency	<p>DFO-03</p> <p>EIS Appendix N, Table 3.1.</p> <p>Walleye is not indicated as present in Cote Lake.</p> <p>Walleye should be indicated as present in Cote Lake, as it was found in surveys in 2010 by AMEC, as indicated in EIS Appendix N (Aquatic Technical Support Document), Appendix A, Section A.8.2. Other species which were found by AMEC in 2010 are included in the table with a footnote indicating "AMEC 2011".</p>	<p>Walleye were found in Côté Lake in 2010 (AMEC 2011). IAMGOLD agrees that Table 3.1 should have walleye included in Côté Lake. The table has been updated (see revised Appendix N; Aquatic Biology TSD).</p>	<p>Table 3.1 of Appendix N (Aquatic Biology TSD) has been updated to reflect the capture of walleye in Côté Lake.</p>	<p>Appendix N</p>

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505	CEA Agency	<p>DFO-04 EIS Appendix N, Section 2.3 page 3; EIS Appendix N, Section 7.0, page 31</p> <p>The EIS Report indicates that the included “baseline reports together with existing information on the water bodies within the local study area (AMEC 2011) were used to define the existing conditions on which potential effects of the project could be considered”. For Aquatic Biology, the existing information in the form of the AMEC, 2011 report is not included in the EIS.</p> <p>Provide the report “AMEC (AMEC Americas Limited. Earth & Environmental Division). 2011. Phase II Baseline Aquatics Report Chester Project. Chester Township, District of Sudbury, Ontario. Prepared for Trelawney Mining and Exploration Inc., July 2011.” for DFO review.</p>	<p>The salient fisheries data from the AMEC Phase II Baseline Aquatics Report were incorporated into the Minnow Aquatic Biology Baseline Report (Appendix N, Appendix C) and as such it has not been included as a separate report in the EA.</p>	None.	n/a
506	CEA Agency	<p>DFO-09 EIS Appendix N, page 7</p> <p>The list of activities with potential to impair CRA fisheries within the LSA does not include decreased water availability to watercourses during operations or closure, due to realignments or refilling the lake, which can have impacts on fish habitat.</p> <p>This impact is discussed later in the report (i.e. EIS Appendix N, page 23) and therefore should be included in the discussion of activities with potential to cause serious harm to fish.</p>	<p>The filling of the watercourse realignments and open pit are not expected to affect commercial recreational or Aboriginal fisheries for the following reasons:</p> <ul style="list-style-type: none"> ▪ the watercourse realignments will be filled with rainwater, runoff and snow melt and not with water pumped from other watercourses; and ▪ the open pit will be filled with water re-directed from the storm water ponds around the mine rock pile, direct precipitation, runoff and snow melt, groundwater inflow and possibly the redirection of a portion of peak flow from the Mollie River; however, the use of Mollie River water would only be conducted under approval from MOECC and would focus on the redirection of excess water. <p>Therefore, the watercourse realignment and open pit filling were not listed as activities that have the potential to impair commercial, recreational or Aboriginal fisheries.</p>	None.	n/a
507	CEA Agency	<p>HC-3 Appendix W – HHRA TSD – Section 2.3.1.1</p> <p>With respect to chromium (Cr), only Chromium II and III were discussed. The most toxic form of Cr is Cr VI (hexavalent chromium). It is unclear why the most toxic form of Cr was not discussed or evaluated in the HHRA.</p> <p>HC suggests providing a discussion about why Cr VI was not evaluated in the HHRA.</p>	<p>Hexavalent chromium was not evaluated in Appendix W (EHRA) as it was not identified as a contaminant of potential concern from the Project. This is because there are no processes that produce and/or emit the hexavalent form of chromium. Additional text has been included in the EHRA providing rationale on why hexavalent chromium is not considered a contaminant of potential concern.</p>	<p>The following text has been added to Appendix W (EHRA), Tables 1 and 9: “Hexavalent chromium has not been evaluated in the EHRA as it was not identified as a contaminant of potential concern from the Project as there are no processes that produce and/or emit the hexavalent form of chromium.”</p>	Appendix W

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508	CEA Agency	<p>HC-4</p> <p>Appendix W – HHRA TSD – Tables 7 and 8</p> <p>COPC-specific hazard quotients and ILCRs have been characterized for single COPCs only. HC advocates that for chemicals and pathways affecting the same target organ, the hazard quotients should be summed for non-carcinogens and for carcinogens, the ILCRs should be summed for the chemicals and pathways causing the same form of cancer.</p> <p>HC suggests summing those substances which affect the same target organ(s) (non-carcinogens) and also for those that can result in the same types of cancer(s) (carcinogens).</p>	<p>For both human and ecological receptors, additive and synergistic effects resulting from exposure to multiple chemicals is a factor that requires consideration. For compounds that target a specific organ or operate via a common mechanism of action, additivity is often assumed to address the potential for cumulative effects. Addressing cumulative effects from multiple stressors that operate on multiple organ systems is much more complex and may lead to an underestimation of the risk.</p> <p>In Appendix W (EHRA), the toxicity reference values that have been derived are based on different endpoints for different species making it difficult to evaluate cumulative effects with any degree of certainty. Nevertheless, most of the parameters identified as chemicals of concern are essential nutrients and are not expected to be present at concentrations that present a risk. For strontium and arsenic, the hazard quotients are sufficiently low that additivity would have little effect on the outcome of the assessment.</p>	<p>The following text has been added to Appendix W (EHRA), Section 2.5:</p> <p>"Several contaminants affect the same organ system (e.g., respiratory irritants, etc.) which means that there is the potential that they could interact resulting in the potential for greater than anticipated health effects. As such, assessing chemicals on an individual basis introduces the possibility that risks are underestimated owing to the fact that the combined effect of chemicals that act by a common mode of action is not taken into account. Under these circumstances they typical practice is to sum hazard quotients for those compounds that act on the same organ system.</p> <p>In the present assessment, the hazard quotients for similarly acting compounds were not summed on the recognition that, with the exception of the criteria air contaminants, the hazard quotients were sufficiently low such that combining all of those that act by a common mechanism of action would have little significant effect on the outcome of the assessment. With respect to criteria air contaminants, while there is recognition that contaminants such as PM, NO₂ and SO₂ interact to potentiate health outcomes, the extent to which these pollutants interact is still the subject of research. The exposure limits used in the assessment for these criteria contaminants are largely based on the results of epidemiological studies that evaluated changes in health outcomes associated with changes in urban air quality. As such, the exposure limits already reflect combined exposure to multiple contaminants."</p> <p>To address the issue of additive and synergistic effects in Appendix W (EHRA) the following text has been added to</p> <p>Section 3.5:</p> <p>Changes to the EIS / Draft EA Report continue ont the next page.</p>	Appendix W, Sections 2.5 and 3.5

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508 cont	See previous page.	See previous page.	See previous page.	"With respect to additive and/or synergistic effects, there is the potential that contaminants that have similar modes of action may interact and result in the potential for greater than anticipated ecological health effects. Therefore, assessing chemicals on an individual basis introduces the possibility that risks are underestimated owing to the fact that the combined effect of chemicals that act by a common mode of action is not taken into account. Under these circumstances the typical practice is to sum hazard quotients for those compounds that act on the same organ system. In the present assessment, the hazard quotients for similarly acting compounds were not summed on the recognition that the hazard quotients were sufficiently low such that combining all of those that act by a common mechanism of action would have little significant effect on the outcome of the assessment."	See previous page.
509	CEA Agency	HC-6 Appendix W – HHRA TSD In order to validate the conclusion that there are no elevated health risks, it would be useful to provide a risk calculation worked example for one carcinogen and one non-carcinogen. HC suggests providing a risk calculation example for one carcinogen and one non-carcinogen.	A worked example has been provided in the Addendum to Appendix W (HEHRA).	A worked example has been provided in the Addendum to Appendix W (HEHRA).	Addendum to Appendix W
510	CEA Agency	HC-9 Appendix W – HHRA TSD – Section 2.1.2 (Study Area and Potential Exposure Pathways) In addition to the exposure pathways identified in the TSD, additional pathways could include: 1) Inhalation of airborne emissions, including particulate matter; 2) Deposition of emissions and dusts on vegetation and subsequent ingestion by human receptors; 3) Ingestion of potentially contaminated groundwater. If these pathways are not active, additional information is required in order to substantiate their absence. HC suggests including all applicable exposure pathways and providing justification for the pathways not considered.	The following pathways were identified as being complete and were evaluated in Appendix W (HEHRA): <ul style="list-style-type: none"> ▪ direct inhalation of airborne emissions inclusive of particulate and particulate-bound contaminants; ▪ deposition of emissions and dusts with subsequent uptake by vegetation and ingestion by human receptors. Considering the majority of uptake is via direct uptake via soil as opposed to foliar deposition, this pathway was evaluated through an examination of changes in soil quality over the lifetime of the Project; ▪ direct ingestion of surface water; ▪ incidental ingestion and dermal contact of surface water; ▪ ingestion of fish and wild game; and ▪ exposure to contaminants of potential concern via ingestion of ground water was not considered a complete pathway as no domestic wells were identified as being present in the Project Area or vicinity. It is anticipated that the majority of receptors in the area rely on surface water as a source of potable water. Additional text has been added to Appendix W (HEHRA) clarifying this pathway. 	The following text has been added to Appendix W (HEHRA), Section 2.1.2: "In addition to the potential exposure pathways discussed, receptors may also come into contact with discharges originating from the Project through the consumption of ground water. Although there is a potential for this to occur, this pathway has been eliminated as there are no domestic wells that have been identified as being present in the Project Area or vicinity. It is anticipated that the majority of receptors in the area rely on surface water as a source of potable water."	Appendix W (HEHRA), Section 2.1.2

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511	CEA Agency	<p>HC-14 Appendix W – HHRA TSD – Section 2.2.1</p> <p>The TSD states, “in cases where drinking water guidelines were not available concentrations were compared to aquatic health benchmarks which are more conservative than drinking water guidelines”. There are no references for this statement or rationale to justify the accuracy of this statement.</p> <p>HC suggests providing additional information to substantiate the statement that aquatic health benchmarks are more conservative than drinking water guidelines.</p>	<p>The statement was based on the fact that the CWQGs are based on the protection of the most sensitive water use at a site inclusive of: raw water for drinking water supplies, recreation and aesthetics, aquatic life, wildlife, agricultural and tissue quality (protection of aquatic dependent wildlife and human health). The Water Quality Guideline that is ultimately adopted is based on the most sensitive water use at a site (CCME, 2003).</p> <p>In the absence of a drinking water guideline, IAMGOLD cannot state with certainty that the aquatic health benchmarks would be more conservative. Nevertheless, as water quality guidelines are considered protective of all uses, including direct ingestions, they are considered adequate substitutes for evaluating the potential health risks associated with exposure to surface water. Edits have been made to Appendix W (HEHRA) for clarification.</p>	<p>The following text has been added to Appendix W (HEHRA), Section 2.2.1: “For surface water, maximum concentrations were identified in Table 5. Predicted concentrations were compared to drinking water guidelines that are protective of human health. In cases where drinking water guidelines were not available, concentrations were compared to aquatic health benchmarks which are considered protective of all uses including direct ingestion. These aquatic health benchmarks are considered adequate substitutes for evaluating the potential health risks associated with exposure to surface water.”</p>	Appendix W (HEHRA), Section 2.2.1
512	CEA Agency	<p>HC-15 Appendix W – HHRA TSD – Section 2.2.2.1</p> <p>With respect to the selection of the “Resident-Aboriginal”, the TSD indicates that it was assumed that this receptor encompassed all life stages. It is unclear from this statement whether the composite receptor was evaluated for both carcinogenic and non-carcinogenic health risks. For non-carcinogens, the most sensitive receptor is the toddler, and for carcinogens, it is the composite lifetime receptor.</p> <p>HC suggests providing a discussion about which life stage(s) were evaluated when calculating the health risks for carcinogens and non- carcinogens.</p>	<p>For contaminants that have a carcinogenic end-point, the incremental lifetime cancer risk was calculated by multiplying the dose (exposure) by the fraction of time exposed by the appropriate inhalation unit risk.</p> <p>As the Project operations phase will extend for a 15 year period, then exposure would be amortized accordingly rather than assuming exposure over a lifetime. However, in the current assessment, it was conservatively assumed that a receptor would be exposed for the entire duration of their lifetime. While a composite receptor could be used for the estimation of the incremental lifetime cancer risk (requiring the use of the inhalation cancer slope factor), it would make little difference to the outcome of the assessment.</p>	None.	n/a
513	CEA Agency	<p>HC-16 Appendix W – HHRA TSD – Section 2.2.3.1</p> <p>For inhalation exposure, the TSD states that the exposure point concentrations were modelled for the receptors located at the maximum point of impingement outside of the Project site. There is no discussion in the EIS about how site access will be restricted to non-workers. As such, the most conservative assessment of exposure to air contaminants would be to evaluate exposure at the location of the highest predicted air contaminant concentrations.</p> <p>HC suggests providing a discussion about how site access will be restricted to non-workers, and if site access is not expected to be restricted, consider evaluating health risks using the highest predicted air contaminant concentrations (which may be on-site concentrations).</p>	<p>Tables 1 and 2 in Appendix W (HEHRA) provide the predicted air emissions at the maximum point of impingement (i.e., Property Boundary) and at sensitive receptor locations for 1-hour, 24-hour and annual averaging times. The assessment evaluated human health risks at these locations and results are presented in Tables 7 and 8. Results showed exposure ratios greater than 1.0 for PM₁₀ and PM_{2.5} at the maximum point of impingement at the property boundary.</p> <p>With respect to the maximum ground level concentrations within the property, this was not assessed as exposures within the boundaries of the property are governed under the Occupational Health and Safety legislation. While a trespasser may be exposed to airborne emissions while on the property, the exposure would be expected to be transitory in nature. This is in contrast to the exposure estimates used for the off-site receptors which assume continuous exposure to the maximum concentration predicted off-site for a lifetime.</p> <p>Site access restrictions will be provided for those areas of the property that pose a direct hazard to the health and safety of trespassers and anyone else who may visit the site</p>	None.	n/a
514	CEA Agency	<p>HC-17 Appendix W – HHRA TSD – Table 6</p> <p>In Table 6, zinc was converted from an oral MRL to an inhalation MRL using an adult receptor. Given that zinc is non- carcinogenic via the inhalation pathway, it would be more conservative to convert the oral value to an inhalation value using a toddler receptor.</p> <p>When converting oral toxicity values to inhalation toxicity values, HC suggests using the characteristics of most sensitive receptor (e.g. body weight, inhalation rate, etc.)</p>	<p>The inhalation toxicity values for zinc and copper have been derived using the characteristics of the most sensitive receptor (i.e., toddler). This information is provided in the Addendum to Appendix W (HEHRA).</p>	<p>Inhalation toxicity values for zinc and copper using the most sensitive receptor have been included in the Addendum to Appendix W (HEHRA).</p>	Addendum to Appendix W (HEHRA)

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515	CEA Agency	<p>HC-18</p> <p>Appendix W – HHRA TSD – Table 7</p> <p>The HQs at the maximum POI exceed the acceptable HQ for PM₁₀ and PM_{2.5}. Given that site access is not expected to be restricted, it is unclear why these concentrations were not evaluated in the HHRA.</p> <p>HC suggests providing a discussion about why the maximum POI was not evaluated in the HHRA given that site access will not be restricted.</p>	<p>The maximum point of impingement refers to the location off-site where the maximum ground level concentration is expected to occur for a given contaminant and averaging period outside of the property. As such, it has been assumed that there is unrestricted access and that exposure is continuous for a lifetime. The consequences of exposure ratios of greater than one for PM₁₀ and PM_{2.5} at the maximum point of impingement are discussed in Appendix W (HEHRA), Section 2.4, in the context of the conservative nature of the dispersion modelling and exposure modelling. Any effects that would be experienced by exposure to PM₁₀ and PM_{2.5} at that receptor location would be expected to be transitory.</p>	None.	n/a
516	CEA Agency	<p>HC-20</p> <p>Appendix F- Air Quality TSD- Section 3.2.4 (Carbon Monoxide)</p> <p>Section 3.2.4 of the TSD indicates that background concentration of CO was not provided as it is not considered a key pollutant from above-ground mining operation. It should be noted that CO may cause potential health impacts upon exposure and should be included in the background air quality analysis.</p> <p>HC suggests including the background concentration of CO in the air quality modelling as it could contribute to the overall air quality.</p>	<p>For carbon monoxide, the predicted point of impingement (AAQC assessment) was 2632 µg/m³ for the 1-hour averaging time, 7% of the 36,200 µg/m³ AAQC. For the 24-hour averaging time, the modelled CO concentration was 1683 µg/m³, which is 11% of the AAQC (15,700 µg/m³). For the O.Reg. 419 assessment, the predicted (modelled) CO concentration was 976 µg/m³, or 16% of the Standard (6,000 µg/m³).</p> <p>The current ambient air monitoring network in Ontario includes ambient CO monitoring in Windsor, Hamilton, Toronto, and Ottawa where urban influences dominate.</p> <p>The last monitoring in Sault Saint Marie was in 2008, therefore a five year data set for this station would include data for 2004-2008.</p> <p>Over this period, the average 90th percentile CO measured over these five years was 506 µg/m³, and the highest 90th percentile was measured in 2004 (790 µg/m³). At 790 µg/m³, the baseline is equivalent to 2% of the 1-hr AAQC and 5% of the 8-hour AAQC.</p> <p>Taking both the low baseline CO concentrations measured historically even in areas impacted by urban environments and the magnitude of the modelled Project effects into account, carbon monoxide was not identified as an effects assessment indicator for this Project.</p>	None.	n/a
517	CEA Agency	<p>HC-21</p> <p>Appendix F-Air Quality TSD- Section 5.1 (Construction Phase);5.3 (Closure Phase)</p> <p>No air quality modelling was undertaken for the construction phase of the project. The rationale for this provided by the proponent was that the operations phase represented the worst-case or bounding case, and therefore emissions from all other project phases would be lower. Given that there are different emission sources which would be located at different locations on the project site during construction and operation phases, it may not be appropriate to assume that the air quality modelling for the operations phase is representative of the emissions sources associated with the construction phase.</p> <p>HC suggests modelling air emissions for the construction phase of the project.</p>	<p>A quantitative comparison of the material movements and on-site traffic during the construction phase, and material movements and on-site traffic during the operations phase is provided as part of the Addendum to Appendix F (Air Quality TSD).</p> <p>The comparison demonstrates that as a result of lower activity, and therefore lower emissions, construction phase effects would be of lower magnitude than those during the maximum year of the operations phase that was assessed for the EA. As a result, the assessment of maximum operations provides the maximum impact of both the construction phase and the operations phase.</p> <p>The maximum emissions scenario was modelled; rather than modelling a specific year, a scenario was developed that consisted of the maximum material movements over the Project life for each of the movements of ore, overburden, and mine rock, and maximum facility operating / production rates, and maximum haul truck and fleet activity.</p> <p>This scenario is detailed in the Addendum to Appendix F.</p>	<p>A quantitative comparison of material movements and on site traffic for the construction and operations phases has been provided in the Addendum to Appendix F.</p> <p>Additional information regarding the maximum emissions scenario has been provided in the Addendum to Appendix F.</p>	Addendum to Appendix F
518	CEA Agency	<p>HC-22</p> <p>Appendix F- Air Quality TSD - Section 4.2.1 (Monitoring Networks); Section 2.1.1 (Regional Study Area)</p> <p>Section 4.2.1 of the TSD indicates that air quality modeling was completed using CAPMoN however the proximity of the monitoring station to the project site was not specified. Thus Health Canada is unable to evaluate the background air quality data obtained from the CAPMoN.</p> <p>HC suggests providing the distance of the CAPMoN to the project site and also provide a rationale for limiting regional study area for air monitoring to a 10 km radius from the project emission sources.</p>	<p>The CAPMoN Algoma station is located approximately 200 km southwest of the Project site, and approximately 60 km north of Sault Ste. Marie.</p> <p>Siting of air monitoring stations in reasonable proximity to the property line (within 10km) allows for the distinguishing of Project site effects from other contaminant sources such as roadways, residential wood fires, etc. The monitors would be optimally sited to capture emissions from point sources at the ore processing plant, the open pit, and fugitive sources associated with the mine and ore processing plant.</p> <p>Impacts were modelled within a 10 km area to capture the maximum impacts. For fugitive sources, the maximum impacts are close to the site and drop off with distance. As such, impacts outside the 10 km area would be significantly lower than near the site. As well, MOECC, in their modelling guidance, recommends a modelling distance of 5 km from any sources. For the EA, IAMGOLD has extended the distance to 10 km.</p>	None.	n/a

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519	CEA Agency	<p>HC-23</p> <p>Appendix F-Air Quality TSD- Section 3.1.5 (Other parameters associated with ore mining and processing)</p> <p>Section 3.1.5 of the TSD states that, "Copper sulphate does not have a standard under O. Reg. 419/05, nor does it have an AAQC. A criterion of 20g/m³ was established by a certified toxicologist to be protective of health." Based on the information provided, it is unclear on how the criterion for copper sulphate was derived.</p> <p>HC suggests providing a discussion about how the criterion of 20 g/m³ was derived for copper sulphate.</p>	<p>A literature review was conducted to identify regulatory limits for copper sulphate specific to the inhalation route of exposure, however information pertaining to the toxicity of copper sulphate was sparse. However, there is sufficient information discussing the toxicity of copper and for the purpose of this assessment, it was assumed to be the contributor to potential toxicity over the sulphate portion. Therefore, toxicity reference values for copper were searched and used to assess toxicity to copper sulphate.</p> <p>The United States Environmental Protection Agency has not developed reference concentrations for elemental copper. ATSDR lists acute oral and sub-chronic oral MRLs of 0.01 mg/kg/day based on gastrointestinal effects. However, on the basis that the available data on the toxicity of inhaled copper were considered inadequate, ATSDR has not developed MRLs for inhalation. California's Office of Environmental Health Hazards Assessment has established an acute reference exposure level for copper of 100 mg/m³ based on an occupational exposure limit.</p> <p>A maximum point of impingement limit of 20 µg/m³ which is based on the intermediate MRL of 0.01 mg/kg/day as published by ATSDR (2004) was derived for use in the EA. The MRL is based on a drinking water study in adults by Araya et al. (2003). In the study, males and females were exposed to 0, 2, 4, or 6 mg/L of copper in drinking water (in the form of copper sulphate) for a period of two months. Daily dosages of copper were 0, 2.7, 5.9 and 11.3 mg/day were administered and blood samples for a subset of the study subjects were analysed for red blood cell copper, monocyte copper, serum copper, serum ceruloplasmin, superoxide dismutase, aspartate aminotransferases, alanine amino transferases, gamma-glutamyltransferase and hemoglobin levels. A no observed adverse effects level of 0.042 mg/kg/day (i.e., 2.7 mg/day) for gastrointestinal effects in males and females was derived. No alterations in the copper status parameters or biomarkers of liver disease were noted. Using the no observed adverse effects level of 0.042 mg/kg/day and an uncertainty factor of 3 for human variability, a MRL of 0.01 mg/kg/day was derived (ATSDR, 2004).</p> <p>Using the oral intermediate MRL of 0.01 mg/kg/day and the standard body weight and breathing rate of a toddler as per Health Canada of 16.5 kg and 8.3 m³/day, a maximum point of impingement of approximately 20 µg/m³ was derived.</p>	None.	n/a

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520	CEA Agency	<p>HC-24</p> <p>Appendix F- Air Quality TSD - Section 5.2.1 (Sources of Air Emissions);Section 5.2.3.2 (Ambient air quality); Table 5-2</p> <p>Section 5.2.1 of the TSD states that fugitive dust emissions from the TMF have not been assessed due to the placement of control measures. In order to assess the potential health impacts from particulate matter and dust generated from the TMF, fugitive dust emissions should be included in the quantitative assessment of emissions. The exclusion of fugitive dust emissions from the TMF underestimates the cumulative health risks posed by PM.</p> <p>Section 5.2.3.2 of the TSD indicates that total suspended particulates (TSP), PM_{2.5} and PM₁₀ are predicted to exceed health based criteria at the project boundary. Given that there are no restrictions on access to the project site, it is unclear why the project site boundary without the presence of any sensitive receptors was selected as the worst-case scenario for air quality.</p> <p>In addition, some of the air contaminants identified as being elevated on-site (e.g. PM_{2.5} and PM₁₀) are considered non- threshold substances, meaning that health effects may occur at any level of exposure. The International Agency on Cancer Research (IARC) has classified particulate matter as being carcinogenic to humans (Group 1)².</p> <p>HC considers that the risk associated with fine particles, particularly PM_{2.5}, is higher than the health risks associated with coarse PM or TSP (which is a measure of total suspended particulates, including liquid and solid particles, without particle size differentiation). Therefore, using 30 µg/m³ as a daily threshold is not in keeping with the full intent of the Canada-Wide Standard (CW S), which urges jurisdictions to take remedial and preventative actions to reduce anthropogenic emissions to the extent practicable in areas where ambient levels are below the CW S but still above levels associated with observable health effects.</p> <p>HC suggests including fugitive dust emissions from the TMF in the air quality modelling.</p> <p>Also include further details to support the assumptions made for characterizing cottagers as the most sensitive receptor for the human health risk assessment based on no access restrictions to the site.</p>	<p>The Project site boundary was selected as this defines the area which is under access control of IAMGOLD Signs would be posted identifying the Project site and the potential risk of entering the mining areas. The modelled effects along this boundary would be highest due to the nature of air dispersion of fugitive sources at ground level.</p> <p>The intent of the PM_{2.5} assessment was to allow for comparison of potential Project effects with the Canada-wide Standard established by the CCME.</p> <p>The potential for carcinogenic effects of constituents which may be present in the PM_{2.5} was addressed in Appendix W (HEHRA) prepared in support of the EA.</p> <p>A quantitative assessment of TMF dust emissions has been prepared, with the methodology and findings detailed in the Addendum.</p> <p>The cottages sited proximate to the Project site were included in the dispersion modelling as sensitive receptors. The identified locations are places where humans may reasonably be expected to be present on a regular basis and for longer periods of time.</p>	<p>A prediction of fugitive dust effects from the TMF has been included in the Addendum to Appendix F.</p>	<p>Addendum to Appendix F</p>
521	CEA Agency	<p>HC-25</p> <p>Appendix F- Air Quality TSD- Section 5.2.3.2 (Ambient Air Quality); Table 5-2</p> <p>Table 5-2 of the TSD presents the project emission rates for all COPCs from all sources (mobile and stationary), with a comparison to the Ontario AAQC. Inclusion of background concentrations to the predicted project concentrations is a more accurate representation of human exposure and provides for a better understanding of the exceedances of COPCs in comparison to the AAQC.</p> <p>In addition, Health Canada encourages the inclusion of future project development to be included in the modelling of air emissions to adequately address cumulative effects from the project.</p> <p>HC suggests including baseline plus project and cumulative concentrations for air quality monitoring for all COPCs. Also consider monitoring the same COPCs during all other project phases.</p>	<p>A table summarizing the cumulative effects of the modelled concentrations and the baseline concentrations at the sensitive receptors has been prepared and included in the Addendum to Appendix F (Air Quality TSD).</p> <p>The Provincial ECA for mining operations will require an appropriate ambient air monitoring program as a condition of approval to assess effects of fugitive dust from roads, stockpiles and open pit operations. The air monitoring program will be developed in consultation with the MOECC in order to ensure that it is appropriate and protective of ambient air quality.</p> <p>A monitoring plan will be submitted to MOECC for approval that details the target parameters, methodologies, and the number and location of monitor stations.</p> <p>It is expected that the monitoring will include TSP and metals on the TSP size fraction, PM₁₀, dustfall and passive monitoring for NO₂ and SO₂. The PM_{2.5} concentrations would be monitored as a fraction of the PM₁₀; this type of monitoring for PM_{2.5} is appropriate as it is the larger size fractions that are of primary concern from material handling and mining activities, while PM_{2.5} is emitted from combustion sources and not mining and material handling fugitive dust sources. Further, significant transboundary influences of PM_{2.5} are not anticipated from this site as the maximum effects were modelled along the property boundary.</p> <p>The final selection of target parameters and station locations will be done as part of the ECA approval process with the MOECC. Monitoring would not be conducted for all contaminant of potential concerns as it has been shown that many of the contaminant of potential concerns are insignificant.</p>	<p>A summary of cumulative effects of modelled concentrations and baseline conditions has been provided in the Addendum to Appendix F.</p>	<p>Addendum to Appendix F</p>

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522	CEA Agency	<p>HC-27</p> <p>Appendix G - Noise and Vibration TSD - Section 2.6.1 (Noise Effects); Section 6.0 (Conclusions), Appendix G - Noise and Vibration TSD – Appendix II</p> <p>Section 2.6.1 of the TSD indicates that noise modeling was completed using CadnaA model and provides a list of “factors” that are taken into account in the model. The specific factors that were used for this project were not identified, thus Health Canada is unable to evaluate the accuracy/conservativeness of the predicted noise model results.</p> <p>The noise baseline study was not included in Appendix II.</p> <p>HC suggests presenting all of the model input parameters used in predicting noise levels in order to evaluate their appropriateness and assess the validity of the noise model results.</p> <p>In addition, HC suggests providing the noise baseline study.</p>	<p>The list of “factors” are the basic modeling considerations in the International Organization for Standardization document 9613 in order to calculate outdoor sound propagation, which is the standard used in the CADNA software. All of these factors were considered in the modeling. Noise source data is provided in Appendix G (Noise and Vibration TSD), Appendix I for reference. IAMGOLD refers Health Canada to the International Organization for Standardization standard for further reference.</p> <p>A detailed assessment of the operations noise impact will be provided as part of the ECA approval for review by the MOECC.</p> <p>A noise and vibration baseline study was prepared, but not included with the EIS / Draft EA Report. The noise and vibration baseline study has been included in the Amended EIS / Final EA Report.</p>	<p>The noise and vibration baseline study has been attached as Appendix G (Noise and Vibration TSD), Appendix II.</p>	Appendix G
523	CEA Agency	<p>HC-28</p> <p>Appendix G- Noise and Vibration TSD - Section 3.1 (Construction Phase), Chapter 9 – Section 9.10.2.1 (Construction Phase)</p> <p>According to the TSD, the main construction activities are expected at the open pit, MRA and TMF areas and therefore, equipment anticipated for these locations along with the truck routes have been considered in the noise model.</p> <p>According to Section 9.10.2.1 of the EIS, the report states that cottagers along Highway 144 will notice increased traffic volumes on the highway during the construction phase.</p> <p>In the TSD, it does not appear that vehicle traffic to and from the site (e.g. worker vehicles and/or vehicles transporting supplies on-site and/or off-site) was included in the noise modelling. Given that the EIS states that traffic noise will be noticeable to nearby cottages, it is unclear why the increased vehicle traffic to and from the project site was not quantitatively evaluated in the noise modelling.</p> <p>HC suggests that all applicable noise sources be evaluated in the construction noise modelling or provide justification as to why they were excluded.</p>	<p>A noise impact assessment of Highway 144 with construction phase traffic was not included in Appendix G (Noise and Vibration TSD).</p> <p>An analysis of the Highway 144 traffic, comparing existing traffic to traffic during the construction phase shows that there is a negligible increase in noise level at the nearest cottager location.</p> <p>Therefore, the noise impacts to cottagers along Highway 144 are considered to be not insignificant. Section 9.10.2.1 of the EA document has been revised accordingly.</p>	<p>The following sentences have been removed:</p> <p>"Some cottagers are expected to also experience changes in background air quality, noise and vibration levels. However, these levels are expected to meet applicable regulations."</p>	Section 9.10.2.1, fifth paragraph
524	CEA Agency	<p>HC-29</p> <p>Appendix G – Noise and Vibration TSD - 3.1.2 (Nighttime Noise Level); Section 6.0 (Conclusions), Chapter 10 of EIS</p> <p>The TSD indicates that for two receptors in the local study area (POR6 and POR9), predicted night-time construction noise levels will exceed 40 dBA. The TSD concludes that some night-time activities may require noise mitigation measures to address noise levels at the nearest receptors. In reviewing the proposed mitigation in Chapter 10 of the EIS, general mitigation measures are presented but none specifically related to night-time noise during construction.</p> <p>HC suggests describing the specific mitigation measures that will be employed to reduce night-time construction noise levels at the nearest receptors (POR6 and POR9).</p>	<p>Implementation of noise mitigation are related to construction phase activity, not to night time activities specifically. The construction phase activities that occur at night, if they impact sensitive receptors, would be considered for mitigation if required.</p> <p>Further, the impact assessment is based on a worst-case assessment, and the actual construction phase noise levels may actually be lower (or not impacted at all) depending on the actual construction activity.</p> <p>Therefore, noise monitoring will be provided in areas where construction phase activity is in the vicinity of sensitive receptors. Should monitoring indicate noise impacts to be occurring, then the mitigation measures presented in Chapter 10 of the EA will be implemented accordingly for the specific construction phase activity under review. Identifying specific mitigation at this time is considered premature for the construction phase activity.</p>	None.	n/a
525	CEA Agency	<p>HC-30</p> <p>Appendix G – Noise and Vibration TSD - Section 3.1.1 (Daytime Noise Level)</p> <p>The TSD indicates that the noise associated with the construction of the transmission line was not included in the noise model, however, to reduce noise levels at nearby land users, a forest buffer will be retained to the extent practical. According to ISO9613-2:1996, vegetative buffers, such as trees, hedges, and vines, do not absorb much sound and thus do not make effective noise barriers.</p> <p>HC suggests providing a discussion of other potential mitigative measures that would be considered in order to reduce noise levels in the event that they are unacceptable to nearby residents.</p>	<p>IAMGOLD agrees that the forest buffer would provide minimal, if any, practical noise control. It was mentioned as a courtesy impact improvement (i.e., by removing the forest it would definitely not provide any noise reduction).</p> <p>Construction noise for the transmission line, as indicated in Appendix G (Noise and Vibration TSD) would occur for a short duration during the erection of each tower.</p> <p>However, noise monitoring will be provided in areas where construction activity is in the vicinity of sensitive receptors. Should monitoring indicate unexpected noise impacts to be occurring, then additional mitigation measures would be implemented accordingly for the specific construction activity under review. Identifying further specific mitigation at this time is considered premature for the construction activity.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
526	CEA Agency	<p>HC-31</p> <p>Chapter 5 of the EIS - Section 5.12 (Transmission Line and Power Supply)</p> <p>According to Section 5.12 of the EIS, the project includes the construction and operation of a 120 km, 230 kV transmission line. In the event that concerns are expressed about EMF, additional information can be collected.</p> <p>HC suggests that if concern is expressed, an assessment of EMF effects may be undertaken by considering the factors listed under section 5 of HC Useful Information for Environmental Assessments document, available at: http://www.hc- sc.gc.ca/ewh-sent/pubs/eval/enviro_n_assess-eval/index-eng.php</p>	No other comments related to electromagnetic fields were received on the EIS / Draft EA Report. If through ongoing continuing consultation substantial concerns were expressed with regard to electromagnetic fields, IAMGOLD would follow Health Canada's guidance.	None.	n/a
527	CEA Agency	<p>NRCan-02</p> <p>EIS Report, Section 6 , Description of the Environment; Appendix E – Geochemical characterization; Appendix H Hydrogeology TSD</p> <p>The information provided on surficial geology was reviewed to assess whether the information provided about anticipated conditions for stripping or the removal of the overburden during the mining process was accurate.</p> <p>Baseline data for surficial geology and soils are complete. Sufficient information about overburden thickness and soil composition has been provided to characterize the affected environment.</p>	The comments has been noted. No changes required.	None.	n/a
528	CEA Agency	<p>EC-17</p> <p>Hydrogeology TSD, Attachment II Groundwater Model Report</p> <p>The Hydrogeology TSD states: "Contact water will be managed such that the majority of infiltration over the MRA will report to the adjacent Mine Rock Storage Ponds (MRSPs), rather than directly enter the water table (Golder 2013b). As such, infiltration that reports to or reaches the underlying groundwater table is assumed to be small (50 mm/year), and, with the exception of adding the three MSRPs closest to the open pit, no additional consideration is given to the implementation of the MRA in the model."</p> <p>The Proponent is requested to provide a copy of Golder 2013b – Technical Memorandum: Cote Gold Project – Mine Rock Storage Pond Seepage Analysis DOC008. 13-1118-0017 (11000). Submitted to IAMGOLD, September 20, 2013.</p> <p>Provide a copy of the requested technical memorandum.</p>	The Technical Memorandum has been added to the Addendum to Appendix H (Hydrogeology TSD).	Additional information has been provided in the Addendum to Appendix H (Hydrogeology TSD).	Addendum to Appendix H
529	CEA Agency	<p>EC-33</p> <p>Appendix D Consultation Record</p> <p>Table D12-1 to Table D12-17 record the comments received and responses provided for each consultation session. However, references are not provided for the location in the EIS where responses are provided. For example, Table D12.2 Topic Tailings Impoundment, the proponent responded "The EA report will include further information regarding the Tailings Management Facility design and closure. Additionally, a malfunctions and accidents section will be included in the EA report, which will have specific details on potential emergencies with the tailings facility." But it is not clear where this information is provided.</p> <p>EC requests that the proponent insert references for the EIS location in which the responses are provided to allow for proper cross referencing.</p>	The Amended EIS / Final EA Report is structured in a way that easily allows readers to identify where they can find detail on a particular issue or component of the Project. As such IAMGOLD is of the opinion that cross-referencing the tables formerly located in Appendix D12 (Appendix D has been restructured to improve clarity) will not help facilitate accessibility of any issues that were raised in previous consultation activities.	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
530	CEA Agency	<p>EC-34 Chapter 5, Appendix U1 It is stated in Chapter 5 that "Open pit mining will occur at a mining rate of approximately 60,000 tonnes/day (tpd) of ore production. Extraction of the ore through pit development will result in the production of an approximately estimated 20 million tonnes (Mt) of overburden and 850 Mt of mine rock." In this case, the strip ratio is only 2.65, which is lower than industrial practice. EC requests that the proponent provide clarification on the estimation of mine rock generation and verify the estimate of the Mine Rock footprint.</p>	The approximate overburden and mine rock numbers have not changed and are correctly reported.	None.	n/a
531	CEA Agency	<p>EC-39 Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants, Table 2.1 Summary of Mine Rock Area Options Details The alternative assessment document is dated March 5, 2013 but the Draft Environmental Assessment Report is dated May 2014. In that regard, several discrepancies have been noted, namely and most importantly the fact that the conclusions of alternative assessment analysis does not reflect what is proposed in the draft EIS as the proposed MRA. For example: <ul style="list-style-type: none"> ▪ The draft EIS indicates that the mine rock and overburden will be disposed of in only one area which is a slightly different version of option 1 without options 2 and 3 that were considered in the alternative assessment analysis. ▪ On page 5-9 of the EIS (section 5.5.5.1 Mine Rock), it is stated that the mine rock and overburden will be disposed of in an estimated total area of 400 ha with an ultimate elevation of 490 masl. However, the alternative assessment document (section 2.2.1 MRA-1) states that the MRA-1 has an approximate footprint area of 372 ha with a final elevation of 481 masl and has the capacity to store 54% (240 Mm³) of the total planned mine rock production volume. The configuration and outline of MRA 1 as shown on Figure 2.1 of Appendix U1 does not match the configuration shown on Figure ES-2 in the Executive Summary. It should be noted that both MRA are almost the same in term of surface and height but seem to be quite different in storage capacity. EC requests that the proponent revisit the alternatives assessment analysis and make sure that the conclusions of the analysis are consistent with what it is proposed in the EIS documents. The proponent needs to address the discrepancies as listed in our comments.</p>	IAMGOLD is aware that through the EA process and following consultation with stakeholders the Project has been further optimized to reduce potential effects. IAMGOLD is committed to providing Environment Canada with an Alternatives Assessment Report that is compliant with regulatory requirements within the EA phase such that the streamlined approval process will apply.	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
532	CEA Agency	<p>EC-61</p> <p>Chapter 5, Appendix U3</p> <p>The report states: "During the operations phase of the Project, ore will be fed to the mill at an average rate of approximately 55,000 tonnes per day";</p> <p>"The mine life is expected to be approximately 15 years";</p> <p>"The initial evaluation recommended in-process thickened tailings (50% solids content) and it is carried forward for the options assessment."</p> <p>Given this, the total ore to be processed is calculated around 300 Mt and the tailings generation is approximately 600 Mt. However, the proponent states in Appendix U3 that "Tailings will be managed in the tailings management facility (TMF). The TMF will need to store approximately 300 million tonnes of tailings, based on current reserves".</p> <p>EC requests that the proponent provide a projection of the tailings generation over the project life (by year), including storage of TMF, water content of tailings in the TMF and height of embankments/dams, and verify the TMF footprint as well.</p>	<p>IAMGOLD is aware that through the environmental assessment process and following consultation with stakeholders the Project has been further optimized to reduce potential effects. IAMGOLD is committed to providing Environment Canada with an Alternatives Assessment that is compliant with regulatory requirements.</p> <p>The calculation provided in the comment is incorrect. Only solids would be stored in the TMF, the water would be recycled.</p> <p>Note also that the ore processing plant will be designed for 60,000 tpd. However, based on the actual size of the ore body the TMF is currently planned to be designed to hold 261 Mt of tailings.</p>	None.	n/a
533	CEA Agency	<p>EC-83</p> <p>Appendix M – Terrestrial Biology Technical Support Document, Section 2.4.1.3 – Crepuscular Bird/Owl Surveys</p> <p>In 2012, crepuscular surveys for Whip-poor-will and Common Nighthawk were conducted by Golder Associates between 9:30 pm and 3:20 am (Wildlife TSD, Att. 1, Sec. 5.8, p. 57, para. 2). Similar surveys were conducted by AMEC in 2012 following a Draft Whip-poor-will Survey Protocol obtained from the MNR District SAR biologist, although details were not provided as to the time of evening/night when the surveys started and ended (EIS, Sec. 6.4.3.1, p. 6-51, para. 5). In 2013, AMEC began surveys between 30 minutes after sunset and midnight in accordance with the specific survey protocol outlined in the Bird Studies Canada (BSC) Whip-poor-will Roadside Survey Participant's Guide (Terrestrial Biology TSD, App. I, Sec. 2.4.1.3, p. 2-7, para. 4).</p> <p>It should be noted that the BSC 2011 protocol, often used for Whip-poor-will and Common Nighthawk, is tailored more to Whip-poor-will. While the BSC 2011 protocol picks up some of the Common Nighthawk activity, it misses the peak calling/booming display activity for this species, which typically occurs starting 30 minutes before sunset, whereas the BSC protocol recommends a start time of 30 minutes after sunset (as above). Since the BSC 2011 protocol is one of the standards used by many surveyors, EC does not expect the proponent to add another field season of surveys to fortify the Common Nighthawk data set. It is also noteworthy that EC began investigating appropriate timing for Common Nighthawk monitoring in 2011, and that this work is continuing to investigate how the timing or pattern of peak calling/booming may vary geographically across Canada's boreal. Work is underway to develop an EC standard protocol for Common Nighthawk based on this recent work, which will be available in 2015.</p> <p>Work is underway to develop an EC standard protocol for Common Nighthawk based on this recent work, which will be available in 2015.</p>	The comment has been noted. No changes to the EA are required.	None.	n/a

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534	CEA Agency	<p>EC-84 EIS – Section 10.2, Table 10-1, Appendix L – Wildlife Technical Support Document, Section 2.4 and 3.2.7</p> <p>It is stated that, “Typically, clearing of vegetation will take place outside of the migratory bird nesting season (May 1 to August 1). When clearing must occur between May 1 and August 1, nest surveys will be completed by qualified individuals prior to commencing work and a mitigation/management plan will be developed in consultation with EC and the Ministry of Natural Resources (MNR) to address impacts to breeding birds.” (EIS, Sec. 10.2, Table 10-1, p. 10-24; EIS, Sec. 10.2, Table 10-1, p. 10-23; Wildlife TSD, Sec. 2.4, Table 2-3, p. 10). The migratory bird breeding season is also defined in the documentation as occurring between April 1st and July 31st, and between May 9th and August 8th (Wildlife TSD, Sec. 2.4.2, p. 25, para. 5). It is further stated that, “If water levels are altered during the breeding/nesting season, then nest searches will be completed within a week of flooding activities in the areas with potential for flooding (Wildlife TSD, Sec. 2.4, Table 2-3, p. 19). With respect to dewatering, it is stated, “If construction and dewatering activities cannot be completed outside of the breeding and nesting period of migratory birds (May 9th to August 8th), then nest surveys will be completed by qualified individuals prior to commencing construction or dewatering work.” (Wildlife TSD, Sec. 2.4.2, p. 25, para. 5).</p> <p>EC generally advises avoidance as the best approach to protecting migratory birds. The information on Incidental Take of Migratory Birds on our website has been updated with new guidance on how to determine when to clear vegetation and conduct construction activities (including flooding/dewatering work) to minimize risk to breeding migratory birds. http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=C51C415F-1</p> <p>We have also compiled core nesting periods (http://www.ec.gc.ca/paom-itmb/default.asp?lang=En&n=4F39A78F-1#_tab01) to help people get work done around the nesting period. This doesn't mean there won't be nesting birds outside of these periods, it just reduces the risk of encountering a nest. The proponent should refer to this document for the core breeding period for migratory birds in Bird Conservation Region (BCR) 8, as it differs from what is proposed.</p> <p>EC generally recommends against conducting nest searches to avoid affecting migratory birds. With the exception of a few circumstances (e.g., nests in open areas, when the birds nest on isolated trees, on man-made structures and/or in colonies),</p> <p>EC does not recommend the use of nest surveys to determine whether nests are present. The risk of disturbing nests (which is a contravention of the Migratory Birds Convention Act) is high during nest surveys. Additionally, there is a high probability of obtaining false negatives during nest surveys (i.e., a survey will determine that there are no nests present when in actuality there are nests in the surveyed habitat).</p> <p>For forested habitats, EC considers “non-intrusive searching methods”, such as using point counts placed along transects, more in line with our advice on determining whether nests are present in an area. These methods use singing territorial males as a proxy to establish whether the breeding season has started. Please refer to EC's technical document at http://ec.gc.ca/paom-itmb/default.asp?lang=EN&n=8D910CAC-1#_003 for additional details on EC's recommendations on determining the presence of nests.</p> <p>Comment continues on next page.</p>	<p>IAMGOLD has reviewed the EC website as suggested and has widened the breeding bird window to August 15th as per other recently approved projects. IAMGOLD is aware of the potential for early and late breeders in April and late August.</p> <p>In order to avoid disturbing early nesting species (e.g., nesting in April) such as raptors, a qualified biologist will examine areas that are to be cleared in April and search for active stick nests. If under unforeseen circumstances minor vegetation removal is necessary between May 1st and August 15th, non-intrusive surveys such as point counts for singing male birds will be completed by qualified individuals. If singing males are recorded then it will be assumed that a nesting female is nearby and proper Provincial and Federal species-specific nest buffers will be established around the singing male; no vegetation removal will occur within these buffers between July 1st and August 15th.</p>	<p>The terrestrial mitigation measures have been revised to widen the breeding bird window to May 1st to August 15th. A commitment is provided to use a qualified biologist to conduct non-intrusive surveys, such as point counts for singing males, if minor vegetation removal is required between May 1 and August 15th.</p>	<p>Tables ES-3, ES-4, ES-5, 10-2, 11-3, 11-4, 11-5 Appendix L, Appendix M, Appendix Y</p>

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
534 cont	See previous page.	<p>With respect to mitigation, buffers are generally only appropriate as an avoidance tool when nests are easily identified (such as nests in open areas, when the birds nest on isolated trees, on man-made structures and/or in colonies). It is unlikely that nest surveys will detect all nests and thus buffers will not be established around all nests that are actually in the habitat. In any case, EC has not developed species-specific buffers, mainly due to the differences in buffer sizes depending on the particular situation (e.g. type of nesting habitat, activities taking place in the surrounding area). Further, EC does not recommend marking active nests with flagging tape, painted lath, or other similar material as this increases the risk of nest predation.</p> <p>Finally, with respect to ongoing maintenance of the transmission line infrastructure, it is stated that, "Periodic clearing of the ROW may cause relocation of species that prefer early succession vegetation." (Wildlife TSD, Sec. 3.2.7, p. 3-51, para. 1). It should be noted that the same timing considerations to reduce the risk to breeding migratory birds during vegetation clearing associated with construction (as above), should also be applied to maintenance activities involving vegetation clearing.</p> <p>The points made in the previous column should be reflected in the EIS and relevant supporting documents.</p>	See previous page.	See previous page.	See previous page.
535	CEA Agency	<p>EC-86 Appendix L – Wildlife Technical Support Document</p> <p>Consistent with s. 79(2) of SARA, the Responsible Authority is responsible to identify, with support from the responsible jurisdiction and using best available information such as, but not limited to, action plans, recovery strategies, management plans (final or proposed versions), and COSEWIC reports, all the potential adverse effects of the project on listed wildlife species, which may be affected by the project.</p> <p>The Eastern Wolf (Special Concern) is a SARA listed species for which the proponent is to demonstrate how best to avoid or lessen all the adverse effects of the project on this species, and to monitor it.</p> <p>Eastern Wolf is managed by provincial jurisdiction; as such, it is advised to consult the Ontario Ministry of Natural Resources for their information, expertise and advice on this species.</p> <p>We advise that MNR be consulted for their information, expertise and advice on provincially regulated non-migratory bird species at risk.</p>	Eastern wolf habitat is largely defined by the diversity and abundance of prey, and habitat connectivity (MNR 2005). Habitat planning of wolf needs to consider ungulate and beaver populations, and road densities (MNR 2005). Effects from the Project on eastern wolf, moose, and beaver were assessed in Section 3.1.2.1, Section 3.1.1 and Section 3.1.2.4 in Appendix L (Wildlife TSD), respectively. IAMGOLD will consult with the MNR for information, expertise, and advice should onsite monitoring protocols identify wolf interactions warrant additional consideration and adaptive management.	None.	n/a
536	CEA Agency	<p>EC-87 Appendix L – Wildlife Technical Support Document</p> <p>Canada Warbler, Common Nighthawk and Olive-sided Flycatcher are listed as Special Concern, (Wildlife TSD, Sec. 6.0, p. 74, bullet 1), whereas they are in fact listed as Threatened under SARA.</p> <p>SARA status for Canada Warbler, Common Nighthawk and Olive-sided Flycatcher should be corrected in the Wildlife TSD and the EIS where appropriate.</p>	Species status designations provided in Appendix L (Wildlife TSD), Section 6.0, reflect the Provincial designations of these species under Ontario's <i>Endangered Species Act, 2007</i> . These designations may differ from those assigned under SARA and it is acknowledged that the Canada warbler, common nighthawk and olive-sided flycatcher are designated by SARA as threatened. The SARA designations are identified in Appendix L, Appendix D, Attachment 1.	None.	n/a
537	CEA Agency	<p>EC-88 Appendix L – Wildlife Technical Support Document</p> <p>The LSA and RSA are located in BCR 8, not 12, so some of the BCR 12 priority species, particularly those not typically occurring as far north as the LSA/RSA may not need to be analysed to the level that they have been in this version of the supporting documents.</p> <p>The project is within BCR 8, not 12, thus the bird species list contains species that may not occur this far north.</p>	Bird Conservation Region mapping included in all Ontario Partners In Flight Conservation Plans on the North American Bird Conservation Initiative website (www.nacbi.net) place the Project site and transmission line within Bird Conservation Region 12 boundaries.	None.	n/a

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538	CEA Agency	<p>EC-89</p> <p>Appendix L – Wildlife Technical Support Document</p> <p>Eastern Towhee is listed as having been observed in the LSA (Wildlife TSD, Attach. I, Sec. 5.5, p. 47, para. 5); this seems spurious, since the species would be a couple hundred kilometers north of the northernmost records from the Ontario Breeding Bird Atlas. Also suspicious is the apparent association of this species with dense coniferous forest, whereas its typical habitat is mature deciduous forest.</p> <p>Please confirm the sighting of Eastern Towhee.</p>	<p>A review of survey records indicates that one observation of the eastern towhee was recorded in a clear cut area that is characterised by sparse regeneration on June 12, 2012. This observation was recorded by a surveyor who has considerable experience with completing breeding bird surveys in the typical Southern Ontario range of the eastern towhee. However, given the eastern towhee was only recorded once in 2012 and not in 2013, that it is documented to prefer mid to late successional shrubby habitat and would be a couple hundred kilometres north of the northernmost records from the Ontario Breeding Bird Atlas it is possible that a coding error was made when recording the species observation on the field data sheet.</p>	None.	n/a
539	CEA Agency	<p>EC-90</p> <p>EIS Section 6.4.6.1</p> <p>There appears to be an error in the description of the breeding bird point count survey methodology. It is stated that, "Observers listened for 10 minutes, recording observations within 50 m, beyond 100 m and flyovers." (EIS, Sec. 6.4.6.1, p.6-72, para. 6). EC presumes the wording should be, "within 50 m, from 50 m to 100 m, and flyovers"; please confirm this methodology was used by the consultants.</p> <p>Confirm the methodology used for the breeding point count surveys.</p>	<p>The methodology description for Project point count surveys found in Section 6.4.6.1 is indeed misprinted. The proposed corrections has been made to the text.</p>	<p>The following text in Section 6.4.6.1: "beyond 100 m" has been updated to: "from 50 m to 100 m,"</p>	Section 6.4.6.1
540	CEA Agency	<p>EC-91</p> <p>EIS Section 6.4.5.2</p> <p>The description of upland coniferous forests (EIS, Sec. 6.4.5.2, p. 6-70, para. 2) should read as follows: "Upland Coniferous forests are those dominated by coniferous tree cover, but may contain deciduous trees."</p> <p>Correct description of upland coniferous forests in EIS as noted in previous column.</p>	<p>The misprinted description of upland coniferous forests has been corrected in the Amended EIS / Final EA Report.</p>	<p>The following text: "Upland Coniferous forests are those dominated by deciduous tree cover, but may contain coniferous trees." has been replaced with: "Upland Coniferous forests are those dominated by coniferous tree cover, but may contain deciduous trees."</p>	Section 6.4.5.2
541	CEA Agency	<p>EC-92</p> <p>EIS Section 6.4.5.2</p> <p>The description of wetland deciduous swamp (EIS, Sec. 6.4.5.2, p. 6-70, para. 3) should read as follows: "The wetland deciduous swamp is dominated by Trembling Aspen with Black Spruce and Balsam Poplar."</p> <p>Correct description of wetland deciduous swamp in EIS as noted in previous column.</p>	<p>The misprinted description of wetland deciduous swamp has been corrected in Section 6.4.5.2 of the Amended EIS / Final EA Report.</p>	<p>The following text: ", White Spruce, White Birch, Jack Pine and Black Ash." has been replaced with: "and Balsam Poplar."</p>	Section 6.4.5.2
542	CEA Agency	<p>EC-103</p> <p>Appendix I, Attachment I, Figure 6</p> <p>There is no legend for the red graph on Figure 6 in Appendix I, Attachment I. A legend is required to read the graph.</p> <p>Provide a legend for the red line on the graph.</p>	<p>This comment has been addressed and updated within Appendix I (Hydrology TSD).</p>	<p>Correction to Appendix I, Attachment I, Figure 6</p>	Appendix I, Attachment I, Figure 6

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
543	CEA Agency	<p>TC-1a EIS Report Table 2-1, pg 2-2</p> <p>There are no waterways at the project site that are listed in the schedule to the <i>Navigation Protection Act</i> (NPA). However, Table 2-1 of the EIS Report indicates that works require approval under the NPA. The NPA includes an "opt-in" provision that allows owners of works in navigable waterways not listed in the schedule (i.e. non-scheduled waters) to request an assessment and review of the works under NPA. If IAMGOLD wants to request to opt-in, the waterway needs to be assessed for navigability and impacts, and additional information about the proposed works (e.g. construction methodology, location of work) and waterways (e.g. current/past use) are required.</p> <p>It appears that IAMGOLD is proposing to dewater a number of waterways. It is unclear whether any of these waterways (that are being dewatered, or those others if in the case of opting-in) are navigable. Refer to the Navigation Protection Program (http://www.tc.gc.ca/eng/programs-622.html) to determine if a waterway at the project area is navigable. If any of these waterways to be dewatered/infilled are determined to be navigable, an exemption by order through the Governor in Council will be required.</p> <p>The response to this information request will assist the Agency in determining whether the project requires a federal authority to exercise a power or perform a duty or function conferred on it under any Act of Parliament and is consistent with the definition of environmental effects in CEAA 2012; specifically in relation to subsection 5(2).</p> <p>Please indicate whether or not IAMGOLD intends to "opt-in" any works in navigable waterways not listed in the schedule under NPA. If IAMGOLD will request to opt-in, provide additional information regarding which potential works (involving dewatering, depositing, and/or infilling) on which waterways would be included (i.e. dams, aerial cables, access roads, pipelines, intake and outfalls), taking into account available TK/TLU information, and consultation with other users such as cottagers, boaters, anglers and hunters. Refer to the Navigation Protection Program (http://www.tc.gc.ca/eng/programs-622.html) to determine if a waterway at the project area is navigable.</p>	<p>The Mollie River subwatershed will be realigned to divert surface water flows around the open pit and other site infrastructure. Once the realignment is complete, Mollie River will no longer flow through Côté Lake and there will be no navigable access to Côté Lake. Côté Lake, part of Mollie River, and the western portion of Three Duck Lakes (Upper) will be dewatered as part of the Project. However, navigability and the 4M Canoe Route will be maintained through the realignment channels and lakes around the Project site, as shown in Figure 1-2 of the Amended EIS / Final EA Report.</p> <p>IAMGOLD has reviewed the NPA list of scheduled waters and notes that no listed waterways are within the Project footprint. As such, IAMGOLD intends on using the 'opt-in' provision for Transport Canada's review and approval of works in navigable water, and as needed, seek Governor in Council exemption orders. IAMGOLD will work with Transport Canada during the permitting phase of the Project to provide the required information needed to support these processes.</p>	None.	n/a
544	CEA Agency	<p>TC-1b EIS Report Table 2-1, pg 2-2</p> <p>In the EIS, it appears that IAMGOLD is proposing to dewater a number of waterways. Submit a NPA Notice of Works to Transport Canada for all works involving dewatering, depositing, and/or infilling into navigable waters. To obtain the Notice form, and for other information and Q&As please visit: http://www.tc.gc.ca/eng/programs-623.html</p>	The comment has been noted. The requested notice will be submitted when the Project moves to permitting / construction phase.	None.	n/a

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545	CEA Agency	<p>TC-04</p> <p>Executive Summary, pg 36, Section 4.3.2.8, pg 4-23, Appendix O, Land and Resource Use, Appendix P, Traditional Land and Resource Use</p> <p>There are several water bodies that could be subject to the NPA, or are for sure subject to the NPA as long as they are deemed navigable. As such, decisions and more info is needed in order to determine the NPA regulatory requirements (see explanations provided by the NPP and EA groups within this table).</p> <p>Given that one of the information requirements in determining navigability is historical/past use, there may be an opportunity to utilize Traditional Knowledge and Traditional Land Use Studies to capture this type of information.</p> <p>The proponent may wish to explore whether this information could be captured in the Traditional Knowledge/Traditional Land Use Studies; otherwise, it will need to be captured in some other way. It is recommended that this be done at as early as possible in order to avoid regulatory delays in the future. This information may have a significant impact on TC's level of involvement.</p>	<p>Use of the waterways by the public and First Nations are described in Appendix O (Land and Resource Use TSD) and Appendix P (Traditional Land Use TSD). IAMGOLD is committed to keeping the existing canoe route (4M Canoe Route) navigable and open to the public.</p>	None.	n/a
546	CEA Agency	<p>TC-05</p> <p>EIS Report, Section 4.3, page 4-11</p> <p>The EIS notes that one of the goals of the consultation period between June 2013 and October 2013 is to "meet all regulatory requirements for stakeholder consultation".</p> <p>This is a potentially misleading statement, as neither TC nor the Agency have discussed NPA regulatory requirements with Aboriginal groups as yet.</p> <p>Recommend changing the statement to something like this: "meet regulatory requirements for stakeholder consultation, to the extent possible."</p>	<p>The text has been revised based on Transport Canada's suggestion.</p>	<p>Section 4.2.2 (formerly Section 4.3) has been revised from:</p> <p>"meet all regulatory requirements for stakeholder consultation" to "meet all regulatory requirements for stakeholder consultation, to the extent possible."</p>	<p>Section 4.2.2 (formerly Section 4.3)</p>
547	CEA Agency	<p>TC-07</p> <p>EIS Report, pg 9-85, Section 9.16.3</p> <p>This paragraph mentions 2 proposed works (watercourse realignments and retention dams) that could affect the common law right of navigation (in non-scheduled waters). However, there are more proposed works that could affect navigation in non-scheduled waters than just these two that are mentioned. A better list to address this comment is, for example, the list found under Section 9.16.1. So what's missing from Section 9.16.3 is: draining of Cote Lake; access road creek crossings; intake water pipes; and outflow water pipes. Also missing are works involving the depositing or throwing of materials that risk impacting navigation in navigable waterways or in any waters that flow into navigable waterways (NPA, section 22).</p> <p>Lastly, it seems that that any potential revisions to Section 9.16.3 could affect what is said (and perhaps assessed) in Section 9.17.2.</p> <p>This section needs to be expanded upon to include all proposed works that could or will affect the common law right of navigation (in non- scheduled waters).</p> <p>The proponent needs to be made aware of the opt-in clause under the NPA and they are to decide if will opt-in or not (see Tania's comments above for NPA and opt-in explanations, etc). If opting-in AND the Minister approves the opt-in request, then all non-scheduled waters affected need to be assessed for navigability by the proponent, and all info is then to be provided to Transport Canada for review and acceptance, and if accepted as navigable then an NPA approval/permit is required. So perhaps the proponent can add to this Section an explanation and their decision to 'opt-in' or not to the NPA.</p> <p>Some proposed works (the depositing/throwing/dewatering of materials in navigable waterways or in any waters that flow into navigable waterways) is subject to the NPA regardless if the proponent opts-in or not, and regardless that such waters are non-scheduled.</p>	<p>Section 9.16.3 of the Amended EIS / Final EA Report has been revised to be inclusive of any interference to navigation. IAMGOLD is aware of the 'opt-in' clause and intends to use the 'opt-in' process to have all effects on interference to navigation assessed under the <i>Navigation Protection Act</i>.</p>	<p>The following sentence:</p> <p>"Additionally, construction of watercourse realignments and retention dams in non-scheduled waters in the <i>Navigation Protection Act</i> may be subject to the common law right of navigation."</p> <p>has been revised to:</p> <p>"Additionally, Project activities which interfere with navigation in non-scheduled waters in the <i>Navigation Protection Act</i> may be subject to the common law right of navigation. IAMGOLD intends to use the 'opt-in' process to have any potential interference with navigation reviewed and sanctioned under the <i>Navigation Protection Act</i>."</p>	<p>Section 9.16.3, last sentence</p>

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548	CEA Agency	<p>TC-08 EIS Report, various sections.</p> <p>Much of what could be said by NPP and by the EA group (i.e. in terms of regulatory advice; input about project effects; input about potential effects and mitigations; etc) all depends on whether the proponent is opting in or not, and whether NPA Sections 21-23 are applicable to the project or not.</p> <p>The proponent needs to be made aware of the opt-in clause under the NPA and they are to decide if will opt-in or not (see Tania's comments above for NPA and opt-in explanations, etc). If opting-in AND the Minister approves the opt-in request, then all non-scheduled waters affected need to be assessed for navigability by the proponent, and all info is then to be provided to Transport Canada for review and acceptance, and if accepted as navigable then an NPA approval/permit is required. So perhaps the proponent can add to this Section an explanation and their decision to 'opt-in' or not to the NPA.</p>	<p>Section 9.16.3 of the Amended EIS / Final EA Report has been revised to be inclusive of any interference to navigation. IAMGOLD is aware of the 'opt-in' clause and intends to use the 'opt-in' process to have all effects on interference to navigation assessed under the <i>Navigation Protection Act</i>.</p>	<p>The following sentence: "Additionally, construction of watercourse realignments and retention dams in non-scheduled waters in the <i>Navigation Protection Act</i> may be subject to the common law right of navigation." has been revised to: "Additionally, Project activities which interfere with navigation in non-scheduled waters in the <i>Navigation Protection Act</i> may be subject to the common law right of navigation. IAMGOLD intends to use the 'opt-in' process to have any potential interference with navigation reviewed and sanctioned under the <i>Navigation Protection Act</i>."</p>	Section 9.16.3, last sentence
549	CEA Agency	<p>TC-09 EIS Report, Section 9.16.3 and possibly elsewhere</p> <p>Section 9.16.3 mentions the "<i>Navigable Waters Protection Act</i>" (NWPA). The NWPA was amended and on April 1, 2014 the <i>Navigation Protection Act</i> (NPA) came into force. The NPA includes many changes and additions, and new definitions, etc. The proponent should familiarize themselves with the NPA and how it affects the project, and the EIS report.</p> <p>Section 9.16.3 should be revised to reflect the new and correct NPA reference, and elsewhere in the EIS if applicable the NWPA should be replaced with NPA and all revisions should include revised EIS and project context/references with respect to the new act.</p>	<p>Comment noted. The EIS / Draft EA Report was issued prior to the new legislation coming into force. The Amended EIS / Final EA Report has been updated to reflect the transition from the <i>Navigable Waters Protection Act</i> to the <i>Navigation Protection Act</i>.</p>	<p>Section 9.16.3, Tables 2-1, and Table 10-1 have been updated to reflect the transition from the <i>Navigable Waters Protection Act</i> to the <i>Navigation Protection Act</i>.</p>	Section 9.16.3, Table 2-1 and Table 10-1
550	CEA Agency	<p>DFO-01 EIS Appendix N, Section 2.4.2 page 6 EIS Report Section 9, Description of Project Effects, subsection 9.9, page 9-49.</p> <p>The assessment of effects on commercial, recreational and Aboriginal (CRA) fisheries has been based on five fish species: northern pike, yellow perch, walleye, whitefish and smallmouth bass.</p> <p>Per DFO's Fisheries Protection Policy Statement (October 2013), a fish is part of a CRA fishery if federal or provincial fisheries regulations apply to it, as well as those fish that can be fished by Aboriginal organizations or their members. In Ontario, a licence is required to fish, for any species. Species other than the five identified are fished for. A licence is also required to collect baitfish. Therefore, all species in the Côté Lake study area are part of a CRA fishery and the potential effects of the proposed project on all species needs to be understood.</p> <p>If using a few species as a surrogate for evaluating the impacts on all fish that are part of or support a CRA fishery, the fish chosen must be representative of all the fish species found in the Côté Lake study area, i.e. they represent the same habitat requirements, food requirements, life histories, etc.</p> <p>Provide a rationale as to how the chosen fish species are representative of all fish species in the Côté Lake study area. If those five species are not representative of all species, add other species for the effects assessment.</p>	<p>The fish communities within stream and lake habitats in the study area are generally dominated by northern pike (<i>Esox lucius</i>) and yellow perch (<i>Perca flavescens</i>). Walleye (<i>Sander vitreus</i>), white sucker (<i>Catostomus commersonii</i>) and lake whitefish (<i>Coregonus clupeaformis</i>) were also common and varied in abundance depending on lake habitat. Smallmouth bass (<i>Micropterus dolomieu</i>) and burbot (<i>Lota lota</i>) were only present in a few lakes, but were found in both watersheds that will be affected. In addition to these species, fifteen small-bodied species were also identified. Based on this information, it is proposed that northern pike, yellow perch, lake whitefish, walleye and smallmouth bass be evaluated as key species as it is assumed that these species requirements will cover the gamut of habitat required for the remaining fish community (both large and small bodied fish) within the affected area (see habitat offsetting assessment methods in the Addendum to Appendix N; Aquatic Biology TSD).</p> <p>In addition, the habitat requirements of forage fish is described together with a description of the existing habitat for these species in each water body assessed (see Aquatic Baseline Report; Appendix N, Appendix C). In the impact assessment, the protection of forage fish is also indirectly addressed through the assessment of water quality to a standard that meets the protection of fish and aquatic life; and the assessment of loss of habitat which incorporates habitat for both sport and forage fish.</p>	<p>A habitat evaluation procedure has been added to the Addendum to Appendix N (Aquatic Biology TSD).</p>	Addendum to Appendix N

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551	CEA Agency	<p>DFO-02 EIS Appendix N, Table 2.1, and page 19</p> <p>Section 4 (Prediction of Effects) of Appendix N (Aquatic Technical Support Document) indicates that “project activities with the potential to affect sport fish within the LSA were considered relative to the assessment indicators”. The assessment should not be limited to sport fish. As in comment DFO-01 above, the assessment should be on fish that are part of, or support, a commercial, recreational or Aboriginal fishery. The basis for a recreational fishery is described above in comment DFO-01. Section 6 of the EIS (Description of the Environment), pages 6-124 and 6-125, indicate species that are harvested by or considered important to First Nations and Métis. These species are found in the Côté Lake study area.</p> <p>None – this should be covered by the Information Requested under comment DFO-01.</p>	<p>It is noted that the sentence in Section 4 (Prediction of Effects) in Appendix N (Aquatic Biology TSD) should state that Project activities with the potential to affect a commercial, recreational or Aboriginal fishery within the LSA...” and not “Project activities with the potential to affect sport fish within the LSA...” The sentence has been changed in Appendix N (Aquatic Biology TSD).</p>	<p>Section 4 of the Appendix N (Aquatic Biology TSD) has been updated to include wording provided by DFO.</p>	<p>Appendix N (Aquatic Biology TSD), Section 4</p>
552	CEA Agency	<p>DFO-05 EIS Report Section 9.9.2.1, page 9-53, EIS Report Section 10 Table 10-2 page 10-18, EIS Report Section 11 Table 11-6, EIS Appendix N Table 3.1</p> <p>Impacts from blasting in the open pit may affect fish habitat and spawning in the adjacent Clam Lake (south basin) during construction and the early years of operation. In the report, the area is described as deep (profundal) and as providing limited spawning habitat for resident fish, with the dominant fish identified as smallmouth bass with an abundance of spawning habitat for that species available. The report indicates effects are determined to be likely limited to individuals and not result in a community or population level effect.</p> <p>This effect is not included in the Impact Assessment Matrix, Table 11-6. However it is included in the “Mitigation Measures – Biological Environment Table 10-2” where it is indicated that the effects to spawning habitat within 238.5 m of the open pit will be included in the fish habitat offsetting (compensation) plan.</p> <p>This impact should be in the Impact Assessment Matrix, Table 11-6 if it has been identified as an effect requiring mitigation.</p> <p>Burbot are present in Clam Lake, as indicated in Table 3.1: Summary of fish species presence/absence in Côté Gold area lentic (lake) habitat. Burbot are sensitive to noise, as they use vocalizations during spawning. As indicated in comment DFO-01, above, Burbot are a fish that are part of, and support, a CRA fishery. Should blasting impact their spawning over a period of several years there is the potential for impacts to productivity.</p>	<p>See responses to Comments #486 and 491.</p>	<p>None.</p>	<p>n/a</p>
553	CEA Agency	<p>DFO-06 EIS Appendix N, page 22 and Table 4.8</p> <p>It is indicated that implementing the offsetting measures, being the watercourse realignments as well as other associated changes to existing water bodies, will result in only a minimal loss of habitat within the LSA. It is noted that this should not affect fish productivity.</p> <p>Per DFO’s “Fisheries Productivity Investment Policy”, benefits from offsetting measures must balance project impacts. It is not clear in the EIS if impacts are being fully counterbalanced by offsetting measures.</p> <p>It is recognized that impacts may be fully offset by the proposed channel realignments if a different approach is taken in calculating the losses and gains, such as the use of Habitat Units or some measure of productivity, however as it is currently portrayed in the EIS, a loss of habitat has been identified with no supporting information to demonstrate that the impacts of fisheries productivity is in fact fully offset by gains to productivity.</p> <p>Provide an offsetting plan that demonstrates, at a conceptual level at minimum, that losses of fisheries productivity will be fully offset by gains in productivity.</p>	<p>See response to Comment #487c). The decreased functioning of the constructed habitat in the first year will be factored into the offsetting plan. It is anticipated that lag times will be greatly reduced through the transplanting of vegetation, benthic invertebrates and forage fish, which will expedite the establishing of compensatory habitat.</p>	<p>None.</p>	<p>n/a</p>

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554	CEA Agency	<p>DFO-07 Appendix N, page 19 and Table 4.1</p> <p>It is anticipated that watercourse realignments and habitats that are constructed prior to mine operations may not be fully functional by the time the serious harm to fish occurs. It is anticipated that watercourse realignments and habitats that are constructed prior to mine operations may not be fully functional by the time the serious harm to fish occurs.</p> <p>When evaluating whether proposed offsetting measures fully offset serious harm to fish, the lag time in the functioning of the offsetting measures should be factored in to the offsetting plan. This may require creation or enhancement of additional habitat to offset the potential loss of productivity until the constructed habitats are fully functioning.</p> <p>As part of the request in comment DFO-07, ensure that the decreased functioning of the constructed habitat in the first year been factored into the offsetting plan.</p>	See response to Comment #487c). The decreased functioning of the constructed habitat in the first year will be factored into the offsetting plan. It is anticipated that lag times will be greatly reduced through the transplanting of vegetation, benthic invertebrates and forage fish, which will expedite the establishing of compensatory habitat.	None.	n/a
555	CEA Agency	<p>DFO-08 EIS Appendix N pages 7,9, & 19</p> <p>Fish are to be collected and relocated from habitats that will be lost due to development of the mine. Fish are to be relocated to newly constructed habitats which connect various existing waterbodies. It is anticipated that some fish will be lost and not relocated.</p> <p>More information is required to assess the impacts of the relocation and loss of fish. Why is it anticipated that some fish will not be able to be relocated; is there a specific species or size of fish that is expected to be difficult to capture or relocate? How many fish are estimated to be lost? What are the impacts of the fish relocations on existing fish populations in the waterbodies connected to the constructed habitats?</p>	See response to Comment #488.	None.	n/a
556	CEA Agency	<p>DFO-10 EIS Appendix N page 23, EIS Section 10 Table 10-2 page 10-19</p> <p>Reductions in flows to Bagsverd Creek are anticipated to begin during operations and remain in perpetuity. Fish habitat may be impacted. It is proposed to survey the stream morphology prior to construction to assess the potential for exposure of habitat and barriers to fish passage. Then, if required, the mitigation proposed is to modify the stream bed to ensure an adequate depth of water for fish to utilize habitat and allow for fish passage.</p> <p>Without defining the impact, it is unknown whether the proposed mitigation will be effective and whether it will completely offset the serious harm to fish.</p> <p>Provide a detailed analysis of the impacts to Bagsverd Creek as well as downstream (for example what will be the impacts to Neville Lake). Provide an analysis of the feasibility of the proposed mitigation, indicating whether the mitigation will fully offset the impacts. When considering hydrology and impacts to fish habitat, use seasonal flows (as, for example, impacts to fish passage and habitat may be exaggerated at low flows), rather than the current approach which uses the average annual flow. Also, ensure that this is discussed in the offsetting plan (as in comment DFO-07).</p>	See response to Comment #489.	None.	n/a

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557	CEA Agency	<p>DFO-13 EIS Appendix I Section 1.1.7 Page 4</p> <p>Channel realignments are to be constructed to provide fish habitat as offsetting for serious harm to fish. Upon mine closure, some channel realignments are to be changed to restore surface water flow paths similar to pre-development conditions.</p> <p>Indicate whether the watercourse realignments to be decommissioned upon mine closure are those that are to be constructed with fish habitat features as part of the Offsetting Plan. If habitat created as offsetting is to be destroyed or permanently altered upon mine closure, then include how this subsequent loss of fish habitat will be offset in the Offsetting Plan (referenced in comment DFO-06).</p>	<p>See response to Comment #487b). It is expected that the any loss of habitat associated with the decommissioning of watercourse realignments will be off set with the establishment of former watercourse connections. Specifically:</p> <ul style="list-style-type: none"> ▪ the reconnection of Clam Lake to the pit lake through the re-establishment of Clam Creek.; ▪ the development of the pit lake, and ▪ the establishment of an outlet channel from the pit lake to Upper Three Ducks Lake. <p>These changes will not be considered in the off-setting plan being developed but will need to be approved under a separate <i>Fisheries Act</i> Authorization following the closure phase and confirmation of pit filling plans and timelines.</p>	None.	n/a
558	CEA Agency	<p>DFO-14 EIS Appendix I Table 4.2 Table 4.3 Table 4.4 Table 4.5, EIS Appendix N page 10</p> <p>Some watercourses will experience an increase in flows greater than 100% of the pre-development flow. These watercourses are not all identified as the constructed watercourse realignments. It is noted the constructed alignments will be designed for the expected flow, however the impacts of increased flows to the existing watercourses (for example, Un-named Lake #2 Outflow) is not evaluated, and mitigation is not proposed. The Aquatic Biology section of the EIS indicates that predicted changes in water flow have been considered in the assessment of potential effects to fish habitat, however the only water flow changes assessed in Table 4.1 are the changes to Bagsverd Creek (as above in comment DFO-10).</p> <p>Evaluate the impacts to fish and fish habitat arising from increased flows from mine activities, including impacts related to increased erosion and sedimentation, high flows as a barrier to fish migration, and direct changes to habitat. Propose mitigation for potential impacts to fish and fish habitat, and if offsetting is required, include this in the Offsetting Plan.</p>	See response to Comment #489 b).	None.	n/a

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559	CEA Agency	<p>EC-76 EIS Report, Section 10.2 Mitigation Measures and Table 10-1 pg. 10-1 to 10-9, Appendix F - Air Quality Technical Support Document Section 6, Appendix V GHG Assessment Report.</p> <p>In EC's review of the proposed mitigation measures for air quality and greenhouse gases (GHGs), we feel that the proponent has provided some information and EC agrees with the proponent's commitment to develop a dust best management plan (DBMP) and other mitigation plans (GHG and Vehicle maintenance), but no details are provided in terms of: objectives to be achieved through air quality mitigation measures; listing of methods to be applied and the conditions that trigger mitigation measures; frequency and record keeping to demonstrate adoption of actions; and best management plan for fugitive dust and planning measures aimed at reducing fuel and power consumption for the site.</p> <p>The proponent should be advised that compliance with the following regulations and code of practice will help to ensure that emissions are reduced throughout all phases of the project:</p> <p>Vehicle and fuel regulations addressing air pollutants and GHGs:</p> <ul style="list-style-type: none"> ▪ On-road vehicle and engine regulations that establish maximum levels for a number of pollutants including particulate matter and ozone precursors such as NO_x and VOCs: ▪ On-Road Vehicle and Engine Emission Regulations: http://laws-lois.justice.gc.ca/eng/regulations/SOR-2003-2/index.html ▪ Off-road diesel engine emission regulations that also control these air pollutants. These have been recently updated to align with US EPA's Tier 4 regulations: ▪ Off-Road Compression Ignition Engine Emission Regulations: http://laws-lois.gc.ca/eng/regulations/SOR-2005-32/index.html ▪ Sulphur in gasoline and in diesel regulations are in place that ensure that the fuel will not impede the effective operation of advanced emissions control technologies installed on vehicles and engines (technologies such as particulate filters): ▪ Sulphur in Gasoline Regulations: http://laws-lois.gc.ca/eng/regulations/SOR-99-236/index.html ▪ Sulphur in Diesel Fuels Regulations: http://laws-lois.gc.ca/eng/regulations/SOR-2002-254/index.html ▪ Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations, SOR/2010-201; 74, aligned with the US, setting progressively stricter GHG emissions standards for 2011-2016 model years: ▪ http://laws-lois.gc.ca/eng/regulations/SOR-2010-201/index.html ▪ Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations, SOR/2013-24, apply to 2014 and later model years: http://laws-lois.gc.ca/eng/regulations/SOR-2013-24/index.html ▪ - Renewable Fuels Regulations, SOR/2010-189; http://laws-lois.gc.ca/eng/regulations/SOR-2010-189/index.html ▪ - Management practices for reducing emissions from mine fleet equipment including compliance with EC's off-road diesel engines regulations and use of tier 4 technologies and engine operation and maintenance guidelines as per EC's Environmental Code of Practice for Metal Mines (2009). ▪ http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=CBE3CD59-1 <p>Comment continues on next page.</p>	<p>The various regulations and Codes of Practice are acknowledged and will be followed by the site</p> <p>The Provincial ECA for mining operations will require a fugitive dust best management practices plan as a condition of approval to ensure that all fugitive dust sources are identified and appropriate mitigation measures implemented, and tracked</p> <p>The fugitive dust best management practices plan will be submitted to MOECC for approval as part of the ECA application package; a copy of the fugitive dust best management practices plan will be provided to Environment Canada at this time.</p>	None.	n/a

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559 cont	See previous page.	<ul style="list-style-type: none"> ▪ The following guidance document prepared for EC by ChemInfo Services is a valuable source of information on air quality mitigation (for example on the use of water and dust suppressants to mitigate fugitive dust from site preparation, storage piles, unpaved roads, etc.): ▪ "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities" (ChemInfo, 2005). ▪ A copy of this document can be provided to the proponent if requested. <p>EC recommends that the proponent incorporate the regulations and code of practice, stated in previous column into their Best Management Plan for dust (DBMP), GHG emission plan, Engine Maintenance Program and other mitigation actions. EC requests that they then submit the BMP or other mitigation plan documents for review to EC and other regulatory agencies prior to commencing work for the construction phase.</p>	See previous page.	See previous page.	See previous page.
560	MOECC - EASS	<p>EAS -1</p> <p>Chapter 1.0 Introduction and Project Overview, Section 1.3: Project Components p. 1-4</p> <p>Section 1.3 states that a preliminary schedule for the development of the proposed Project has the construction phase commencing after completion of the coordinated Federal and Provincial environmental assessment (EA) process and feasibility study.</p> <p>The proposed Project construction can only begin when IAMGOLD obtains all necessary permits and approvals for the site.</p> <p>Please revise this sentence accordingly to indicate that construction can only begin after necessary permits and approvals are obtained for the proposed Project. Also indicate that permits and approvals cannot be issued until approval under the EAA is granted.</p>	Agreed. The EA document has been revised accordingly.	<p>The following sentence:</p> <p>"A preliminary schedule for the development of the Project has the construction phase commencing after completion of the coordinated Federal and Provincial environmental assessment (EA) process and the feasibility study which is scheduled to be completed early 2016."</p> <p>has been reworded to:</p> <p>"A preliminary schedule for the development of the Project has the construction phase commencing after completion of the coordinated Federal and Provincial environmental assessment (EA) process, and IAMGOLD has obtained the necessary approvals."</p>	Section 1.3, last paragraph, first sentence
561	MOECC - Environmental Approvals Branch	<p>EAS -2</p> <p>Chapter 1.0 Introduction and Project Overview, Section 1.5: Land Ownership p. 1-7</p> <p>Section 1.5 states that additional land deals are being negotiated at of the time of the submission of the Draft EA document.</p> <p>The EA should be open and transparent by ensuring that information is being shared with all interested persons to support IAMGOLD's decisions for the proposed Project.</p> <p>Please ensure that the final EA document is updated to reflect the ongoing negotiations since the time of the submission of Draft EA.</p>	The Amended EIS / Final EA Report has been revised to more accurately reflect the status of land negotiations.	Section 1.5, third paragraph has been revised to state:	Section 1.5, third paragraph

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562	MOECC - Environmental Approvals Branch	<p>EAS-3</p> <p>Chapter 1.0: Introduction and Project Overview, Section 1.6: EA Document Organization and Content p. 1-8</p> <p>Section 1.6 states that the document is intended to provide sufficient information for the Ontario Minister of the Environment to approve the proposed Project pursuant to the Ontario <i>Environmental Assessment Act</i>.</p> <p>The EA document must be prepared in accordance with the approved ToR and the requirements of the EAA in order for the Minister to give approval to proceed with the proposed Project.</p> <p>Please revise this section to clearly state that the document is intended to provide information in accordance with the approved ToR and the requirements of the EAA.</p>	<p>The first sentence in the second paragraph of Section 1.6 will be revised to clearly state that the EA report was prepared in accordance with both the EIS guidelines and the Approved ToR.</p>	<p>The following text has been added to Section 1.6:</p> <p>"... and requirements for this EA report and have been prepared in accordance with these documents."</p>	<p>Section 1.6, second paragraph, first sentence</p>
563	MOECC - Environmental Approvals Branch	<p>EAS-4</p> <p>Chapter 2: Regulatory Framework, Section 2.2: Provincial Environmental Approvals p. 2-2</p> <p>Table 2-2 provides a preliminary listing of Provincial approvals anticipated to be required for the proposed Project. What about approvals from Electrical Safety Authority, Independent Electricity System Operator, Hydro One and the federal government?</p> <p>The EA document should include all information that is available and provide an appropriate level of detail. The proponent is required to specify all approvals that may be required after the EA process is completed.</p> <p>Please update this table to include all permits and approvals that are required for the proposed Project.</p>	<p>Following discussions with the MOECC on Aug 12, 2014, Tables 2.1 and 2.2 of the Amended EIS / Final EA Report have been revised to also include Federal and Provincial environmental approvals associated with the transmission line.</p>	<p>Additional Federal and Provincial approvals related to transmission line construction have been added to Chapter 2.</p>	<p>Chapter 2, Tables 2-1 and 2-2</p>
564	MOECC - Environmental Approvals Branch	<p>EAS-5</p> <p>Chapter 2: Regulatory Framework, Section 2.4: Other Regulatory Aspects</p> <p>This section states that an Impact Benefit Agreement is currently being negotiated with the Wabun Tribal Council and a Memorandum of Understanding is also being currently negotiated with the Métis Nation of Ontario.</p> <p>As the proponent moves through the EA process, the final EA document should be revised to reflect any changes and or updates to these negotiations.</p> <p>Please revise the EA document as appropriate to include any new information.</p>	<p>Chapter 2 and Chapter 4 of the Amended EIS / Final EA Report have been revised to reflect the status of Aboriginal negotiations at the time of Amended EIS / Final EA Report submission.</p>	<p>Updated Chapter 2 and Chapter 4 to reflect the status of Aboriginal negotiations at submission of the Amended EIS / Final EA Report.</p>	<p>Chapter 2, Chapter 4, Section 4.5.2.3</p>
565	MOECC - Environmental Approvals Branch	<p>EAS-6</p> <p>Chapter 4.0: Consultation Summary</p> <p>Please refer to our Codes of Practice: Consultation in Ontario's Environmental Assessment Process as a resource for consultation in the EA process. Specific comments relating to the Consultation Summary section are addressed below.</p>	<p>The comment has been noted and specific comments below have been addressed.</p>	<p>None.</p>	<p>n/a</p>

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
566	MOECC - Environmental Approvals Branch	<p>EAS-7</p> <p>Chapter 4:0 Consultation Summary, Section 4.1: Overview p.4-1</p> <p>This section states that an important part of the proposed Project permitting and planning process is proactive consultation with potentially affected and interested stakeholders, Aboriginal communities and government agencies.</p> <p>The EA document needs to clearly state that one of the key requirements of the EAA is pre-submission consultation completed during the preparation of the EA. Public consultation and Aboriginal community engagement are required to meet the Federal and Provincial requirements as outlined in the Stakeholder Consultation Plan and Aboriginal Consultation Plan in the Terms of Reference.</p> <p>Please consider revising this section to make it clear to the reader that consultation and engagement undertaken by the proponent for the proposed Project is a key requirement of the EAA and as outlined in the Plans prepared for the ToR.</p>	<p>The text has been revised to clarify that prior to submission of the Amended EIS / Final EA Report proactive consultation with potentially affected and interested stakeholders, Aboriginal communities and government agencies is key a requirement of the <i>Environmental Assessment Act</i>.</p> <p>IAMGOLD notes that the preparation and consultation on the EIS / Draft EA Report fulfils this requirement of the approved ToR.</p>	Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).	Chapter 4 and Appendix D
567	MOECC - Environmental Approvals Branch	<p>EAS-8</p> <p>Chapter 4.0: Consultation Summary, Section 4.2: Identification of Stakeholders and Aboriginal communities Groups, Section 4.3: Consultation Activities p. 4-3 to 4-10</p> <p>This section of the EA document separates the consultation activities in two different timeframes: June 2012 to June 9, 2013 and June 10, 2013 to October 15, 2013.</p> <p>Not sure why IAMGOLD has decided to structure their consultation efforts in this manner? This creates confusion for the reader. Consider grouping consultation efforts and associated information sharing by EA regulatory milestones, for example: proposed Project description, commencement of ToR, submission of ToR, Commencement of EA, and submission of EA.</p> <p>Consultation and engagement documented in this section of the EA document should cover the time period between submission of the final ToR (date) through to (date) submission of the draft EA, and update as appropriate prior to final EA submission. Consultation that took place in the earlier EA stages would be already described and/or summarized in detail as part of the Record of Consultation for the ToR.</p> <p>The EA document must provide a comprehensive description of the consultation activities that took place during the preparation of the EA. The description of the consultation activities should be clearly communicated in the EA document.</p> <p>Please consider re-structuring this section of the EA to better describe what consultation activities took place from the time the final ToR was submitted to submission of the draft EA document.</p>	Chapter 4 has been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).	Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).	Chapter 4 and Appendix D
568	MOECC - Environmental Approvals Branch	<p>EAS-9</p> <p>Chapter 4.0: Consultation Summary, Section 4.3: Consultation Activities p. 4-11</p> <p>This section states that in preparation of the Draft EA, between June 10, 2013 and October 15, 2013, IAMGOLD consulted with stakeholders, Aboriginal communities groups and government agencies in a variety of ways. Please confirm the dates above are correct. The ToR was approved on January 14, 2014. IAMGOLD should clarify if consultation prior to an approved ToR was for the purposes of information sharing and on the draft ToR. Consultation on the EA begins after ToR approval.</p> <p>An approved ToR becomes the framework for the preparation and review of the EA.</p> <p>Please consider adding text to clarify.</p>	IAMGOLD has revised Chapter 4 to better describe the consultation activities that occurred prior to and following approval of the ToR.	Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).	Chapter 4 and Appendix D

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
569	MOECC - Environmental Approvals Branch	<p>EAS-10</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.1.1: Meetings, Presentations and Interviews p. 4-12</p> <p>Table 4-2 outlines stakeholder meetings and presentations since June, 2012 to October 15, 2013. IAMGOLD does not need to summarize the consultation that was completed prior to ToR approval as this information is already detailed and described in the Record of Consultation for the ToR. This creates confusion for the reader. Consider grouping consultation efforts and associated information sharing by EA regulatory milestones, for example: proposed Project description, commencement of ToR, submission of ToR, Commencement of EA, and submission of EA.</p> <p>For the first bullet, in the third column of Table 4-2, it states that a meeting was held on May 3, 2012; however, the time period is June 2012 to June 9, 2013.</p> <p>The EA document must provide a comprehensive description of the consultation activities that took place during the preparation of the EA. The description of the consultation activities should be clearly communicated in the EA document.</p> <p>Please re-structure this section of the EA to better describe what consultation activities took place from the time the final ToR was submitted to the ministry for approval to submission of the draft EA.</p> <p>Please review dates and revise accordingly.</p>	<p>While IAMGOLD has made efforts, to the extent practicable, to coordinate the Federal and Provincial processes, the key milestones in these processes are divergent in some respects. However, for readability of Chapter 4, IAMGOLD has divided key consultation activities into two main time periods which coincide with EA milestones in the Provincial process: pre-ToR Approval (June 2012 – January 14, 2014), and during EA preparation (January 15, 2014 – September 30, 2014).</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
570	MOECC - Environmental Approvals Branch	<p>EAS-11</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.1.5: Newsletters p. 4-15</p> <p>The section states that between June, 2013 and June 9, 2013, IAMGOLD prepared and distributed one community newsletter in March 2013.</p> <p>The EA document must provide a comprehensive description of the consultation activities that took place during the preparation of the EA. The description of the consultation activities should be clearly communicated in the EA document.</p> <p>Please review dates and revise accordingly.</p> <p>Please consider re-structuring this section of the EA document to better describe what consultation activities took place from the time the final ToR was submitted to submission of the draft EA.</p>	<p>Chapter 4 has been updated to include all consultation activities up to September 30, 2014. Information about all "Let's Talk" community newsletters is located in Section 4.4.1.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
571	MOECC - Environmental Approvals Branch	<p>EAS-12</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.1.5: Newsletters p. 4-15</p> <p>This section states that IAMGOLD is working on developing a Fall (2013) newsletter that will be distributed in the first of week of November 2013. Was this newsletter distributed?</p> <p>The EA document must provide a comprehensive description of the consultation activities that took place during the preparation of the EA. The description of the consultation activities should be clearly communicated in the EA document.</p> <p>The EA should provide a summary of the consultation that took place since the ToR was approved. Details of consultation prior to ToR submission would have been summarized and recorded as part of the ToR.</p> <p>Please update this section of the EA document to summarize the consultation during the development of the draft EA.</p>	<p>Chapter 4 has been updated to include all consultation activities up to September 30, 2014. Information about all "Let's Talk" community newsletters is located in Section 4.4.1.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
572	MOECC - Environmental Approvals Branch	<p>EAS-13</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.1.7: Factsheets p. 4-16</p> <p>This section states that IAMGOLD prepared three factsheets in preparation of the draft EA (June 10, 2013 to October 15, 2013). This may be confusing to the reader considering that the ToR was only approved in January 2014.</p> <p>The EA planning process and development of the draft EA commences after ToR approval.</p> <p>Please review and revise accordingly to include consultation efforts that took place following submission of the final ToR.</p>	<p>Chapter 4 has been updated to include all consultation activities up to September 30, 2014. Information about all Project fact sheets is located in Section 4.4.2.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
573	MOECC - Environmental Approvals Branch	<p>EAS-14</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.1.9: Media Engagement p. 4-17</p> <p>This section states that further details regarding engagement with the media can be found in Appendix D10. Could not locate media correspondence in Appendix D10.</p> <p>The proponent must ensure that the EA document includes complete documentation.</p> <p>Please include correspondence with media outlets in the Appendices or please make it more easily accessible if information is already included in the appendices.</p>	<p>The Amended EIS / Final EA Report has been revised to remove discussion of this media engagement activity. Upon review, it was determined that this activity is not relevant for discussion in the EA. Media correspondence is therefore not included with Appendix D (RoC).</p>	<p>Section 4.3.1.9 (Media Engagement) has been removed.</p>	Chapter 4
574	MOECC - Environmental Approvals Branch	<p>EAS-15</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.2.1: Community Leadership Meetings p. 4-18</p> <p>This section states that in preparation of the draft EA (June 10, 2013 to October 15, 2013), the goals of consultation with community leaders were: for IAMGOLD to respond to comments on the draft ToR: collect information to support the Baseline Studies and Traditional Knowledge and Land Use studies; and to provide a preliminary presentation on the proposed Project's effects prediction and receive feedback on proposed mitigation strategies.</p> <p>This statement is confusing to the reader and the EA process being followed by the proponent. Does IAMGOLD mean to say that in preparation of the draft ToR?</p> <p>The EA planning process and development of the draft EA commences after ToR approval. The proponent must ensure that the EA represents accurately the planning and decision-making process that was followed and must communicate that clearly in the EA document. The process followed by the proponent should be clear, rational and logical.</p> <p>Please consider revising the text to explain clearly the consultation process that was followed for the proposed Project.</p>	<p>IAMGOLD has revised Chapter 4 to better describe the consultation activities that occurred prior to and following approval of the ToR. Meetings with Aboriginal communities pre-EA preparation are located in Section 4.5.1.1 and meetings during EA preparation are located in Section 4.5.2.1.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
575	MOECC - Environmental Approvals Branch	<p>EAS-16</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.2.1: Community Leadership Meetings p.4-19</p> <p>In Table 4-4: Community Leadership Meetings, the Meeting Details column does not correlate accurately with the Time Period column, for example the time period says from July, 2012 to June 9, 2013, yet there was a meeting in May 9, 2012?</p> <p>Please review dates and revise accordingly.</p>	<p>IAMGOLD has revised Chapter 4 to better describe the consultation activities that occurred prior to and following approval of the ToR. Meetings with Aboriginal communities pre-EA preparation are located in Section 4.5.1.1 and meetings during EA preparation are located in Section 4.5.2.1.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D

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576	MOECC - Environmental Approvals Branch	<p>EAS-17</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.2.3: Aboriginal communities Community Open Houses and Presentations p. 4-21</p> <p>This section states that IAMGOLD is committed to ensuring meaningful consultation engagement, and will follow-up with these communities leaderships suggestion to host an open house in the Winter of 2014. Did IAMGOLD host an open house in 2014?</p> <p>The proponent must ensure that the EA document includes complete and up to date record of its consultation efforts up until submission of the Draft EA document.</p> <p>Please update this section of the EA document to summarize the consultation during the development of the EA, including updating the Record of Consultation.</p>	<p>IAMGOLD hosted a series of open houses in June 2014 for consultation on the EIS / Draft EA Report. The Amended EIS / Final EA Report has been revised accordingly. A listing of all Project open houses is located Section 4.4.4.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
577	MOECC - Environmental Approvals Branch	<p>EAS-18</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.2.6: Newsletters p. 4-22</p> <p>In this section, it states that IAMGOLD has also been working on developing a Fall (2013) newsletter that will be distributed in the first week of November, 2013. Did this happen? Why is this section not updated given that the draft EA was only submitted to the ministry in June 2014?</p> <p>The proponent must ensure that the EA document includes complete and up to date record of its consultation efforts up until submission of the Draft EA document.</p> <p>Please update this section of the EA document to summarize consultation during the development of the EA, including updating the Record of Consultation.</p>	<p>Chapter 4 has been updated to include all consultation activities up to September 30, 2014. Information about all "Let's Talk" community newsletters is located in Section 4.4.1.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
578	MOECC - Environmental Approvals Branch	<p>EAS-19</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.2.10: Impact Benefit Agreement Negotiations p. 4-24</p> <p>In this section it states that during the early phases of the proposed Project, IAMGOLD initiated Impact Benefit Agreement negotiations with the communities of Mattagami First Nation and Flying Post First Nation. Any updates since 2013?</p> <p>The proponent must ensure that the EA document includes complete and up to date record of its consultation efforts up until submission of the EA.</p> <p>Please update this section of the EA document to summarize consultation during the development of the EA, including updating the Record of Consultation.</p>	<p>Negotiations on the impact and benefit agreement between IAMGOLD, Mattagami First Nation and Flying Post First Nation are ongoing. The EA and RoC have been revised as appropriate.</p>	<p>Chapter 4 of the Amended EIS / Final EA Report has been restructured to describe consultation activities following approval of the ToR.</p> <p>Information about the status of agreements is presented in Sections 4.5.1.4 and 4.5.2.3.</p>	Chapter 4
579	MOECC - Environmental Approvals Branch	<p>EAS-20</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.2.11: Youth and Elder Discussions Groups p. 4-25</p> <p>This section states that IAMGOLD remains committed to consulting with these stakeholders about the proposed Project, and an effort will be made to engage and consult with these groups as part of the upcoming consultation on the draft EA. Any updates since October 15, 2013?</p> <p>The proponent must ensure that the EA document includes complete and up to date record of its consultation efforts up until submission of the Draft EA/Final EA document.</p> <p>Please update this section of the EA document to summarize consultation during the development of the EA, including updating the Record of Consultation.</p>	<p>IAMGOLD hosted a youth and elder workshop in May 2014. Details of the workshop can be found in Section 4.5.2.4 and in the Appendix D (RoC). The Amended EIS / Final EA Report and Appendix D (RoC) have been revised accordingly.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D

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580	MOECC - Environmental Approvals Branch	<p>EAS-21</p> <p>Chapter 4.0: Consultation Summary, Section 4.3.3.1: Meetings and Presentations p. 4-26</p> <p>This section states the focus of the meetings was to provide information to the government agencies regarding the draft PD and the draft ToR, and to ensure that IAMGOLD is preparing the EA in compliance with all Federal and Provincial regulatory processes and requirements. It is unclear to the reader the planning process followed by IAMGOLD.</p> <p>The Terms of Reference becomes the framework for the preparation and review of the EA.</p> <p>Please clarify that the focus of the meetings early on, was about information sharing with government agencies and to ensure that the draft ToR would be prepared in compliance with regulatory processes and requirements.</p> <p>Please update this section of the EA document to summarize consultation during the development of the EA, including updating the Record of Consultation.</p>	Comment noted. Chapter 4 has been reviewed and revised accordingly.	Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).	Chapter 4 and Appendix D
581	MOECC - Environmental Approvals Branch	<p>EAS-22</p> <p>Chapter 4: Consultation Summary, Section 4.3.3.1: Meetings and Presentations p. 4-27</p> <p>In Table 4-5: Government Agency Meetings and Presentations, the dates in the Time Period column do not correlate with the dates in the Meeting Details column.</p> <p>The proponent must ensure that the EA represents accurately the planning and decision-making process that was followed and must communicate that clearly in the EA document. The process followed by the proponent should be clear, rational and logical.</p> <p>Please review and revise dates accordingly to reflect the consultation efforts during the development of the EA.</p>	Comment noted. Chapter 4 has been reviewed and revised accordingly.	Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).	Chapter 4 and Appendix D
582	MOECC - Environmental Approvals Branch	<p>EAS-23</p> <p>Chapter 4: Consultation Summary, Section 4.3.3.1: Meetings and Presentations p. 4-27</p> <p>This section states that in preparation of the draft EA (June 10, 2015 to October 15, 2013), IAMGOLD also conducted interviews with, and requested information from local government agency representatives to support data collection for the baseline studies. It is unclear why the draft EA was being prepared prior to ToR approval?</p> <p>The proponent must ensure that the EA represents accurately the planning and decision-making process that was followed and must communicate that clearly in the EA document. The process followed by the proponent should be clear, rational and logical. The Terms of Reference becomes the framework for the preparation and review of the EA.</p> <p>Please revise this section of the EA document to summarize consultation during the development of the EA, including updating the Record of Consultation.</p>	Comment noted. Chapter 4 has been reviewed and revised accordingly.	Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).	Chapter 4 and Appendix D

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583	MOECC - Environmental Approvals Branch	<p>EAS-24</p> <p>Chapter 4: Consultation Summary, Section 4.3.2: Aboriginal communities Consultation p. 4-18 to 4-26</p> <p>For this section of the draft EA document, IAMGOLD should identify all issues raised by Aboriginal communities since the time the ToR was submitted for approval and provide supporting documentation that demonstrates how the concerns were addressed by the IAMGOLD as well as document any outstanding concerns.</p> <p>There are several instances within the draft EA document where IAMGOLD advised that they have responded to concerns raised by an Aboriginal community by indicating that their concerns will be addressed in the final EA document, or where it is advised that concerns will be considered. However there is a lack of documentation demonstrating how the concern has been or will be addressed. Examples include:</p> <p>Table B, D6 - responses to concerns raised about the proposed Project's impact to waterways, tailings, bird migration, fishing, Table B D6). Table D12-16 – proponent advised details regarding response to community concerns around discharge of cyanide and ammonia would be addressed and provided in final ER but it is unclear how this information or commitment was shared with the community or how it addresses concerns raised in the context of Aboriginal communities consultation and/or potential impacts to Aboriginal communities and treaty rights.</p> <p>Please revise this section of the EA document to better summarize Aboriginal consultation and engagement during the development of the EA, including updating Appendices with supporting information.</p>	<p>An overview of information sharing and stakeholder engagement activities is presented in Section 4.4. Information specific to Aboriginal consultation and engagement is located in Section 4.5, including summaries of comments and responses that were received prior to preparation of the EA (Table 4-7). Appendix D (RoC) has also been updated and all Aboriginal consultation records are located in Appendix D-9.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	<p>Chapter 4 and Appendix D</p>
584	MOECC - Environmental Approvals Branch	<p>EAS-25</p> <p>Chapter 4: Consultation Summary, Section 4.3.2: Aboriginal communities Consultation p. 4-18 to 4-26</p> <p>In this section, IAMGOLD should provide additional information in keeping with the Codes of Practice: Consultation in Ontario's Environmental Assessment Process. This includes:</p> <ul style="list-style-type: none"> ▪ an overall summary of engagement activities including meetings, emails, correspondence and site visits; ▪ a summary of notices in newspapers and notification of open house sent to First Nation communities (appendix D-5) and any notices specifically for Aboriginal communities community meetings; ▪ a listing of potential impacts to Aboriginal communities and /or treaty rights identified by the potentially impacted communities, and any additional interests and concerns identified as well as the proponent's consideration; ▪ a summary of the proponents response to these concerns or interests raised; ▪ a summary or listing of the Aboriginal communities community's views on any measures that have been taken in response to their concerns and identification of where Aboriginal communities have not been addressed by the response or mitigative measures proposed and whether additional action is required; and, ▪ Summary of any commitments regarding the proposed Project made to an Aboriginal communities community and status of implementation of the commitment. <p>Please revise this section of the EA document to better summarize Aboriginal community consultation and engagement during the development of the EA, including updating the Record of Consultation.</p>	<p>An overview of information sharing and stakeholder engagement activities is presented in Section 4.4. Information specific to Aboriginal consultation and engagement is located in Section 4.5. Appendix D (RoC) has also been updated and all Aboriginal consultation records are located in Appendix D-9.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	<p>Chapter 4 and Appendix D</p>

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
585	MOECC - Environmental Approvals Branch	<p>EAS-26</p> <p>Chapter 4: Consultation Summary, Section 4.3.2: Aboriginal communities Consultation p. 4-18 to 4-26</p> <p>This section should not only separate the comments raised by Aboriginal communities from other stakeholders, it is also recommended that a summary table for comments be completed for each Aboriginal communities, including all documentation to support the information provided in the Aboriginal Consultation Summary (i.e. meeting dates, phone calls, emails, correspondence, notices and communications).</p> <p>Please revise this section of the EA document to better summarize Aboriginal consultation and engagement during the development of the EA, including updating the Record of Consultation.</p>	<p>An overview of information sharing and stakeholder engagement activities is presented in Section 4.4. Information specific to Aboriginal consultation and engagement is located in Section 4.5. Appendix D (RoC) has also been updated and all Aboriginal consultation records are located in Appendix D-9. A summary of comments received from Aboriginal communities in pre-EA preparation (prior to January 14, 2014) is located in Section 4.5.1.7. A summary of comments received during EA preparation (up to September 30, 2014) is located in Section 4.5.2.8.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
586	MOECC - Environmental Approvals Branch	<p>EAS-27</p> <p>Chapter 4: Consultation Summary, Section 4.3.2: Aboriginal communities Consultation p. 4-18 to 4-26</p> <p>Where IAMGOLD has advised that Aboriginal communities have not provided a response to notification nor have no interest in the proposed Project, the IAMGOLD should provide documentation where appropriate confirming that the Aboriginal communities community is not interested in the proposed Project and follow up where necessary.</p> <p>Please revise this section of the EA document to better summarize Aboriginal consultation during the development of the EA, updating the Record of Consultation.</p>	<p>Comment noted. The Amended EIS / Final EA Report and Appendix D (RoC) have been revised accordingly; an overview of all Aboriginal consultation activities is located in Sections 4.4 and 4.5. Appendix D (RoC) has also been updated and all Aboriginal consultation records are located in Appendix D-9.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
587	MOECC - Environmental Approvals Branch	<p>EAS-28</p> <p>Chapter 4: Consultation Summary, Section 4.4.4: Comments and Responses p. 4-31</p> <p>In this section it states that the following is a summary of the key comments received about the proposed Project. This section needs to be more specific. It should summarize the comments IAMGOLD received during the development of the draft EA.</p> <p>In addition, comments from government agencies, the public and Aboriginal communities should be separated.</p> <p>Please revise this section to summarize the concerns raised during the development of the EA.</p> <p>Please revise this section of the EA document to better summarize Aboriginal consultation and engagement during the development of the EA, including updating the Record of Consultation.</p>	<p>Comment noted. The Amended EIS / Final EA Report and Appendix D (RoC) have been reviewed and revised accordingly. Aboriginal consultation and engagement activities are presented in Section 4.5, public and stakeholders consultation activities are presented in Section 4.6 and government agency consultation activities are presented Section 4.7.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
588	MOECC - Environmental Approvals Branch	<p>EAS-29</p> <p>Chapter 4: Consultation Summary, Section 4.4.4.2: Adjacent Land Users p. 4-31</p> <p>In this section it states that cottagers on Mesomikenda Lake have expressed frustration about an increased amount of noise on Mesomikenda Lake since the commencement of work at the proposed Project site and IAMGOLD noted that this was likely due to a number of summer students. It is not clear to the reader, what IAMGOLD means when it states that noise is likely from summer students? What is IAMGOLD doing on site to minimize noise to adjacent land owners?</p> <p>Information presented in the EA document should be clear and rational.</p> <p>Please consider revising the statement made about the students or removing it all together.</p>	<p>Comment noted. This statement has been removed.</p>	<p>Text referring to summer students has been removed.</p>	Chapter 4

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589	MOECC - Environmental Approvals Branch	<p>EAS-30</p> <p>Chapter 4: Consultation Summary, Section 4.4.4.2: Adjacent Land Users p.4-32</p> <p>This section states that IAMGOLD has mapped locations of tourism facilities and will review these maps to include these establishments if they fall within the expected proposed Project footprint. Is this map included in the EA document and if so, where can it be found. What did the review conclude? This information should be in the EA document, including any supporting documents.</p> <p>The proponent must ensure that the EA document has complete and update documentation. Please update the EA document to reflect IAMGOLD review of the maps</p>	<p>The location of tourism facilities are shown in Appendix O (Land and Resource Use TSD), Appendix I (Land and Resource Use Baseline Study), Figure 16. Potential effects on tourism facilities are addressed in Chapter 9.10.</p>	None.	n/a
590	MOECC - Environmental Approvals Branch	<p>EAS-31</p> <p>Chapter 4: Consultation Summary, Section 4.4.4.10: Waste Management p. 4-34</p> <p>This section states that IAMGOLD is in the process of exploring and permitting its own landfill on-site or off-site for construction and operations, or rehabilitating an unmaintained MOECC landfill. However, in section 7.3.12 there is no mention of rehabilitating an unmaintained MOECC landfill. The preferred alternative is to acquire and expand the existing MNRF Neville Township Landfill.</p> <p>The proponent must ensure that the EA represents accurately the planning and decision-making process that was followed and must communicate that clearly in the EA document. Please revise this section to better reflect the information presented elsewhere in the document that speaks to waste management alternatives.</p>	<p>Comment noted. This typo has been corrected.</p>	<p>Reference to the landfill has been removed from Chapter 4. The landfill is described in Section 5.11.2.</p>	Chapter 4
591	MOECC - Environmental Approvals Branch	<p>EAS-32</p> <p>Chapter 4: Consultation Summary, Section 4.5: Ongoing Consultation p. 4-34</p> <p>This section states that future consultation activities will focus on the draft EA and the preparation and review of the Final EA.</p> <p>The draft EA document should include the consultation activities that took place from submission of the final ToR up to submission of the draft EA document.</p> <p>Revise wording to clearly state that ongoing consultation activities will focus on addressing outstanding comments and/or issues, preparing and finalizing the EA document.</p>	<p>Chapter 4 and Appendix D (RoC) have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014). Ongoing and future consultation goals and activities are presented in Section 4.8.</p>	<p>Chapter 4 and Appendix D have been revised to present key consultation activities which coincide with key EA milestones in the Provincial process - pre-ToR approval (June 2012 to January 14, 2014) and during EA preparation (January 15, 2014 to September 30, 2014).</p>	Chapter 4 and Appendix D
592	MOECC - Environmental Approvals Branch	<p>EAS-33</p> <p>Chapter 5: Project Description, Section 5.1: Main Project Components and Activities p. 5-1</p> <p>This section states that various alternatives are still under consideration as part of the overall proposed Project planning and EA evaluations.</p> <p>Proposed Project alternatives are to be finalized prior to submission of the final EA document. It is difficult to adequately assess proposed Project impacts and appropriate mitigation if alternative methods are not finalized.</p> <p>Please revise this section to make it clear alternative methods will be finalized and documented in the final EA.</p>	<p>This paragraph has been revised to clarify that Project alternatives have been decided on, but that minor optimizations may occur as part of ongoing engineering studies.</p>	<p>Section 5.1 has been revised to reflect that alternatives have been decided on, but minor optimization may occur.</p>	Section 5.1

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593	MOECC - Environmental Approvals Branch	<p>EAS-34</p> <p>Chapter 5: Project Description, Section 5.6: Processing p. 5-11</p> <p>The draft EA document states that the ore processing plant may be expanded to include a copper recovery circuit. However, this copper recovery circuit is not included in the scope of the current proposed Project.</p> <p>Please provide an explanation as to why this is not considered as part of the scope of the proposed Project and EA.</p> <p>Please provide an explanation and revise text accordingly.</p>	<p>The text has been revised to clarify that the inclusion of a copper circuit has not been proven to be feasible at this point in time.</p>	<p>Section 5.6 has been revised to state that a copper recovery circuit is not feasible at the time of EA preparation.</p>	Section 5.6
594	MOECC - Environmental Approvals Branch	<p>EAS-35</p> <p>Chapter 5: Project Description, Section 5.14: Domestic and Industrial Waste Management p. 5-35</p> <p>The draft EA document states that the preferred alternative is to transport non-hazardous solid waste to a nearby off-site landfill, the MNRF/Chester Township Landfill. The existing landfill does not have the capacity to meet the proposed Project needs.</p> <p>Is MNRF aware and/or supportive of accepting and expanding the site to accommodate waste from the proposed Project?</p> <p>Please provide additional information and/or clarification and update EA document as appropriate.</p>	<p>IAMGOLD is working with the MNRF on a licence agreement which would delegate MNRF's management responsibilities for the landfill to IAMGOLD in return for MNRF completing the required studies for the expansion of the facility.</p> <p>The details of the MNRF study are beyond the scope of the EA and are within MNRF's responsibility.</p> <p>Additional clarification has been added to Section 5.14.</p>	<p>The following text has been added to Section 5.14, third paragraph:</p> <p>"IAMGOLD is working with MNRF on a licence agreement which would delegate MNRF's management responsibilities for the landfill to IAMGOLD in return for MNRF completing the required studies for the expansion of the facility."</p>	Section 5.14, third paragraph
595	MOECC - Environmental Approvals Branch	<p>EAS-36</p> <p>Chapter 5: Project Description, Section 5.17: Response to Comments through Consultation for the EA p. 5.17</p> <p>Table 5-2 lists government, Aboriginal communities and public comments and concerns that have been received with regards to the proposed Project description throughout the consultation process for this EA, and the responses provided.</p> <p>As stated in previous comments, government, Aboriginal and public comments should be separated. When did IAMGOLD receive these comments and who made them? Why has IAMGOLD decided to place these comments here as opposed to in the Consultation Summary?</p> <p>Please provide additional information and clarification and update the EA document as appropriate.</p>	<p>Section 5.17 has been revised to clarify that these comments are also included in Appendix D (RoC) and that the items listed in Table 5-2 have been selected on the basis that these are often recurring questions or comments that have been used to revise the Project description.</p> <p>Government, Aboriginal and public comments are provided in Chapter 4 of the Amended EIS / Final EA Report and are separated by various stakeholder groups.</p>	<p>Section 5.17 has been revised to clarify the basis for inclusion of comments in Table 5-2.</p>	Chapter 5, Section 5.17
596	MOECC - Environmental Approvals Branch	<p>EAS-37</p> <p>Chapter 7:0: Description of and Rationale of Alternatives, Section 7.2.1.3: Performance Objectives p. 7-3</p> <p>This section lists 6 performance objectives used as a basis for distinguishing between individual alternatives. A few of the performance objectives can be grouped into one, for instance, technical applicability can include ability to service the site (access roads), and ability to reclaim the site.</p> <p>Do effects to human environment include: aesthetics, community safety, employment training, community safety, effects on land use? If so, please make this clear by listing all of the criteria under each performance objective.</p> <p>Please clarify and make changes in EA document accordingly.</p>	<p>Note that the methodology used has been provided to IAMGOLD by the MOECC as a standard method to be used in mining EAs. The performance objectives cannot be grouped together as suggested as they address different aspects of the various alternatives considered.</p> <p>The criteria and indicators for the effects to the human environment for the alternatives assessment include all those listed in Chapter 7 (Table 7-5), which include aesthetics, community (public) health and safety, maintenance or improvement of local business and economic opportunities and land use through one or more of the criteria and/or indicators identified. No changes in the EA document are required.</p>	None.	n/a

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597	MOECC - Environmental Approvals Branch	<p>EAS-38</p> <p>Chapter 7:0: Description of and Rationale of Alternatives, Section 7.2.1.4: Evaluation Criteria and Indicators p. 7-4</p> <p>The EA document must provide the final list of criteria and the criteria should be linked to each component of the environment (natural, social, economic). Each criterion will include indicators that will identify how the potential environmental effects will be measured for each criterion.</p> <p>Please refer to page 27 of the Codes of Practice: Preparing and Reviewing Environmental Assessments in Ontario. This section of the Codes provides description of how the proponent should systematically evaluate the alternatives to and alternative methods and how this information should be presented in their EA document. IAMGOLD should be providing a rationale for selection for each criterion and list the data sources. Please see attached table as an example.</p> <p>The EA document should be structured in such a way that the decision making process followed by the proponent is clear and understandable. In this section you list criteria and indicators, but they are also listed in section 9 and 11.</p> <p>Please review the Codes of Practice for how the proponent should systematically evaluate alternatives and ensure that the methodology is easy to follow and understandable.</p>	<p>During the preparation of the ToR as part of the Provincial Individual EA process, IAMGOLD committed to assess alternatives to the Project utilizing an approach consistent with the methodology recommended in the MOECC Code of Practice: Preparing and Reviewing Environmental Assessments in Ontario, including an assessment of alternatives to the Project. The methodology used (outlined in Section 7.2) was developed in consultation with the MOECC and other stakeholders, and has been used successfully by AMEC in other recently submitted and approved EAs. The methodology was vetted by the MOECC during the preparation of the Provincial Individual EA process of the ToR. No changes in the EA document are required.</p> <p>The alternatives assessment in Chapter 7 is an <i>a priori</i> assessment, using information obtained from both primary and secondary sources (best industry practices, baseline data, literature, government and other databases, etc.), and should not be confused with the prediction of effects and impact assessment developed for the Project as described in Chapters 9 and 11, respectively.</p>	None.	n/a
598	MOECC - Environmental Approvals Branch	<p>EAS-39</p> <p>Section 7: Description of and Rationale for Alternatives, Section 7.2.1.5: Identification of the Preferred Alternative</p> <p>It is not clear in the title nor in the paragraph if IAMGOLD is describing 'alternatives to' or 'alternative means/methods'.</p> <p>Please consider revising the title of this subsection to make it clear that IAMGOLD is describing alternatives to the proposed Project and make appropriate revisions accordingly in the text.</p>	<p>Section 7.2.1.5 includes the methodology to assess the preferred Project alternatives (e.g., open pit or underground mining). Section 7.2.2 includes the methodology to assess alternatives to the Project (e.g., proceed with the Project or 'do nothing'). Sections 7.2.1.5 and 7.2.2 have been retitled for clarity.</p>	<p>Header for Section 7.2.1.5 has been revised to: "7.2.1.5 Method to Identify the Preferred Project Alternative"</p> <p>Header for Section 7.2.2 has been revised to: "7.2.2 Method to Assess Alternatives to the Project"</p>	Sections 7.2.1.5 and 7.2.2
599	MOECC - Environmental Approvals Branch	<p>EAS-40</p> <p>Section 7: Description of and Rationale for Alternatives, Section 7.2.2: Alternatives to the proposed Project p.7-11</p> <p>This section states that as part of the development of the EA process and in compliance with the CEEA (2012) EIS Guidelines, IAMGOLD committed to assess alternatives to the Côté Gold proposed Project.</p> <p>Assessment of 'alternatives to' is also necessary to fulfill the requirements of the ToR.</p> <p>Please revise/add text accordingly.</p>	<p>The alternatives assessment has been prepared in accordance with requirements in the Approved ToR (there were no specific requirements in the Approved ToR). The Amended EIS / Final EA Report has been revised to reflect this requirement.</p>	<p>The following sentence: "As part of the development of the EA process and in compliance with CEEA (2012) EIS Guidelines, IAMGOLD committed to assess alternatives to the Côté Gold Project." has been replaced with the following: "As part of the development of the EA process and in compliance with the Approved ToR and CEEA (2012) EIS Guidelines, IAMGOLD committed to assess alternatives to the Côté Gold Project."</p>	Sections 7.2.1.5 and 7.2.2

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600	MOECC - Environmental Approvals Branch	<p>EAS-41</p> <p>Section 7: Description of and Rationale for Alternatives, Section 7.2.2: Alternatives to the proposed Project p. 7-22</p> <p>This section does not describe each of the alternatives to, the benefits (adv. /disadv.), nor does it explain why the preferred alternative of proceeding with the proposed Project was selected. It is not clear the methodology used in this section. Significance of effect is described using a numerical level from 1 to 5, whereas significance of effect in section 11 is described as Level I, II, and III?</p> <p>Clarify the methodology used. Please refer section 4.2.4: Assessment and Evaluation in the Codes of Practice: Preparing and Reviewing Environmental Assessments in Ontario.</p>	<p>See responses to Comments #598 and 599; note that Section 7.2.2 only describes the methodology, results are presented in Section 7.5.</p> <p>With regards to significance levels, see response to Comment #597; these are different to the levels chosen to develop the impact assessment (Section 11). Significance levels for the alternatives assessment are <i>a priori</i> for convenience expression only, based on best industry practices and professional judgement through a reasoned process.</p> <p>A methods section has been added in Chapter 1 of the Amended EIS / Final EA Report to outline the methods used to assign significance throughout the document.</p>	A new Section 1.7 was added to Chapter 1 to introduce the methodologies used throughout the EA.	Chapter 1
601	MOECC - Environmental Approvals Branch	<p>EAS-42</p> <p>Section 7: Description of and Rationale for Alternatives, Section 7.3.9: Watercourse Realignment p. 7-26</p> <p>This section states that watercourse realignments are under investigation and, in discussions with regulators, will be reviewed as engineering studies advance.</p> <p>Assessment of alternatives for the proposed Project components needs to be finalized in the EA document in order to adequately assess potential impacts and mitigation.</p> <p>Complete assessment of alternatives for watercourse re-alignment in-order to identify potential effects and mitigation, prior to submitting final EA document to the MOECC. Consult as appropriate with stakeholders, members of the public, Aboriginal communities and government agencies.</p>	The Section 7.3.9 text has been revised to verify the assessment of alternatives is complete. The design may be optimized as engineering progresses. This optimization will not include any additional watercourse realignments, or changes to locations of those proposed. As a result, there is no change to significance of any of the alternatives. The Amended EIS / Final EA Report has been revised to include this information.	The following sentences have been added to the end of the final paragraph of Section 7.3.9: "The design may be optimized as engineering progresses. This optimization will not include any additional watercourse realignments, or changes to locations of those proposed."	Section 7.3.9, final paragraph
602	MOECC - Environmental Approvals Branch	<p>EAS-43</p> <p>Section 7: Description of and Rationale for Alternatives, Section 7.5: Alternatives to the proposed Project p. 7-55</p> <p>It is unclear why IAMGOLD does not describe the alternatives to the proposed Project and its selection process in section 7.2.2?</p> <p>The proponent must ensure that the EA document represents accurately the planning and decision-making process that was followed.</p> <p>Please consider revising this section of the EA document.</p>	This comment has been addressed through the abovementioned revisions of Chapter 7 (see responses to Comments #598, 599 and 600).	None.	n/a
603	MOECC - Environmental Approvals Branch	<p>EAS-44</p> <p>Section 9: Description of proposed Project Effects, Section 9.1: Methodology p. 9.1</p> <p>The draft EA document describes methodology in sections 7, 9 and 11.</p> <p>The proponent must ensure that the EA represents the planning and decision-making process that was followed and it must be described clearly in the EA document. The process followed by the proponent should be clear, rational and logical.</p> <p>It is recommended that the EA document be restructured, so that the methodology assessment for the proposed Project can be found in one place.</p>	A methodology section has been added to Chapter 1 of the Amended EIS / Final EA Report to clarify the methods used in the various analyses throughout the EA.	A new Section 1.7 was added to Chapter 1 to introduce the methodologies used throughout the EA.	Chapter 1

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604	MOECC - Environmental Approvals Branch	EAS-45 Section 9: Description of proposed Project Effects, Sections 9.2.3,9.3.3, 9.4.3, 9.5.3, 9.6.3,9.7.3, 9.8.3, 9.9.3, 9.10.3, 9.11.3, 9.12.3, 9.13.3, 9.14.3, 9.15.3 These sections provide a summary of the comments received from the public, government agencies and Aboriginal communities specific to a potential effect. Comments from the public, government agencies and Aboriginal communities should be separated. Why did IAMGOLD decide to summarize comments here as opposed to in the Consultation Summary of the EA document? IAMGOLD may want to consider summarizing all of the comments received during the development of the EA in the Consultation Summary section of the EA document.	These comments are also included in full in Appendix D (RoC), and have been separated by public, government agencies or Aboriginal communities. Comments referred to in sections 9.3 have been selected because they either led to Project and / or mitigation changes, or because these comments were frequently raised throughout the consultation process.	None.	n/a
605	MOECC - Environmental Approvals Branch	EAS-46 Section 9: Description of proposed Project Effects, Section 9.1.3: Prediction of Effects p. 9-12 This section states that with the application of best practice construction management methods, no effects along the alignment are expected. According to what? Baseline studies? Affects analysis? Please clarify and make appropriate changes accordingly in the EA document.	For linear projects, such as transmission lines, it is common practice to screen out certain effects pathways. For example, effects on hydrogeological conditions can be screened out for the development of the transmission line associated with the Project. However, the rationale for screening out certain effects pathways has been strengthened to more clearly explain the decision making process to any reader.	Section 9.1.3 has been revised to include rationale for exclusion of some indicators in the impact assessment for the transmission line.	Section 9.1.3
606	MOECC - Environmental Approvals Branch	EAS-47 Section 9: Description of proposed Project Effects This Chapter describes the potential effects of the proposed Project on the environment. This Chapter should also describe, in paragraph form, the mitigation proposed for each potential effect and the residual effects. Please consider revising this section of the EA document.	A description of all mitigation measures for the Project can be found in Chapter 10. Chapter 9 describes residual effects. The impact assessment methodology has been moved from Chapter 11 to the beginning of Chapter 9 to better explain the approach to the description of effects and the assessment of impacts.	The impact assessment methodology has been added to the introduction of Chapter 9, and the connection between Chapter 9, Chapter 10 and Chapter 11 is explained.	Chapters 9 and 11.
607	MOECC - Environmental Approvals Branch	EAS-48 Section 10, Mitigation Measures, Table 10-2, p. 10-22, 10-24 Table indicates that mitigation/management plan will be developed . . . to address potential impacts to breeding birds. Identification of proposed mitigation must be determined in the EA process and documented in the EA document. Identify proposed mitigation and document it in the EA document.	Chapter 10 describes all foreseen mitigation measures. The management plan to reduce effects on breeding birds, however can only be developed in full detail once Project infrastructure has been designed.	None.	n/a
608	MOECC - Environmental Approvals Branch	EAS-49 Section 10, Mitigation Measures, Table 10-3, p.10-38 to 10-39 "Land Use" EAB concurs with comments made by the ministry's Northern Region Environmental Planner/EA Coordinator regarding identification of proposed mitigation during the EA process. Identification of proposed mitigation must be determined in the EA process and documented in the EA document. Identify proposed mitigation and document it in the EA document.	IAMGOLD has determined, through an information request fulfilled by the MNR on August 16, 2013 that no compensation is required for trap line losses. "If a trapper decides that he no longer wants his trapline (for whatever reason), he can relinquish it to the Crown. In keeping with our provincial trapline policies, we cannot just transfer the head trapper to another trapline. All trappers apply for vacant traplines they are interested in acquiring, and a provincial point system is used to determine the allocation of each vacant line." (pers. comm., Suzanne DeForest, Ministry of Natural Resources, August 16, 2013). The text in the Amended EIS / Final EA Report has been modified to reflect this. The mitigation for effects on hunting has been removed for the construction, operations and closure phases. The MNR has advised that affected BMA holders can apply to obtain licenses to additional BMAs in the Timmins district to augment the loss of access. This mitigation has been included for the construction, operations and closure phases.	The mitigation has changed as follows: "Based on discussion with the MNRF no compensation is required for trap line losses."	Table 10-3, ("Land Use", "Trapping – loss of access to trapline area (GO031)") Tables ES-3, ES-4, ES-5, ES-6, 11-3, 11-4, 11-5 and 11-6 ("Land Use", "Trapping")

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609	MOECC - Environmental Approvals Branch	<p>EAS-50</p> <p>Section 10, Mitigation Measures, Table 10-3, p. 10-40</p> <p>Table indicates that IAMGOLD will consult with local snowmobile clubs and organizations . . . to minimize potential conflicts regarding access.</p> <p>Consultation with affected groups to determine potential access limitations and how to mitigate must be completed in the EA process and documented in the EA document.</p> <p>Identify potential access limitations, proposed mitigation and document it in the EA document.</p>	<p>IAMGOLD does not expect to noticeably effect snowmobiling activities in the area. However, IAMGOLD will work with local organizations once the exact timing and pole locations are better known to ensure that local snowmobiling activities are not affected. The mitigation measure in the Amended EIS / Final EA Report has been updated accordingly.</p>	<p>The following mitigation:</p> <p>"Consult with local snowmobile clubs and organizations, as applicable, to minimize potential conflicts."</p> <p>has been updated to:</p> <p>"Consult with local snowmobile clubs and organizations, particularly when construction timing and transmission line engineering / pole placement is better known, to minimize potential conflicts."</p>	<p>Tables ES-3, 10-3, 11-3 ("Land Use", "Other Recreational Use – access limitations along transmission line alignment")</p>
610	MOECC - Environmental Approvals Branch	<p>EAS-51</p> <p>Section 11, Impact Assessment, Section 11</p> <p>For this section of the document, IAMGOLD should consider providing a more fulsome description of the methodology used to assess the environmental impacts of the proposed Project.</p> <ol style="list-style-type: none"> 1. Screening of valued ecosystem components/indicators; 2. Screening proposed Project activities with potential to have impacts with indicators; 3. Predict assessment of likely effects (extent, magnitude...); 4. Identification of mitigation measures; 5. Identification of residual effects; 6. Significance of residual effects. <p>The EA document describes the effects and mitigation of the proposed Project, prior to describing the methodology. The EA document should be organized in such a manner that any interested person reading the EA document should be able to easily follow the planning process undertaken by the proponent.</p> <p>The environmental impact assessment section should describe in non-tabular form (environmental effect for each proposed Project phase, mitigation proposed, residual environmental effect and significance).</p> <p>Please clearly explain in detail the methodology used to identify, assess, and mitigate the proposed Project effects on the environment and consider revising document so that the decision making process is organized in such a manner that it is easy to follow and is logical.</p>	<p>Please see response to Comment #606.</p>	<p>None.</p>	<p>n/a</p>
611	MOECC - Environmental Approvals Branch	<p>EAS-52</p> <p>Section 11, Impact Assessment, Section 11.1.4</p> <p>Although Section 11.1.4 speaks to determining significance it does not provide an explanation linking it back to the Levels I, II, III defined in Table 11.1. For example, groundwater impacts was rated Level III for magnitude, frequency and reversibility, yet it was determined not significant? Graphic 11-1 is not very helpful.</p> <p>The EA document should include a clear methodology for how the significance of effects was assessed.</p> <p>Please simplify this section and link it to the levels to determine significance.</p> <p>Please clearly explain in detail the methodology used to identify, assess, and mitigate the proposed Project effects on the environment and consider revising document so that the decision making process is organized in such a manner that it is easy to follow and is logical.</p>	<p>Please see response to Comment #606.</p>	<p>None.</p>	<p>n/a</p>

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
612	MOECC - Environmental Approvals Branch	<p>EAS-53 Section 11, Impact Assessment, Table 11-3 to 11-6 IAMGOLD should consider modifying these tables to include and/or change existing columns:</p> <ul style="list-style-type: none"> ▪ Activity (i.e. site preparation); ▪ Residual Environmental effect; and, ▪ Significance of Residual Effect (provide a brief description as to why something is or not significant). <p>Please review and revise accordingly.</p>	Please see response to Comment #606.	None.	n/a
613	MOECC - Environmental Approvals Branch	<p>EAS-54 Section 11, Impact Assessment, Table 11-3, p. 11-31 Table states that potential effects on hunting during the construction phase will be determined through consultation between MNRF and any affected BMA holders. Potential effects and proposed mitigation should be determined during the EA process and identified in the final EA document in order to meet the requirements of the EAA. Identify potential effects and identify proposed mitigation during the EA process for all phases of the proposed Project.</p>	This mitigation for effects on hunting has been removed for the construction, operations and closure phases. The MNRF has advised that affected BMA holders can apply to obtain licenses to additional BMAs in the Timmins district to augment the loss of access. This mitigation has been included for the construction, operations and closure phases.	The mitigation has changed as follows: "The MNRF has advised that the affected BMA holder can apply to obtain licenses to additional BMAs in the Timmins District to augment the loss of access to the northern portion of the affected BMA"	Table 10-3, ("Land Use", "Hunting - loss of BMAs") Tables ES-3, ES-4, ES-5, 11-3, 11-4, 11-5 ("Land Use", "Hunting")
614	MOECC - Environmental Approvals Branch	<p>EAS-55 Section 11, Impact Assessment, Table 11-3, p. 11-31 Table states that potential effects on trapping during construction will be determined through consultation between the MNRF and affected trappers. Potential effects and proposed mitigation should be determined during the EA process and identified in the final EA document in order to meet the requirements of the EAA. Identify potential effects and identify proposed mitigation during the EA process for all phases of the proposed Project.</p>	IAMGOLD has determined, through an information request fulfilled by the MNR on August 16, 2013 that no compensation is required for trap line losses. "If a trapper decides that he no longer wants his trapline (for whatever reason), he can relinquish it to the Crown. In keeping with our provincial trapline policies, we cannot just transfer the head trapper to another trapline. All trappers apply for vacant traplines they are interested in acquiring, and a provincial point system is used to determine the allocation of each vacant line." (pers. comm., Suzanne DeForest, Ministry of Natural Resources, August 16, 2013). The text in the Amended EIS / Final EA Report has been modified to reflect this.	The mitigation has changed as follows: "Based on discussion with the MNRF no compensation is required for trap line losses."	Table 10-3, ("Land Use", "Trapping – loss of access to trapline area (GO031)") Tables ES-3, ES-4, ES-5, ES-6, 11-3, 11-4, 11-5 and 11-6 ("Land Use", "Trapping")
615	MOECC - Environmental Approvals Branch	<p>EAS-56 Section 11, Impact Assessment, Table 11-3, p. 11-31 Table lists potential effects to several bait harvest areas as a result of the proposed Project, yet, in the mitigation column, the response is 'not applicable'. Potential effects and proposed mitigation should be determined during the EA process and identified in the final EA document in order to meet the requirements of the EAA. Identify potential effects and identify proposed mitigation during the EA process for all phases of the proposed Project.</p>	No specific mitigation measures related to effects on bait harvesting have been identified, nor are they required, since there are no expected significant impacts on this indicator. Note that as per Section 3.1.6.2 of Appendix O (Land and Resource Use TSD) other bait harvest blocks could be allocated to interested bait fishers and that potential effects are limited due to the mitigation measures incorporated in the water quality and aquatic biology disciplines.	None.	n/a

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616	MOECC - Environmental Approvals Branch	EAS-57 Section 11, Impact Assessment, Table 11-3, p. 11-32 Table states potential effects on the cottagers may include decreased enjoyment and leisure lifestyle associated with cottaging due to construction noise and dust. The mitigation response is to limit recreational boating for workers while they are staying at the work camp on-site. How does mitigation proposed address concerns regarding noise, dust . . . ? Potential effects and proposed mitigation should be determined during the EA process and identified in the final EA document in order to meet the requirements of the EAA. Identify potential effects and identify proposed mitigation during the EA process for all phases of the proposed Project.	The mitigation identified addresses the potential perception by cottagers that the area may be less pristine due to the increased presence of workers. The effects prediction for the construction phase indicates that noise regulatory limits will be met at all receptor locations for both daytime and nighttime, as such no removal of cottages is warranted during the construction phase. IAMGOLD has undertaken technical studies that identify that with application of mitigation methods for noise (such as limiting nighttime operations; see Table 10-1 of Chapter 10) regulatory limits will be met at all receptor locations during the operations phase. However, IAMGOLD may negotiate with some cottage owners to purchase the property if limiting operations is not preferred. Removal of cottages has been added as a potential mitigation measure. The effects prediction demonstrates that air quality limits will be met at receptor locations.	Potential removal of cottages has been added as a mitigation measure.	Tables ES-3, ES-4, ES-5, 10-3, 11-3, 11-4, 11-5 ("Land Use", "Cottagers and Outfitter Camps")
617	MOECC - Environmental Approvals Branch	EAS-58 Appendix C-3 Appendix C-3 includes a table listing the commitments made in the approved ToR and cross references those commitments with the EA document. This commitment table does not include all commitments made in the ToR. Please see Table 2 which includes a comprehensive list commitments made the final ToR.	Appendix C-3 has been amended to include the commitments identified in Table 2 received with the MOECC-EASS comments.	Appendix C-3 has been updated based on commitments identified by the MOECC.	Appendix C-3
618	MOECC - Environmental Approvals Branch	EAS-59 The Record of Consultation should be updated to reflect all consultation activities that occurred since submission of the final ToR to the MOECC. Ensure that the record is separated for government agencies, stakeholders, the public and Aboriginal communities. Please update and include supporting documents and correspondence to support consultation efforts that occurred after submission of the final ToR to the MOECC.	Comment noted. The Amended EIS / Final EA Report and Appendix D (RoC) have been reviewed and revised accordingly.	Chapter 4 and Appendix D have been revised to separate records for government agencies, the public and Aboriginal communities.	Chapter 4 and Appendix D
619	MOECC - Environmental Approvals Branch	EAS-60 Please review the Codes of Practice for Preparing and Reviewing Environmental Assessments in Ontario for EA document format. Please revise the EA document format/structure as appropriate.	Based upon review of the Code of Practice, and with the inclusion of responses to comments from MOECC-EASS, the Amended EIS / Final EA Report is considered fully compliant with the Code of Practice.	None.	n/a
620	MOECC - Environmental Approvals Branch	EAS-61 Throughout the EA document, the ministry is referred to as the Ministry of the Environment. Recently, the ministry name changed to the Ministry of the Environment and Climate Change. Please revise the EA document to reflect the new ministry name.	The Amended EIS / Final EA Report has been revised to address the ministry name change.	The Amended EIS / Final EA Report has been updated to reflect the current name of the Ministry of the Environment and Climate Change where appropriate.	Executive Summary, Chapters 1 to 19
621	MOECC - Environmental Approvals Branch	EAS-62 Throughout the EA document, the ministry is referred to as the Ministry of Natural Resources. Recently, the ministry name changed to the Ministry of the Natural Resources and Forestry. Please revise the EA document to reflect the new ministry name.	The Amended EIS / Final EA Report has been revised to address the ministry name change.	The Amended EIS / Final EA Report has been updated to reflect the current name of the Ministry of Natural Resources and Forestry where appropriate.	Executive Summary, Chapters 1 to 19
622	MNRF - Regional Engineering	Pg 5-16, Section 5.7 Tailings Management Facility – The construction of six dams will require approval under the <i>Lakes and Rivers Improvement Act</i>	IAMGOLD will apply for applicable permits, including work permits under the <i>Lakes and Rivers Improvement Act</i> , as applicable, when detailed designs are available.	None.	n/a
623	MNRF - Regional Engineering	Pg 5-27, Section 5.10.7.1 Construction of three dams to facilitate the draining of Cote Lake will require approval under the <i>Lakes and Rivers Improvement Act</i>	IAMGOLD will apply for applicable permits, including work permits under the <i>Lakes and Rivers Improvement Act</i> , as applicable, when detailed designs are available.	None.	n/a
624	MNRF - Regional Engineering	Pg 5-27, Section 5.10.7.2 Construction of the Chester Lake and Mollie River dam and channel realignment will require approval under the <i>Lakes and Rivers Improvement Act</i>	IAMGOLD will apply for applicable permits, including work permits under the <i>Lakes and Rivers Improvement Act</i> , as applicable, when detailed designs are available.	None.	n/a

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625	MNRF - Regional Engineering	Pg 5-27, Section 5.10.7.3 Clam Lake - Construction of five dams and channel alignment from Little Clam Lake to the West Beaver Pond will require approval under the <i>Lakes and Rivers Improvement Act</i>	IAMGOLD will apply for applicable permits, including work permits under the <i>Lakes and Rivers Improvement Act</i> , as applicable, when detailed designs are available.	None.	n/a
626	MNRF - Regional Engineering	Pg 5-28, Section 5.10.7.4 Construction of two channel realignments to maintain flow to 3 Duck Lake will require approval under the <i>Lakes and Rivers Improvement Act</i>	IAMGOLD will apply for applicable permits, including work permits under the <i>Lakes and Rivers Improvement Act</i> , as applicable, when detailed designs are available.	None.	n/a
627	MNRF - Regional Engineering	Pg 5-28, Section 5.10.7.5 Construction of the 4.3 km long Bagsverd Creek realignment and watershed diversion will require approval under the <i>Lakes and Rivers Improvement Act</i>	IAMGOLD will apply for applicable permits, including work permits under the <i>Lakes and Rivers Improvement Act</i> , as applicable, when detailed designs are available.	None.	n/a

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628	Northwatch	<p>2. Context</p> <p>The Côte Lake Gold Mine Project will be a large lower-grade, high-tonnage project; projects of this nature have a large environmental footprint relative to the volume of gold production and are generally known to be marginal projects with a high potential for early closure, including unplanned closure prior to completion of closure activities. In particular, we are concerned about mining legacies already within the Project site and area, the intention to use natural water bodies for deposit of mining wastes, and the potential for acid generation and associated metal leaching.</p> <p>Northwatch's interest is in the environmental footprint of the proposed project, and the social and environmental costs that might be incurred as a result of the project, including lost opportunity costs.</p> <p>We are familiar with the mine site and the previous operations of Trelawney Mining's "Chester Project" at the same location, having conducted a site visit in mid-2010. In 2013 we reviewed and commented on the IAMGOLD's project description for the Côte Gold Mine Project. In preparing those comments we reviewed:</p> <ul style="list-style-type: none"> ▪ the Executive Summary of the Project Description as made available on the CEAA web site ▪ the project information available on the Major Project Management Office (MPMO) web site ▪ the project information available on IAMGOLD Corporation's web site ▪ the NI 43-101 Report dated October 2012 on the Côte Gold Mine Project as posted on the SEDAR web site ▪ Northwatch files and documents related to the Chester Project <p>Based on the information noted above, we identified the following as areas of environmental concern during our 2013 review:</p> <ul style="list-style-type: none"> ▪ The Côte Lake Gold Mine will be a large lower-grade, high-tonnage project; projects of this nature have a large environmental footprint relative to the volume of gold production and are generally known to be marginal projects with a high potential for early closure, including unplanned closure prior to completion of closure activities at less than one gram per tonne in both the indicated and inferred resource estimates the project is extremely vulnerable to market fluctuations, and so at risk of unplanned and incomplete closure, as per the previous point ▪ There have been a series of mine development efforts on these same properties over many decades; in some cases, infrastructure has been developed without the project ever going to production; these types of projects carry additional environmental risk due to the potential for closure activities not being completed ▪ The infrastructure needs of this Project includes the development of a new transmission corridor as power supply; this extends the environmental footprint of the project over a very large area ▪ The proponent anticipates requesting to use a natural water body for the deposit of mining wastes; this will presumably trigger a review related to a request to amend Schedule 2 of the Metal Mining Effluent Regulation under the <i>Fisheries Act</i>, but serves as indicator of serious environmental impacts that will be result from the project ▪ While the Proponent is currently speculating that the waste rock and ore will not be acid generating, this has not yet been established; the potential for acid generation and associated metal leaching requires serious investigation, given the toxic and long lasting impacts of this phenomena <p>Comment continues on next page.</p>	The comment has been noted. No changes in the EA required.	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
628 cont	See previous page.	<ul style="list-style-type: none"> Several water bodies inhabited by multiple fish species will be lost if this project were to proceed as currently proposed, including the entire loss of Côté Lake and Clam Creek, significant losses of sections or areas of Mollie River, Bagsverd Creek, Clam Lake and Three Ducks Lake, and impacts on two unnamed lakes, and on Bagsverd Lake, Little Clam Lake, Chester Lake and Mesomikenda Lake. The combination of production rate and mine life raise serious questions related to the social and economic benefits of the project as proposed, including questions about the comparative social and economic benefits of alternate means of carrying out the project The accumulation of mining properties in the immediate area by IAMGOLD requires a cumulative effects assessment be undertaken as part of evaluating the Côté Gold Project (the NI 43-101 Report dated October 2012 recommended “that work continue to be advanced, at the Côté Gold deposit, on the Chester Property, and on the other property groups”; we similarly recommended in our 2013 comments on the Project Description that these projects be bundled for a single environmental assessment and a thorough cumulative effects assessment) <p>All of the concerns persist in 2014; none of these concerns have been allayed by the information provided by IAMGOLD’s EIS Summary of Environmental Impact Statement documents or appendices.</p>	See previous page.	See previous page.	See previous page.
629	Northwatch	<p>3. Review of Environmental Impact Statement Summary</p> <p>On June 2, 2014 the Canadian Environmental Assessment Agency invited the public to comment on the potential environmental effects of the Côté Gold Mine Project and the proposed measures to prevent or mitigate those effects as described in a summary of the proponent’s Environmental Impact Statement (emphasis added).</p> <p>The Environmental Impact Statement (EIS) Summary is a 124 page document prepared for IAMGOLD by the consulting firm Amec and dated May 2014.¹ The document includes approximately 40 pages of text, tables, figures and images purportedly summarizing the project and an approximately 80 page long appendices which is comprised of a table titled “Impact Assessment Matrix for the Operations Phase”. It does not include a table of contents, foot notes, references, or a glossary.</p> <p>In general terms, we found the EIS Summary to be a weak document. In many instances the descriptions and statements included in the EIS Summary are either wholly inconclusive – it could be this or it could be that – or so very generalized that they read as generic descriptions which could be applied to almost all mine projects, and so tell the reader very little about the Côté Gold Mine Project in particular.</p> <p>The following examples were selected to illustrate these failings. This section does not seek to catalogue the deficiencies, but simply to provide examples and discussion as support of the more generally stated criticism expressed in the previous paragraph.</p>	The comment has been noted. No changes in the EA required.	None.	n/a
630	Northwatch	<p>The preliminary site layout (see Figure ES-2) proposes to place the required mine-related facilities in close proximity to the open pit, to the extent practicable, on lands that are leased and/or, on patented lands held fully and/or jointly by IAMGOLD [EIS Summary Page ES-3]</p> <p>This description tells the reader little to nothing about the actual land ownership. The statement that facilities will be “in close proximity ... to the extent practicable” is a wholly subjective statement. The description of land ownership offers all options and identifies none in terms of tenure / ownership arrangements.</p>	<p>The Executive Summary is a high level document which is not intended to provide full details of the Project. Land ownership information is described in detail in Section 1.5 of the EA. Figure 1-3 shows land ownership and mineral rights in the vicinity of the Project.</p> <p>Location selection for mine infrastructure is assessed in Chapter 7, Description of and Rational for Alternatives. Each alternative is assessed for cost-effectiveness, technical applicability, ability to service the site effectively, effects to the physical and biological environments, effects to the human environment, and amenability to reclamation.</p> <p>Chapter 7 provides a rationale for how each alternative was assessed against the above evaluation criteria. In general, locating infrastructure near the open pit reduces costs, impacts to the physical and biological environments and effects to the human environment, thereby making these alternatives more attractive.</p>	None.	n/a

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631	Northwatch	<p>Open pit mining operations will occur at a rate of approximately 60,000 tonnes of ore per day. Overburden, mine rock and low grade ore extracted from the open pit will be stockpiled in a nearby mine rock area (MRA). [EIS Summary Page ES-3]</p> <p>The proposed production rate of 60,000 tonnes per day is high. No where in the EIS summary is there any discussion of why the proponent has set such a high production rate, or is there a discussion of alternatives means with respect to the production rate, i.e. extending the operating period of the mine with a lower production rate.</p>	<p>The proposed mining and processing rate of 60,000 tonnes per day is comparable to other high volume, lower grade mining projects in Ontario. For example, the Detour Lake Mine has a mining and processing rate of 61,200 tonnes per day.</p>	None.	n/a
632	Northwatch	<p>Excess site water will be discharged to Bagsverd Creek via a polishing pond and/or additional water treatment, if required. [EIS Summary Page ES-4]</p> <p>Again, this form of non-committal statement of two different options as if both are equally possible indicates that the Project is not yet sufficiently developed or designed to be moving through an evaluation process.</p>	<p>Chapter 5 of the EA (Project description) describes that a polishing pond will be constructed to the immediate north of the TMF. Section 5.10.5 describes how a receiving water assimilative capacity study will be conducted as part of the Provincial approvals process. A detailed design of the polishing pond will be conducted congruently. If the assimilative capacity study and the polishing pond detailed design finds that the polishing pond will not provide enough protection for receiving water aquatic life, then additional water treatment options will be implemented.</p>	None.	n/a
633	Northwatch	<p>Such discharge will meet applicable Federal and Provincial effluent discharge requirements and will be protective of receiving water aquatic life.</p> <p>This statement is completely uninformative, as it must surely apply to all mine projects equally. What mine proponent would propose that mine be designed and developed from the outset to NOT meet effluent discharge requirements, or to NOT be protective of the receiving water aquatic life.</p>	<p>This statement provides more than a commitment to meet applicable legislation / permits. It reflects the design basis for the water treatment facilities, as it would be inappropriate to not provide the intended level of water treatment in the EA.</p>	None.	n/a
634	Northwatch	<p>Non-hazardous domestic solid wastes will likely be deposited in an on-site landfill, unless a suitable off-site landfill with sufficient capacity is identified.</p> <p>Another statement which is completely uninformative, as it must surely apply to all mine projects equally. Obviously solid waste will have to be dealt with, either on-site or off-site. To state that solid waste will be dealt with either on-site or off-site provides no actual information about the Project or its management.</p>	<p>See Section 5.11.2 and 5.14 for additional information on the landfill. The alternatives assessment in Chapter 7 has identified an offsite landfill (operated by the MNRF) as the preferred alternative. IAMGOLD is working with the MNRF on a licence agreement which would delegate MNRF's management responsibilities for the landfill to IAMGOLD in return for MNRF completing the required studies for the expansion of the facility. The landfill is included in the effects assessment of the Project. The details of the MNRF study are beyond the scope of the EA and are fully within MNRF's responsibility. The Executive Summary has been revised to address this comment.</p>	<p>The Executive Summary text has been revised to state "IAMGOLD intends to deposit non-hazardous domestic solid wastes in a nearby-off-site landfill that is currently operated by the Ministry of Natural Resources and Forestry. IAMGOLD and the Ministry of Natural Resources and Forestry are in negotiations on expansion of the landfill to meet Côté Gold Project needs. If it is determined that the landfill will not be suitable for the Côté Gold Project then an onsite landfill will be developed."</p>	Executive Summary, page ES-3
635	Northwatch	<p>The objective of closure is to reclaim the Project site area to as near a naturalized and productive condition as possible upon completion of mining.</p> <p>Again, this statement is completely uninformative, as it must surely apply to all mine projects equally. This is a provincial requirement, albeit stated even more generally that the regulations.</p>	<p>The Executive Summary is a high level document which is not intended to provide full details of the Project.</p> <p>A conceptual closure and reclamation plan is provided as Section 5.16 of the EA.</p>	None.	n/a
636	Northwatch	<p>The decision to proceed with construction will depend on the Project economics, which is based on the projected gold price.</p> <p>There is no description or actual discussion of project economics in EIS summary, outside of the preceding statement about project economics being based on the projected price of gold. The poor economics of the project - resource estimated based on a \$1600/oz gold but we are in a \$1250/oz gold world - means the deposit as described is not likely to be mined in one continuous life-of-mine timeline, if at all.</p>	<p>Project economics are typically considered within engineering feasibility studies. The purpose of an EA is focus on the potential environmental effects of a Project, and assess if those effects will be significant after the application of appropriate mitigation measures and develop environmental monitoring plans to confirm the predictions and support adaptive management processes.</p>	None.	n/a

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637	Northwatch	Table ES-1 identifies two bats - Little Brown Myotis and Northern Myotis – as endangered species. Two endangered species were identified, but no protection strategy was described.	Mitigation strategies for the protection of bats and SAR are provided in Table 10-2 (Mitigation Measures - Biological Environment).	None.	n/a
638	Northwatch	“...cultural resources that may be affected by the Project were identified, including a wildlife point (bald eagle nest), Portage route, waterfowl hunting route and a waterfowl hunting point... Other resources that may be used by the Mattagami and Flying Post First Nation in the Project area include pickerel, moose, ducks, partridge (grouse), and blueberries... Twelve cultural heritage landscapes and 19 built heritage resources were identified within the regional study area. These landscapes are: five remnants of Culturally Modified Trees (CMT) that served as Aboriginal and early EuroCanadian trail markers; and seven remains of early trail systems, reflected today in open corridors through wooded areas. [EIS page ES-19] The EIS summary identifies numerous cultural values that could be adversely impacted by the Project, but provides no discussion of protection or retention strategies.	The Executive Summary is a high level document, which is not intended to provide full details of the Project. Mitigation measures for cultural values are provided in Table 10-3 (Mitigation Measures - Human Environment).	None.	n/a
639	Northwatch	High commodity prices have strengthened the regional study areas economy over the last decade, particularly in urban areas, which have also benefited economically from their role as regional service hubs. [EIS page ES-20] The description of the regional and local economy appear to be wholly focused on the mining industry, rather than the whole economy. For example, the descriptions of the regional economy contain no discussion of the greatly diminished forest industry, and the shrinking effect that the collapse of the forest industry has had on the economy of northern Ontario.	The regional and local economy is discussed in Section 6.5.6 (Socio-Economics) as well as Appendix T (Socio-Economics TSD). Appendix O (Land and Resource Use TSD) discusses the effects of the Project on land and resource use, including the forestry industry. Section 9.10 summarizes these effects, applicable mitigation measures are provided in Chapter 10, and land use impacts are assessed in Chapter 11.	None.	n/a
640	Northwatch	From an overall perspective, the preferred alternative is to proceed with the Project in the near term. Although there is essentially no differences in environmental effects associated with the alternative of proceeding with the Project as planned versus timing commencement of the Project with improved market conditions. ES 22 Operating a mine at the economic margin can have serious environmental and social implications, and the various scenarios should be addressed in detail. For example, the current site layout is extremely broad brush, and gives no indication that the tailings, waste rock and low grade ore stockpile would be designed to “grow” in stages, and accommodate non-continuous operations. In economically marginal mines, particular attention should be paid to the sequencing of operations. For example, potentially acid generating material should be identified and processed early in the operating life of the project, so when the “early shutdown” occurs, the material of concern is already located in a portion of the site where it can be encapsulated in non-acid generating material, or subject to other isolation and containment technologies. There is no indication that this is part of the operating strategy for this project, despite it being a clear candidate for every strategy that could be pro-actively applied in an economically marginal mine to minimize environmental impacts that could be associated with early or unplanned shutdowns.	Mining projects in Ontario are subject to the <i>Mining Act</i> which requires a Closure Plan which includes the provision of financial assurance. Should the Project be closed out or placed in a state of care and maintenance, this financial insurance mechanism would be initiated, should, for some reason, company funds no longer be available.	None.	n/a
641	Northwatch	Table ES 2: Summary of Alternative Methods for the Project (contd) GENERAL The table lacks any substantive support, including references or actual data.	Table ES-2 is intended to explain the alternatives at a very high level, along with the primary reasons that preferred alternatives were selected. Full details for the assessment of alternatives are provided in Chapter 7 (Description of and Rationale for Alternatives).	None.	n/a
642	Northwatch	Like IAMGOLD’s 2013 project description, the EIS summary included no mention of the extensive disturbance already on site, and the considerable infrastructure that was established by its predecessor Trelawney Mining, including the establishment of treatment ponds prior to any permit having been issued and the development of extensive mining infrastructure prior to even applying for advanced exploration permit (i.e. a closure plan for advanced exploration)	The comment has been noted. IAMGOLD is currently closing the Chester 1 site. IAMGOLD is committed to operating the future Project in full compliance will all applicable Federal and Provincial legal requirements.	None.	n/a

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643	Northwatch	Like IAMGOLD's 2013 project description, the EIS summary does not include any discussion or description of the historic mining activities on the properties and any related environmental legacies, including from production from the Young-Shannon, Murgold- Chesbar, and Jack Rabbit properties and as may be associated with the various optioned properties, such as the Sheridan Option	The comment has been noted. IAMGOLD is operating the current site and is committed to operating the future Project in full compliance will all applicable Federal and Provincial legal requirements. Section 5.2 of the Amended EIS / Final EA Report describes existing facilities and infrastructure. Additionally, baseline studies are reflective of the surrounding natural environment at the time the studies were conducted. The Young-Shannon headframe has been removed, capped and certified as closed. Mine rock from the Young-Shannon property has been tested, and placed in a fashion to avoid negative environmental effects.	None.	n/a
644	Northwatch	Like IAMGOLD's 2013 project description, the EIS summary does not include discussion of the development known as "the Chester Property, including the "Chester 1 zone", or the several other contiguous m mining properties assembled by Trelawney and acquired by IAMGOLD, which – if to be developed – require consideration as part of a cumulative effects assessment of the Côte Gold Project	The comment has been noted. IAMGOLD is operating the current site and is committed to operating the future Project in full compliance will all applicable Federal and Provincial legal requirements. Section 5.2 of the Amended EIS / Final EA Report describes existing facilities and infrastructure. Additionally, baseline studies are reflective of the surrounding natural environment at the time the studies were conducted. IAMGOLD is in the process of closing the Chester 1 property. The cumulative effects assessment considers operations that have a reasonable chance of being developed. The Chester 1 property does not have this potential and is therefore not included in this assessment.	None.	n/a
645	Northwatch	Northwatch retained Mr. Wm. Paul Robinson to review the potential for acid mine drainage related to this project. The appropriate prediction and management of acid mine drainage is a key concern, given the long lasting impacts of acid generation and associated metal leaching. The following section outlines Mr. Robinson's findings, beginning with a summary identification of key concerns which are outlined in more detail later in this section: <ul style="list-style-type: none"> ▪ Sulfide minerals occur in most rock types that represent the bulk of material proposed for extraction at the Côte Lake project ▪ Concerns about adequacy of kinetic testing of acid generation potential ▪ Concerns about adequacy of acid generation sampling and analysis methods ▪ Humidity cell tests have not been conducted for all rock types with sulfide mineral content identified at the Côte Lake site. ▪ The humidity cell tests described in App E are not complete as tests of 34 week duration are not sufficient for a full test of long-term acid generation potential and data in App E was only reported for 30 weeks ▪ Rising trends for metal releases from Humidity Cell tests are not acknowledged or addressed in Draft EA ▪ IMG sampling for acid generation potential does not include samples from large portions of the proposed open pit ▪ Concerns about underestimating PAG material and lack of reasonable use of best management practices to isolate PAG materials from the environment ▪ The Draft EA fails to consider alternatives to the proposed scale of mining to be conducted as the current the price of gold is significantly less than the price that would support "reasonable prospects for economic extraction" as identified by IAMGOLD Consultants ▪ Cost and financial guarantee for chemical treatment of mine water identified as a contingency are not identified 	Responses to the detailed comments have been provided below. Please see responses to Comments #646 to 657.	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
646	Northwatch	<p>The scope of the Côté Gold Mine Project addressed in the Draft Environmental Assessment (Draft EA) Project Description (Doc number 99215E) at p. 5-2 is:</p> <p>“The current open pit design proposes a final pit measuring approximately 210 ha (2.1 km²) with a depth of approximately 550 m. Open pit mining will occur at a mining rate of approximately 60,000 tonnes/day (tpd) of ore production. Extraction of the ore through pit development will result in the production of an approximately estimated 20 million tonnes (Mt) of overburden and 850 Mt of mine rock. As currently proposed, open pit mining will occur over an approximate 15 year period.”</p> <p>Based on this description, the project proponents propose to generate 850,000,000 tons of waste rock and 20,000,000 tons of overburden. As described, project proponents propose to generate roughly 300,000,000 tons of tailings as they operation at 60,000 tons/day for 15 years. (60,000 tons per mill throughput x 15 x 365 = 328,500,000 tons of tailings)</p>	<p>The summary of mineral waste tonnages provided in the comment is generally correct. However the TMF is intended to store approximately 261 Mt of tailings. This is because the process plant will not always operate at peak throughput; there were also be a period of production ramp up during the early operations phase and a period of ramp down during the late operations phase. The total storage capacity of the TMF, provided above, is correct and is based on the actual geometry of the ore body.</p>	None.	n/a
647	Northwatch	<p>4.1 Sulfide minerals occur in most rock types that represent the bulk of material proposed for extraction at the Côté Lake project.</p> <p>A wide variety of sulfide minerals have been identified in the waste and mineralized material at the Côté mine site.</p> <p>The Draft Environmental Assessment for the Côté mine project (DEA) Appendix E – Geochemical Characterization Report (App E) p.3-3 – reports that pyrite and chalcopyrite and other sulfide minerals occur in most rock types.</p> <p>Pyrite, an iron sulfide mineral, and chalcopyrite, a copper iron sulfide mineral, are identified in most of the rock types listed in App E Section 3.4 (p. 3-1) including tonalite, breccias – including hydrothermal breccia, dioritic magmatic breccia, magmatic mixing breccia, and heterolithic quartz carbonate breccia, diabase dykes, mafic dykes, intermediate and felsic dykes,</p>	<p>The comment has been noted. No changes to the EA are required.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
648	Northwatch	<p>4.2 Concerns about adequacy of kinetic testing of acid generation potential</p> <p>Kinetic testing of acid generation potential is critically important to acid generation potential investigation as it is the means for assessment of long-term acid drainage potential.</p> <p>The acid drainage production guidance referenced in App E is "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials," MEND/NEDEM, 2009 (MEND 2009). At p. 18-1, MEND 2009 reports that, "for sulphidic geologic materials, the well-flushed humidity cell is the recommended kinetic test for predicting primary reaction rates under aerobic weathering conditions."</p> <p>App E states, at p. 22, that, "there are no criteria that are directly applicable to assess metal leaching data from kinetic tests such as humidity cells or field test cells. Kinetic test results must be interpreted and are informative in terms of rates of sulphide oxidation, neutralization potential depletion and metal leaching rates; site-specific PAG and NPAG thresholds; and interpreted timing of the onset of acidic conditions in PAG materials."</p> <p>MEND 2009 provides criteria that are directly applicable to assessing metal leaching data from kinetic test such as humidity test and field test cells. No rationale for ignoring criteria identified in MEND 2009 particularly since that document is cited in App E.</p> <p>MEND 2009 states:</p> <p>"One of the major problems with humidity cell work in the past was the short duration of the tests. Kinetic tests should be operated until weekly rates become relatively stable. For humidity cells, this can require at least 40 weeks of testing and may require more than a year. In order to remove the effect of natural weekly variations, stable rates are arbitrarily defined as the average of the last five weeks of testing. Rates should be compiled into a table for ease of prediction and for reporting.</p> <p>"Calculations of the time to NP depletion and ARD onset include the inherent assumption that the measured "stable" rates will persist. This allows the results to be extrapolated into the future. Unfortunately, there is very little long term data to check this assumption.</p> <p>"Studies have indicated that stable rates from humidity cells can persist within a factor of two for at least five years (Day, 1994). Rates can not remain the same forever; however, if the mineralogical data shows the contributing minerals will not be exhausted, it can be assumed that the calculated rates, which will be used for predictions of drainage chemistry, will persist for decades. The accuracy of this assumption can be addressed by ongoing testing and monitoring." MEND 2009 p. 18-12, p. 486 of 579) (Emphasis added).</p> <p>In contrast to the length of humidity cell testing recommended in MEND 2009, the humidity cell test data described in App E was described as being compiled for a 34 week-long period (see App E p. 5-4) but reported as 30 week data in App E's Appendix B.</p> <p>This length of time for data collection is inappropriately short for determination of acid drainage potential using humidity cell testing methods according to the guidance document cited in App E.</p> <p>IAMGOLD should be required to report the results of continued humidity cell testing following the 34-week period addressed in App E and continue humidity cell testing for a period of 2 – 5 years, or until measured stable results persist.</p>	<p>Comments have been noted.</p> <p>In regards to the text on p 22 of Appendix E (Geochemical Characterization Report) regarding criteria for comparison to humidity cells and field test cells, there are no regulated values that are legally binding to concentrations or loadings of parameters measured in the discharge from kinetic tests such as humidity cells or field cells. The concentrations of parameters from these tests are occasionally compared to regulated values (such as PWQO or MMER) to provide some guidance. However, those results have no regulatory significance. The results from these tests are best used to estimate loadings due to the oxidation and weathering of the materials under study.</p> <p>Results from ongoing geochemical testing have been provided in the Addendum to Appendix E (Geochemical Characterization Report).</p>	<p>Updated results from ongoing geochemical testing have been provided in the Addendum to Appendix E (Geochemical Characterization Report)</p>	<p>Addendum to Appendix E (Geochemical Characterization Report)</p>

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649	Northwatch	<p>4.3 Concerns about adequacy of acid generation sampling and analysis methods</p> <p>IAMGOLD, in App E, provides only 14 humidity cell tests to represent more than 810,000,000 tons of mine rock, a sample density that does not provide for either spatial or mineralogical diversity in the mine rock.</p> <p>App E at p. 5-3 says, "Humidity cell testing was conducted on fourteen composite samples selected by Knight Piésold. The humidity cells consisted of composite samples of 3 to 4 segments of half-core ranging from 2 to 6 m in length. The cells contain material from four lithological rock units, including tonalite, diorite, diorite breccia and magma mixing breccia."</p> <p>One humidity cell test IAMGOLD determined was potentially acid generating in App E that says, "For HC5, the time to NP [neutralizing potential] depletion was calculated to be approximately 50 years." (App. E – p.7-11)</p> <p>Given that the mine rock has been determined to have acidic generating potential and other major rock types in the mine rock contain sulfide minerals, too few humidity cell tests have been conducted to reflect the variety with the rock types at the project.</p> <p>The mere 14 humidity cell test are not a sufficient number of tests to responsibly represent diversity within the rock types at the proposed project.</p> <p>Of the 810,000,000 tons of mine rock proposed to be extracted at the project, IAMGOLD lists Tonalite is represented as 64% of in pit mine rock, Diorite as 20% of mine rock, diorite breccia as 7.9% and magma mixing breccia as 1.1% of mine rock (App E at p. 5-9). These 14 tests are represented as reflecting acid generating potential for up to 518,000,000 tons of tonalite, 162,000,000 tons of diorite, 64,000,000 tons of diorite breccia and 8,910,000 tons of magma mixing breccia.</p>	<p>IAMGOLD is committed to an ongoing program to test and monitor the metal leaching / ARD characteristics of the mine rock including continued operation of laboratory waste rock humidity cells. This commitment also extends to the operation of larger (ca. 250 kg) field cells to provide additional data expected to be more characteristic of field conditions.</p> <p>Humidity cells have been selected in consideration of spatial and predominant lithological variation within the pit and with reasonable assumptions regarding low apparent geochemical variability in sulphide type and content across lithotypes. Larger drill core intersections of major lithologies represented in the field cells substantially add to the kinetic data presently being collected.</p> <p>Characterization of the geology and geochemical understanding of the deposit will continue and evaluation of the need for modifications or additions to kinetic testing programs will be completed as necessary.</p> <p>Please also refer to Comment #470.</p>	None.	n/a
650	Northwatch	<p>4.4 Humidity cell tests have not been conducted for all rock types with sulfide mineral content identified at the Côté Lake site</p> <p>Rock types with identified pyrite or chalcopyrite or other sulfide mineral content included Tonalite, Breccias – including hydrothermal breccia, dioritic magmatic breccia, magmatic mixing breccia, and heterolithic quartz carbonate breccia, diabase dykes, mafic dykes, intermediate and felsic dykes. Therefore humidity cells tests have not been conducted for all sulfide mineral containing rock types identified in the proposed pit including hydrothermal breccia, and heterolithic quartz carbonate breccia, diabase dykes, mafic dykes, intermediate and felsic dykes. See App E p. 3-1 – 3-13, P. 16 – 18</p> <p>An additional suite of long-term humidity cell tests should be conducted to insure all rock types with identified sulfide mineral content at the Côté Lake project site are subject to long-term humidity cell tests and that the full range sulfide mineral content for each rock type are subject to representative long-term kinetic tests of acid generation potential.</p>	See response to Comment #470.	None.	n/a
651	Northwatch	<p>4.5 The humidity cell tests described in App E are not complete as tests of 34 week duration are not sufficient for a full test of long-term acid generation potential and data in App E was only reported for 30 weeks</p> <p>App E at p. 7-10, p. 58, says, "...Fourteen humidity cell were initiated by Knight Piesold in December 2012 and 34 weeks of data has been collected and analyzed to date."</p> <p>The graphics presented as figures in App B of App E, beginning at p. 169 of 666 of App E, show the humidity cell data shows only 30 weeks of data, more than 10% less than 34 weeks that reported on App E p. 7-10, p. 58. This difference is not acknowledged in App E or elsewhere in the Draft EA.</p>	The comment has been noted. No changes to the EA are required.	None.	n/a

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652	Northwatch	<p>4.6 Rising trends for metal releases from Humidity Cell tests are not acknowledged or addressed in DEA</p> <p>Humidity cell metal release rate data presented in App B of App E showed rising trends for six metals and other constituents loading in the 25th -30th week after start of humidity cell monitoring. These include rising trends for the following HC samples:</p> <ul style="list-style-type: none"> ▪ HC-11 Diorite Breccia for Copper – Graphic B-14 (p. 197); ▪ HC-2 Tonalite for Molybdenum Graphic B-19 (202); ▪ HC-1 Tonalite, HC-2 Tonalite (and perhaps HC-7 Magma mixing Breccia) – Phosphorus graphic B-22, (P. 205); ▪ HC-11 Diorite breccia and HC-3 Tonalite for Lead Graphic B-23 (p. 206); ▪ HC-6 – Tonalite and other not identifiable for – Antimony Graphic B-24) p. 207; ▪ HC-1 Tonalite for Zinc Graphic B-36 (P. 219) <p>These examples of humidity cell test data with rising metal or other constituent concentration trends are identified for 6 of the 13 humidity cell samples other than the cell HC-5 that is acknowledged to have acid generation potential in App E.</p> <p>As humidity cell tests are designed to study long-term rates of acid generation potential, the tests reported have not been conducted for a sufficient length of time to determine the acid generation potential of the mine rock at the Côté Lake project.</p> <p>Trends indicating rising metal concentrations, or concentrations of other constituents of concern is not acknowledged in App E, much less considered for their implications for long-term acid drainage potential.</p> <p>IAMGOLD should present all data gathered from humidity cell tests and identify data reflecting rising trends in release of metals from those tests.</p>	<p>These apparent trends commented on by the reviewer represent single values that have increased by one measurement unit on the graphs at the end of the published monitoring period. In most cases the data for these parameters are at or near detection limit and the values have increased by one measurement unit. This type of variation is not uncommon near the detection limit and is often the product of analytical variability at low concentrations. Although there is a possibility that these single values may represent the beginning of a trend, it would be premature to state that these are in fact rising trends.</p> <p>Monitoring of the humidity cells and field cells will continue in order to determine long term trends in sulphide oxidation and metal release. Results of ongoing geochemical testing have been provided in the Addendum to Appendix E (Geochemical Characterization Report).</p>	Results of ongoing geochemical testing have been provided in the Addendum to Appendix E (Geochemical Characterization Report).	Addendum to Appendix E (Geochemical Characterization Report)
653	Northwatch	<p>4.7 IAMGOLD sampling for acid generation potential does not include samples from large portions of the proposed open pit</p> <p>Figures 6 and 7 in App E at p. 136 and 137 of 666 show the location of samples used in the acid generation potential investigation by IAMGOLD. These figures show that large areas of the pit, particularly around the perimeter of the pit, have had no samples analyzed in the Geochemical Characterization Report – App E.</p> <p>The Draft EA and Geochemical Characterizations Report should be revised to include data from samples that represent the full range of material to be encountered during the proposed project, not merely readily available samples from previous drilling activity. No figure are included that illustrate whether the sampling program described in App E includes all the rock types in the proposed pit as neither the DEA nor App E include plan or cross-sectional views that illustrate the distribute of rock types in the proposed pit.</p>	<p>The results of the geochemical characterization study indicate that the bulk of the mine rock in the vicinity of and constituting the Côté orebody is non-acid generating with a low sulphide content. Based on the geological and resource investigations conducted for the Project, rock that is peripheral to the orebody on the perimeter of the proposed pit is anticipated to be non-mineralized and also to be non-acid generating.</p> <p>However, ongoing development of the Project will include additional sampling and testing of the peripheral rock volumes to assess their acid generation potential.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
654	Northwatch	<p>4.8 Concerns about underestimating PAG material and lack of reasonable use of best management practices to isolate PAG materials from the environment</p> <p>The DEA describes the acid generation potential at the Côté Lake Project as ranging from none to 8% of the mine rock projected for extraction.</p> <p>At P. 5-43, the Draft EA PD states, "Current geochemical analyses indicate that mine rock is non-acid generating (NAG)."</p> <p>The Draft EA at p. 5-18 states, "In general, the majority of the rock analysed to date from the open pit area (92%) is not acid- generating and it is expected that the tailings will be non-acid generating; however, further testing is currently ongoing to better characterize the acid generating potential of the ore and the processed tailings."</p> <p>No information on the nature and scope of additional testing or when data from additional testing may be available for review and analysis.</p> <p>Rising trends in metal releases from humidity cells other than HC-5 reported in App B of App E appears to show that a significantly larger fraction of the material tested may have acid drainage potential that acknowledged by IAMGOLD in the DRAFT EA.</p> <p>The volume of potential acid generating material identified by IAMGOLD is large and should be managed using "best management practices" for prevention of acid generation in waste rock such as segregation or isolation of potentially acid generating material, rather than merely mixing that material in with other mine waste as is proposed in the DRAFT EA.</p> <p>If the 92% non-acid generating assumption is correct, then on the order of 64 million tons of mine waste is acknowledged to have acid generating potential by IAMGOLD.</p> <p>Sadly, the Draft EA propose no specific management practices for this material, as the DEA Project Description (PD) at p. 5-6 at p. 6 of 50 (and elsewhere):</p> <p>"Considering the limited proportion of PAG samples identified, the overall low sulphide content of the rock, and the prevalence of non acid generating rock to be produced as waste, the likelihood of net acid conditions occurring in the mine rock piles is considered to be very low. Therefore the inclusion of any PAG materials with the bulk of the waste will likely be an appropriate management method and segregation of any PAG materials does not appear to be necessary."</p> <p>IAMGOLD fails to identify when the 64 million tons of potentially acid generating rock it has identified will be produced from the mine and where it will be placed in the waste rock and low grade stockpiles. Failing to propose methods for identifying and segregating potentially acid generating rock during the life of the mine should not be considered a best management practice. In the alternative, IAMGOLD should be required to identify and segregate potentially acid generating rock as it is removed from the pit for the life of the project.</p> <p>Similarly the Draft EA fails to identify any increased cost associated with segregation of PAG material, encapsulation in low acid generating material, or any other methods to minimize potential for acid generation</p> <p>Rising trends in metal releases from the 6 humidity cell tests indicate potential for significantly more acid generating rock at the project site than acknowledged in the DEA.</p> <p>IAMGOLD's mine plan ignores the Precautionary Principle and fails to provide a management strategy to address the currently identified PAG, much less any PAG material that may be identified in future testing.</p>	<p>IAMGOLD is committed to an ongoing program to test and monitor the metal leaching / ARD characteristics of the mine rock and tailings at the Côté Gold Project.</p> <p>IAMGOLD disagrees with the reviewers comment regarding "Rising trends in metal releases". The single sample point increases observed in a few of the humidity cells do not constitute a rising trend and do not imply that a "significantly larger fraction of the material tested may have acid drainage potential". Please also see response to Comment #652.</p> <p>Please see responses to Comments #75 and 139.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
655	Northwatch	<p>4.9 The Draft EA fails to consider alternatives to the proposed scale of mining to be conducted as the current the price of gold is significantly less than the price that would support “reasonable prospects for economic extraction” as identified by IAMGOLD Consultants</p> <p>IAMGOLD considers “cost effectiveness” an important basis for it selection among Côté Lake project design alternatives without defining cost-effectiveness in an meaningful way, and without providing any detailed analysis of life cycle costs or other measures of cost effectiveness for facility units. See Section 7 Alternatives (99217E) at p. 7-4 that says, “Cost-effectiveness relates to the overall Project costs, including capital, operation, maintenance, and closure/reclamation costs.”</p> <p>Cost effectiveness is certainly a critical aspect of any commercial project and IAMGOLD has not addressed cost effectiveness in a serious, either quantitative or detailed, way in the consideration of alternatives.</p> <p>Cost effectiveness of the Côté Lake Project as proposed appears to be in serious jeopardy as the current, mid-2014, gold price is well below the gold price used by IAMGOLD contractors to establish “reasonable prospects for potential extraction” of the mineral resources at the site prescribed in CIM NI43-101 Guidelines and reported in the Technical Report on the Côté Lake Project, Chester Township, Ontario, Canada. NI 43-101 Report, October 2012 (2012 TR).</p> <p>The high cost of mining relative to the price of gold is identified in the 2012 NI43-101 Côté Lake Project Technical Report (2012 TR) conducted for IAMGOLD (IAMGOLD) identifies “reasonable prospects for economic extraction” based a gold price of \$1600/oz. See 2102 TR p. 14-1, p. 133 of 207.</p> <p>The stagnation of the gold price at less than \$1400/oz for the past two years is likely to result in the need for consideration of alternatives for the project with a much more serious sense of “cost effectiveness “ than that provided in the Draft EA.</p> <p>IAMGOLD will, as a business matter, need to reconsider the project design, project scheduling and the projected operating capacity if it is to establish “reasonable prospects for economic extraction” anywhere near, much less, below recent gold prices.</p> <p>The Draft EA fails to reflect the implications of current market conditions to the proposed Côté Lake project.</p> <p>Project revisions are likely to include consideration of a smaller, high grade pit with “reasonable prospects for economic extraction” based on a gold price at or sufficiently below projected gold prices to attract investment in the project. Such a high grade pit design will change the distribution of rock types to be generated at the site and may increase the percent of mine rock that is potentially acid generating</p> <p>The reduction in size of the pit waste rock and tailings facilities and the high potential for intermittent - stop and start - operations that are market price-driven will result in very different conditions at the project that that proposed in the Draft EA however no alternative to the proposed scale of the project are identified or evaluated.</p> <p>Due to the large difference between recent gold prices and the gold price that would support “reasonable prospects for economic extraction,” IAMGOLD is likely to defer of construction and operation of the facilities proposed as long as gold prices continues below the price identified for “reasonable prospects for economic extraction” at Côté Lake.</p> <p>Identification of the portions of the mineral deposit that would provide “reasonable prospects for economic extraction” at the property under current and reasonably foreseeable market conditions are likely to require elimination of the a significant volume of low grade material from extraction and processing through increasing the gold content cut-off grade for the material to processed by the project.</p> <p>Comment continues on next page.</p>	The comment has been noted. No changes in the EA required.	None.	n/a

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655 cont	See previous page.	<p>As the 2012 TR cut-off grade for “reasonable prospects for economic extraction” at \$1600/oz was projected at 0.3 g/t, identification of portions of the deposit that might have “reasonable prospects for economic extraction” at current gold prices is likely to result in a higher cut-off grade than 0.3% and a substantial portion of the >0.3% g/t Au material being managed as waste rock or in the “low grade” stockpile.</p> <p>As this additional waste material would be exposed to oxygen and moisture if the cut off grade is raised to limit processing to higher grade (and potentially lower cost per oz to produce Au) it should be subject to acid generation potential testing for as waste rock, not as process tailings. IAMGOLD eliminated all >0.3 oz/ton mineralized rock from humidity cell testing.</p> <p>IAMGOLD should be required to conduct long-term humidity cells tests on 0.3 – 0.5 g/t and 0.5 – 0.7 g/t material eliminated from the humidity cell testing as noted at App E p. 5-2 as that material is likely to fractured in place and exposed to the elements or managed as waste rock or “low grade mill feed” whether in alternative pit configurations not considered in the Draft EA. The alternatives include a resized higher grade configuration of the pit, potential long-term stand-by conditions associated with start and stop operation cycle reflecting gold price constraints, or early termination of operations not in the DEA.</p>	See previous page.	See previous page.	See previous page.
656	—	This comment number has not been assigned.	—	—	—
657	Northwatch	<p>4.10 Cost and financial guarantee for chemical treatment of mine water identified as a contingency are not identified</p> <p>Though IAMGOLD proposes no management practices to isolate or encapsulate potentially acid generating material, it does acknowledge the possibly that a chemical treatment plant for contaminated mine waters may be needed. The PD also provides that, at p 5-8,</p> <p>“In the case of mine rock, provide for an optimal closure scenario for potential ARD/ML management using passive systems to the extent possible, but with a contingency arrangement for chemical treatment if and where required.”</p> <p>The Draft EA fails to provide cost estimates for the chemical treatment system that may be required as a contingency or identify how this contingency will be incorporated into any financial guarantee associated with the project necessary to guarantee effective closure and post- closure actions at the site.</p>	The amount of PAG material at the Project site is very low (<5%). The buffer potential of the mine rock will neutralize any acid that might theoretically be generated within the MRA. As such, treatment of seepage from the MRA is not anticipated, but is mentioned as a theoretical contingency. Should, by the time the Closure Plans are developed, studies show that chemical treatment may be required, the costs for operating and eventually closing out this facility would be developed as part of the closure plans. It is not within the required scope of an EA to estimate or provide treatment costs.	None.	n/a
658	Northwatch	<p>5. Review of Fisheries Impacts</p> <p>Northwatch retained Mr. Muhammad Yamin Janjua to review the potential for fisheries impacts related to this project, particularly associated anticipated request to use a natural water body for the deposit of mining wastes and the anticipated loss of several water bodies inhabited by multiple fish species if this project were to proceed as currently proposed. The following section outlines Mr. Janjua’s findings, beginning with a summary identification of key concerns which are outlined in more detail later in this section:</p> <ul style="list-style-type: none"> ▪ The project activities have potential to affect fish, fish habitat and aquatic species that are covered by the <i>Fisheries Act</i>. Most of these activities and potential impacts are covered in the EIA report. ▪ Fish baseline survey methodologies are not consistent, sample size is small, and fish & habitat analysis were conducted in summer season only. ▪ Proper information on fish population dynamics, other value aquatic ecosystem components and productivity is lacking. ▪ Compensation plan is not available and information provided is insufficient to exhibit success in realignment and restoring aquatic resources as required by the <i>Fisheries Act</i>. 	Detailed responses to the concerns summarized in Comment #658 are provided in responses for Comments #659 to 676.	None.	n/a

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659	Northwatch	<p>5.1 Baseline Information</p> <p>The EIA document and additional information provided have indicated the possible effects of the development of a gold mine and related infrastructure components expected to affect fish communities and the habitat, and how those effects will be mitigated and compensated. The objective of habitat compensation measures associated with the project is to create habitat which achieves the biotic and abiotic habitat requirements of the resident fish species and minimizes the risk of adverse effects to the environment. It requires a detailed quantitative fish and fish habitat assessments of water bodies requiring compensation in order to assess the quality and extent of habitat that will potentially be lost. The Aquatic Biology Technical Support Documents (Appendix N), Aquatic Baseline Report (Appendix C) and Water Quality Technical Support Document (Appendix J) provides a database on which EIA for fish and fish habitat is based. The aquatic biology baseline survey methodology to study fish population dynamics is not standard and constant, and the sample size is very small.</p> <p>Most of the baseline data was collected during the summer months only and no studies were done during the spawning season. Important information on fish population dynamics are lacking. Much of the information on fish biology and ecology is literature based and enough field studies were not done on other important aspects of fish biology. Some valued aquatic ecosystem components are missing in baseline study. No clear information is provided about the productivity of these water bodies.</p>	<p>Baseline water, sediment, benthos and fish data were collected during August through September 2010 (AMEC 2011), July 2012, and in June and September 2013 (Minnow 2014). In addition, routine water quality monitoring (monthly or quarterly) was initiated in 2011 and continues to be collected through 2014. Although no specific spawning surveys were conducted, the key resident fish species within the local study area are well documented in the literature and their spawning requirements are well known. Smallmouth bass were observed protecting their nests during the fishing survey of June 2013 in Clam Lake. Since the local fish species typically don't migrate far distances to spawn (will typically spawn with the lake or the tributaries to the lake / stream), the available habitat was summarized and compared to known life history stage requirements. Focused population dynamics were collected on lakes that were thought to be most impacted by development at the time of the survey. Population surveys were conducted on Côté Lake and Unnamed Lake #1. When the baseline work was initiated in 2012, the final location for the TMF was not selected and there was a potential that Unnamed Lake #1 would be lost. General fish community composition was provided for the remaining lakes where general population dynamics could be characterized from catch-per-unit-data (e.g., dominant species found within the lake / stream section). Weight-length relationships as well as length-at-age relationships were explored for the local study area. It is not expected that the growth from lake to lake would vary significantly. Lastly productivity of the lakes were documented through Secchi depth readings, nutrients in water quality, in addition to chlorophyll a, total phosphorus and nitrogen measurements. The lakes within the local study area were categorized as being mesotrophic with an intermediate level of primary productivity.</p>	None.	n/a
660	Northwatch	<p>Issue #1: Fish collection and estimation methods</p> <p>Reference: Aquatic baseline report</p> <p>Concern: Fishing equipment and techniques are provided in Table 2.2 (Appendix C, Appendix N). It appears that experimental gillnet used for survey were not of standard mesh sizes required for index gill netting. Maximum mesh size was 4". No detail of mesh size except minimum and maximum size is provided. Not using standard walleye index gillnets may have created a bias towards less abundance of walleye and whitefish. Standard index gill netting recommends 8 sites in a water body < 200 however, experimental gill netting was done on 2-3 sites in each water body except for Côté Lake. The duration of gillnet setting was not sufficiently long enough to catch representative number, if their abundance was low. There is no information on depth of gillnets or other fishing gears used per water body. Electrofishing details are also lacking (current used, settings). This inconsistency and lack of details will make it difficult for stakeholders to compare results across the sites, as a benchmark from which change can be quantified, compare the different project phases and be assured that the aquatic resources are restored as required by the <i>Fisheries Act</i>. Were the standards for index gill netting, electrofishing, and trapping followed? A rationale behind the methods and techniques, sample size, and frequency is lacking.</p>	<p>Experimental gill net mesh size varied from 1" to 5" (see Appendix N; Aquatic Biology TSD, Appendix C, Appendix F, Table F.1 to F.12) for each individual net set and fish caught in each mesh size. All nets were set at a variety of depths and habitat within each lake to specifically avoid targeting a single species or size of fish. Gill net sets typically varied from 1 (in very small ponds) to 7, however a variety of fishing techniques were employed in each water body to ensure fish from the entire fish population in the lake were represented. Fishing was also conducted with minnow traps, hoop nets, seining and electrofishing (boat and backpack depending on the water body). The majority of the gill nets were set overnight, however the net sets within Côté Lake and Unnamed Lake #1 were kept very short as they were incorporated into the population survey and thus required that the fish remain alive. In addition, the weather during the summer survey in 2012 was very warm (daytime temperature in excess of 30° C) and efforts were focused on reducing fish mortality. Water depth and electrofishing settings were not summarized in the Appendix Tables, however all the data was collected, and all the data was reported in a standard catch-per-unit-effort so that water bodies could be directly compared across the local study area.</p>	None.	n/a

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661	Northwatch	<p>Issue # 2: Fish population dynamics</p> <p>Reference: Aquatic Baseline Report (Appendix N, 6.2)</p> <p>Concern: To monitor potential changes in fish populations resulting from physical, chemical, or biological stressors in the LSA, fish population attributes such as growth, reproduction, and survival need to be monitored. Fish baseline studies conducted to examine trends in abundance and population variables for key indicator fish species may be not enough. Length and age frequency data could be helpful in identifying the age or size classes potentially affected by stressors in the environment. However, no such data is available from the baseline study. Length was measured for selective subsamples only. Age studies were done for only 5 fish per water body (Appendix N, 2.2.4) and that was not the standard otolith age. This data is insufficient and cannot provide adequate baseline information on fish growth. Experimental gillnetting was conducted on 2-3 few sites in each water body for short duration and may not provide true relative abundance (CPUE) for large bodied fish except for the Côté Lake. No proper data was collected on fish sex ratio, maturity and reproduction.</p>	<p>Fish population attributes such as growth, reproduction, and survival will be monitored as part of the Federally regulated EEM program. Length, weight and age data were reported for all fish measured during the 2012 and 2013 field surveys and can be found in Appendix N (Aquatic Biology TSD), Appendix C, Appendix F, Tables F.26 to F.45. Sample sizes do vary from lake to lake, however typically more than five fish were aged per water body to confirm length frequency. Typically five fish were aged per dominant species within a lake and depending on the number of fish caught, up to ten fish per species were measured. In many lakes sample sizes were much more than this. Appropriate aging structures were collected and used specific to each species being assessed (i.e., dorsal spines for walleye, cleithra for northern pike) for age determination. Fish mortality was kept to a minimum, and sex was noted when it could be determined. Many fish were sampled during the spring (June) post spawning and therefore had insufficiently developed gonads to allow for measurement.</p>	None.	n/a
662	Northwatch	<p>Reference: Fish and Fish Habitat/ Aquatic Baseline Report</p> <p>Concern: Base line survey and monitoring was not done every season and most of the sampling was conducted in July 2012, and June and September 2013. Therefore this baseline data may not represent the seasonal changes and conditions during fall, winter and spring. The document hasn't mentioned any survey conducted in spring or fall. One season information may not be enough to design proper compensation plan. Further field studies are required especially in the spawning season of large bodied fish.</p>	<p>See response to Comment #659. Benthic sampling was conducted in the fall as this is the best season to undertake a benthic survey as recognized by Environment Canada (2012). Fishing was conducted in the late spring (2013), summer (2010 and 2012) and fall (2013). Water sampling was collected monthly and continues to be monitored on a monthly or quarterly basis.</p>	None.	n/a
663	Northwatch	<p>Issue # 5: Fish Spawning Survey</p> <p>Reference: Fish habitat</p> <p>Concern: The EIA and Appendix C (6, Table 2.4, Table A1) provide some information about the spawning habitat requirements and locations of some large body fish species. However, the supporting document doesn't mention any survey in spring or fall, i.e. the spawning season of many large body fish species. The identified spawning locations are assumed on the basis of literature description. The document mentions that the created habitat will be designed to meet the spawning, rearing and overwintering requirements of the resident fish (Table 9.8). However it appears that no actual field observations on maturity and spawning were made. Therefore, there is uncertainty with the information provided, especially for lake whitefish and walleye, for whom spawning habitat is already limited and expected to be affected by the project activities. A special survey during spawning months may be useful in providing additional information.</p>	<p>The identified spawning locations are based on documented preferences / requirements in the literature and survey observations of habitat conditions. Juvenile young-of-the-year northern pike were observed in June, along with smallmouth bass being observed guarding their nest providing evidence that spawning occurred within these areas. The use of habitat is more conservative as IAMGOLD assumes complete usage within a water body.</p>	None.	n/a
664	Northwatch	<p>Issue # 6: Impact of project activities on benthic invertebrates</p> <p>Reference: Fish Habitat</p> <p>Concern: Aquatic invertebrates are one of the most sensitive to environmental contaminants and are used as indicators of environmental degradation. Baseline study includes sampling and characterizing benthic invertebrates in all potentially impacted lakes and streams. Benthic invertebrate baseline data and indices are provided in Aquatic Baseline Report (Appendix C, 5.5). However, the assessment of potential impact of project activities on benthic invertebrates is missing in the EIA documents. Formulae for determining Simpson's evenness index is not provided. It may be useful to calculate Shannon-Weiner index as well, as it is generally more widely used in the literature and could be useful for comparisons.</p>	<p>Benthic invertebrate communities were not an assessment indicator but rather were addressed through habitat and water quality assessment indicators. As stated in the methods (Appendix N; Aquatic Biology TSD, Appendix C, Section 2.3.3) Simpson's Evenness was calculated as in Smith and Wilson 1996. Standard EEM endpoints were used as future environmental effects programs will enable direct comparison of the data. While the Shannon-Weiner Index can be a useful index, it is not an index recommended by Environment Canada for the assessment of mining effects (Environment Canada 2012). However, it may be used in future assessments. The raw data is available from the baseline so it could be calculated for comparison if deemed appropriate.</p>	None.	n/a

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665	Northwatch	<p>Issue # 7: Other valued ecosystem components Reference: Fish habitat</p> <p>Concern: Other than macrophytes, fish, and benthic invertebrates, there is no information on the other valued aquatic ecosystem components. The EIA didn't not identify plankton as valued component of these aquatic ecosystems. Zooplankton are an important food chain component and environment change indicators. The presence of small-bodied fish in the study area indicates that zooplankton are available for young of year and juvenile fish. Inclusion of plankton in baseline study may be helpful in better evaluating lake productivity and comparisons.</p>	<p>Periphyton, phytoplankton and zooplankton monitoring was not conducted as part of the baseline studies. Secchi depth and nutrient concentrations were measured as an indicator of lake productivity. Periphyton, zooplankton and phytoplankton were assessed as potential monitoring tools for mining impact assessments as part of the AETE Program (St-Cyr et. al. 1997). The AETE program was used to assess and recommend the most appropriate monitoring tools for the Federal Environmental Effect Monitoring program for the mining sector in Canada. These measures (periphyton, zooplankton and phytoplankton) were not included in the EEM program due to their temporal variability and limited use in assessing conditions over time. Zooplankton, phytoplankton and periphyton communities can change due to numerous habitat factors (e.g., weather, water temperature, light). So that the ability to control for these factors and standardize monitoring results is extremely difficult (St-Cyr et al. 1997, APHA 1998, Lewis and McCutchan 2010, McIntire 1966, Jowett and Biggs 1997, Biggs et al. 1998, Bourassa and Cattaneo 1998, Barbour et al. 1999, Arnon et al. 2007, Wetzel 1983). Furthermore, standardization in laboratory identification of periphyton cannot be demonstrated and thus identified taxa can vary between laboratories. Thus, the sampling of the plankton and periphyton communities was not deemed appropriate as a long term measure of conditions in mine exposed water bodies.</p>	None.	n/a
666	Northwatch	<p>Issue # 8: Productive capacity of water bodies Reference: Fish Habitat</p> <p>Concern: Fish in Côté Lake will be relocated to other identified water bodies. The EIA document states that the productive capacity of the lakes and streams is sufficiently high and the addition of Côté Lake fish in other water bodies should not impact the condition of the existing fish (Table 9.8). As a part of compensation, habitat will be created in other areas of the watershed to offset the loss of Côté Lake. It is a requirement under the <i>Fisheries Act</i> to provide equivalent productive capacity. The EIA report states that the watercourse realignments will be designed to ensure productive capacity within the LSA is maintained (Appendix N, 4.3). However, the EIA report and baseline study do not properly address the existing productive capacity of the water bodies being impacted by project, adjacent lakes and proposed rearing channels. Lake productivity is governed by many abiotic and biotic factors, both internal and external to lake ecosystems. DFO definition of productive capacity acknowledges the importance of food and trophic interactions. Existing baseline information is not enough and additional studies are required to establish productivity level of these water bodies.</p>	<p>See response to Comment #487. Habitat units for the resident fish (northern pike, walleye, yellow perch, lake whitefish and small mouth bass) for critical life stages will be used as a means of quantifying productive capacity before and after mine development.</p>	None.	n/a
667	Northwatch	<p>Issue # 9: Lack of supporting data on food web and fish diet Reference: Fish Habitat</p> <p>Concern: EIA document states that the compensation/offsetting plans will consider not only the physical habitat requirements but also the biological requirements including food base (Appendix N, 4.2). However, no baseline information is provided on fish diet composition, their trophic interactions and important prey species and groups in the LSA. DFO definition of productive capacity acknowledges the importance of food and trophic interactions. This information is required to propose and evaluate proper habitat compensation plan.</p>	<p>Fish diet composition is well established for the dominant fish species found within the local study area as well as the capacity of fish to shift their diet to available food items. Through the compensation plan, it is proposed that the transplanting of vegetation, benthic invertebrates and forage fish be carried out to expedite the establishment of compensatory habitat. Minnow has previously implemented this approach at another site (Agrium Kapuskasing Phosphate Operations 2006) and results were quite effective (e.g., no loss in year class of any of the fish species relocated to the newly constructed lake). In areas where aquatic vegetation was transplanted, the coverage and expansion of colonization was much larger and quicker than in areas that were not transplanted providing cover for juvenile fish and decreasing erosion from construction and wind. Transplanting activities will be sequenced to allow for the best opportunity for the successful transfer of fish from lost areas to the newly constructed channels and will therefore provide the necessary food base in these new areas. Transplanting activities will likely include the transplantation of macrophytes (aquatic plants), benthic invertebrates and the relocation of small-bodied fish (forage fish) and of large-bodied fish. The sequence of transfers will take into account spawning and incubation periods of the dominant species found within the systems to ensure successful transfer of young-of-the-year fish. These transplants will be to accelerate the establishment of the ecosystem and food chain within the newly constructed areas prior to the placement of the key fish species.</p>	None.	n/a

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668	Northwatch	<p>Issue # 10: Lack of ecosystem approach Reference: Fish habitat</p> <p>Concern: When fish will be relocated in other lakes it may cause impacts on existing fish and other species in the recipient lakes and may disturb these aquatic ecosystems. No information is available to evaluate trophic interactions in these ecosystems. Baseline studies haven't identified the keystone taxa or species in these ecosystems. Lake and food web productivity is regulated by not only the limiting nutrients and light for autotrophic production, but also by the efficiency of trophic energy transfers which are governed by the abundance and species composition of prey items at each trophic level. More information is required on prey items, other components and trophic interaction.</p>	<p>Fish will be required to be relocated from habitats lost during the development of the mine (i.e., the construction of the open and the TMF). It is anticipated that fish will be relocated during ideal timing windows to minimize fish and egg stranding during the watercourse realignments. Timing of spawning for all fish found within the local study area indicated that the optimal window for all species will be late summer, early fall. By August all species young-of-the-year should be large enough to catch and transfer. Only golden shiner spawn into August. Since their spawning window is quite large, it is not anticipated that the entire year class would be lost or that the species could not spawn in the new area they are transferred to. To concentrate fish, it is anticipated that a series of progressive water drawdowns will be conducted (taking into consideration ideal timing for fish removal) to catch and relocate fish from areas being lost to newly constructed habitat. A variety of fish gear will be employed to capture fish to ensure all sizes and species are caught. Fish will be relocated within the same watershed. As the fish being relocated will be to newly constructed areas, minimal effects on existing populations are anticipated. The only location where fish may be relocated to another water body where an established population is already in place is for Côté Lake where fish will likely be relocated to Upper Three Duck Lake. Côté Lake and Upper Three Duck Lake are currently only separated by large culverts and fish can move freely between the two water bodies.</p>	None.	n/a
669	Northwatch	<p>Issue # 11: Compensating natural lotic habitat with artificial lentic habitat Reference: Fish Habitat</p> <p>Concern: Based on the proposed watercourse realignments, it is anticipated that there will be a small reduction in the lotic habitat (1,900 m) and an increase in lentic habitat (29,000 m²) within the Local Study Area (LSA) during operations and the first stage of post-closure (9.9.2.1). It is unclear whether this includes lentic habitat assumed to be available after pit flooding in 50 years to 100 year time after mine closure. During construction of the mine, as many fish as possible will be collected from Côté Lake and relocated from all habitats that will be lost due to the development of the mine. The constructed fish habitat associated with the watercourse realignments is expected to provide spawning, rearing and adult foraging habitat for the resident fish, particularly northern pike and yellow perch. Walleye and lake whitefish are not included in the species listed in the relocation plan. Compensating natural lotic habitat with artificial lentic habitat will probably develop a different aquatic community from the one lost and does not constitute an equitable "trade".</p>	<p>The lentic habitat from the pit is not considered in the current loss-to-gain ratio of habitat. All species of fish found in each of the areas to be lost will be relocated to newly constructed habitat. Walleye and lake whitefish will be relocated to suitable habitat within the same watershed. It is anticipated that any walleye and lake whitefish captured in Côté Lake and the arm of Upper Three Duck Lake will be relocated to Upper Three Duck Lake as these areas are continuous. IAMGOLD is currently working with DFO to outline the analysis of how the in-kind habitat creation measures proposed will offset the serious harm to fish (see Addendum to Appendix N; Aquatic Biology TSD).</p>	The fish habitat evaluation procedure has been added as part of the Addendum to Appendix N (Aquatic Biology TSD).	Addendum to Appendix N (Aquatic Biology TSD)
670	Northwatch	<p>Issue # 12: Unavailability of fisheries habitat compensation plan Reference: Fish Habitat</p> <p>Concern: The project requires habitat compensation/offsetting plans in support of a <i>Fisheries Act</i> Authorization. EIA document has mentioned that with the compensation, the overall effect on fish habitat is predicted to be negligible. This is based on assumptions that compensation measures will be appropriate and fully effective. The water course realignment design will offset the loss of fish habitat within the adjacent lakes or streams, to maintain the existing fish communities and fisheries. The constructed fish habitat associated with the watercourse realignments is expected to provide spawning, rearing and adult foraging habitat for the resident fish, particularly northern pike and yellow perch. The proposal raises questions about whether adequate habitat will be available to support smaller populations of walleye, smallmouth bass and lake whitefish which are present in few selective lakes only. At present, evaluation of habitat, productive capacity, watercourse realignment design, fisheries habitat compensation plan, and future monitoring plan are not available. Only the design concepts have been developed and offsetting design are not finalised. Due to unavailability of compensation design and plan, the overall impact of the project activities on fish habitat cannot be assessed.</p>	See response to Comment #487a).	None.	n/a

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671	Northwatch	<p>Issue # 13: Missing Information on methodology Reference: Fish and Fish Habitat Methodology</p> <p>Concern: In the “description of the environment” portion of the document, aquatic biology (6.4.8) methodology doesn’t include survey conducted in 2013. The list of the lakes included in the 2013 survey is also missing e.g., Mesomikenda Lake (6.4.8.1). Mesomikenda Lake is an important component of this project from where water will be drawn and Tailing Management Facility (TMF) will discharge during the closure phase. This portion of the report should be updated.</p>	The Amended EIS / Final EA Report text has been revised accordingly.	The bullet list in Section 6.4.8.1 has been revised to include all water bodies assessed during baseline studies conducted in 2012 and 2013.	Section 6.4.8.1
672	Northwatch	<p>Issue # 14: Inadequate number of samples Reference: Fish and Fish Habitat:</p> <p>Concern: Five large bodied fish and five forage fish were targeted in each water body for aging and fish tissue analysis (6.4.8.1, Appendix N 2.4.4). These tissues were analysed for total metals. Five samples for aging are not enough to show any trend, or for comparison among the lakes. The sample size should be increased in order to strengthen the rigour of analyses performed on individual parameters. Tissue sampling and analysis may be expensive. However, compromising it can put ecosystem health at risk for aquatic life and humans. Fish aging studies are also very important to study fish growth, age class structure and age at maturity. It appears that sample numbers were kept small to avoid fish mortality in these comparatively small water bodies. However 5 samples are not enough according to any standard. At least 15-20 samples are needed to be collected to achieve some statistical significance.</p>	Fish length was recorded so that it can be considered in length distributions and then the length can be translated to age based on measured ages over a range of fish sizes. During sampling, IAMGOLD’s consultants tried to limit fish mortality. Reliable aging structure generally requires the collection of bone / cartilage tissue which in turn requires sacrificing the fish. For the purpose of baseline monitoring IAMGOLD wanted to understand the size range and the relative proportion of adult and juvenile fish in various habitats. Collection of additional aging structures would not have assisted in achieving this objective.	None.	n/a
673	Northwatch	<p>Issue # 15: Long term non-lethal effects of toxins Reference: Fish / Aquatic toxicity</p> <p>Concern: Maximum copper, and zinc concentrations within the mixing zone are predicted to exceed water quality benchmarks and have the potential to effect fish and aquatic life at the predicted concentrations (9.9.2.2) Impacts on aquatic ecosystems occur at much lower concentrations of toxics than those that cause acute lethality. Endocrine disruption may result in sub-lethal effects which are not limited to fish fecundity, but can include effects on reproductive behaviour. Zinc and copper can affect aquatic biota by a variety of mechanisms, including both acute and chronic toxic effects. Increases in dissolved copper above normal background levels can reduce productivity of key links in aquatic food. Sub-lethal and toxic levels of copper and zinc can damage gills and other tissues of fish. Copper is known to depress the immune system, and is lethal for most of the invertebrates. Such sub-lethal effects may not be expressed in immediate generations. EIA does not consider other non-lethal endpoints that may have intense effects on fish. The proponent argues their runoff will not lead to bioaccumulation of metals and tainting in the downstream. These conclusions are based on models and assumptions. Apparently, proposed monitoring studies are not sufficiently detailed enough to detect long run health changes in fishes.</p>	Chronic (sub-lethal) thresholds were considered in the assessment of water quality predictions. For each element where a concentration was predicted to exceed baseline or water quality guidelines, the most appropriate chronic effect endpoint from the literature was selected and used as a toxicity reference value (Appendix N; Aquatic Biology TSD, Table 2.3) for both the aquatic biology impact assessment (Appendix N) and the HEHRA (Appendix W). Thus potential sub-lethal effects were considered. Monitoring will be conducted according to Federally regulated Environmental Effects Monitoring.	None.	n/a

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674	Northwatch	<p>Issue # 16: Mesomikenda Lake Water Supply Reference: Fish Habitat</p> <p>Concern: Mesomikenda Lake is also expected to provide a potential source of make-up water for use in the ore processing plant, as needed. It is expected that 7,200 m³ /d of freshwater will be taken from the Mesomikenda Lake which will be less than 1% of annual average stream flow at the Mesomikenda lake outflow (5.10.2. and 7.3.7.4). However, the document doesn't state the approximate number of days per year for which water will be drawn. The EIA report has mentioned that the fish communities or populations within Mesomikenda Lake are not expected to have any adverse effect. However, such withdrawal could have its effects during key times of year when flow is low and peripheral habitats are stressed. This water withdrawal from Mesomikenda Lake will definitely have impacts on downstream aquatic biology and habitat.</p>	<p>Mesomikenda Lake is expected to provide a potential source of make-up water for use in the ore processing plant. Mesomikenda Lake is part of the Mattagami River watershed and the water levels within the lake are regulated by the dam. Prior to being able to take water from Mesomikenda Lake, a Permit to Take Water will be required where further details will be established to ensure fish communities or populations within Mesomikenda Lake are not affected. Detailed mitigation measures are described in Appendix N (Aquatic Biology TSD), Section 4.2.</p>	None.	n/a
675	Northwatch	<p>Issue # 17: The potential effects of failure of water management facilities Reference: Fish and Fish Habitat/ Water quality</p> <p>Concern: Communities and stakeholders are concerned with potential seepage from the Tailing Management Facility (TMF) into the ground water and accidental spill into the water bodies. The EIA document states that additional test work is currently ongoing to better characterize the acid generating potential of the ore and the processed tailings to confirm the geochemical characteristics of the tailings (5.10.4). Initial test results do mention low potential of metal leaching but these analyses are based on many assumptions. EIA needs to accurately characterize the tailings that can be expected from the milling of the ore and should include detailed information regarding the selection process. Mitigation measures do mention the use of liner of early tailing dams and along the upstream face and areas where ponds are to be maintained within the TMF. But geo-membrane lining will not be done for all TMF. The EIA documents has mentioned that seepage through the tailing will occur and will be collected at collection ponds around the perimeter of TMF and pumped back into the TMF (5.7). But the document doesn't describe this risk empirically. A breach of the tailings dam is assessed in the EIA report (13.2.7). Although the chances of such an incident are very small, they are not insignificant. Water quality would deteriorate due to resulting slurry which may contain residual of cyanide, heavy metals and ammonia. TMF may contain large volume of water on closure which will not be pumped (Table 9.5). What would be the impacts of a TMF breach on downstream water quality and fish habitat?</p>	<p>Results from the tailings testwork indicate that the tailings leachates are circum-neutral with low metals concentrations. These results are consistent with the static testing results that indicate the vast bulk of the tailings are non-acid generating with a low content of sulphide and metals. This test monitoring program is ongoing and will be updated periodically.</p> <p>Note that cyanide concentrations will be below levels that are toxic to aquatic species, due to the operation of a cyanide destruction system prior to discharge of tailings to the tailings management facilities.</p> <p>The environmental concerns related to accidental releases from the TMF are described in detail in Section 13.2.7. The main concern would be the release of suspended solids.</p>	None.	n/a
676	Northwatch	<p>Issue # 18: Open pit flooding upon closure Reference: Fish habitat/ Water quality</p> <p>Concern: As per plan, upon closure, the open pit will be flooded naturally or actively to form Côté Pit Lake. It will take 100 years to flood the lake naturally. Even enhanced flooding will take 50 years to fill the pit (7.4.4.1). Mine water is expected to contain suspended solids from general mining and earth moving activities, as well as ammonia and hydrocarbon residuals from ammonium-nitrate based explosives and heavy equipment operation. Leaching of the exposed bedrock within the open pit may also potentially contribute solid and dissolved phase metals to the mine water (5.4). The pit lake will be incorporated into the main water system in 50-80 years from the project closure. Even at this phase, monthly average concentration of major ions and metals are predicted to be greater than the baseline concentrations in adjacent lakes. Total phosphorus concentration will be greater than water quality guidelines (4.6). It is unclear how monitoring of Côté Pit Lake water chemistry will be assured by the management for such an extended period of time (80-100years).</p>	<p>IAMGOLD is committing to carry out the water quality monitoring program during all phases of the Project, including post-closure. However, as stated in Section 5.16 of Chapter 5 – Project Description, the closure of the Project site will be governed by the <i>Ontario Mining Act</i> and its associated Regulation and Code. The <i>Ontario Mining Act</i> requires that a Closure Plan be filed and that financial assurance be provided in advance of Project development and held in trust by the Ministry of Northern Development and Mines. The financial assurance guarantees that sufficient funds are in place to ensure the proper closure of a mine (including long-term monitoring of water quality) in the event that the proponent cannot meet its Closure Plan obligations due to financial insolvency.</p>	None.	n/a

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677	Northwatch	<p>6. Conclusions</p> <p>As outlined above, there are numerous concerns with the Côté Gold Mine Project, both in terms of how it has been described and its environmental assessment documented in the documented, and in terms of its anticipated environmental performance, based on the information provided in these same documents. Indeed, in some instances it is difficult to separate the poor quality of the environmental assessment from expectations of poor environmental performance of this project.</p> <p>Given all of the grave concerns noted, the Agency must make a determination that either the Project is not approve-able, or that the Environmental Assessment work that has been done in support of a request for approval has been inadequate. If the Agency determines that the former is the case, then there is no option but to deny project approval. If the Agency determines that the latter is the case, then a deficiency statement should be generated, and the proponent directed to address the deficiencies of the work to date, and a second phase of the EA review could be undertaken.</p>	<p>The comment has been noted. No changes in the EA required.</p> <p>Note that the Amended EIS / Final EA Report has been prepared in full compliance with the Federal EIS Guidelines and the Approved Provincial ToR.</p>	None.	n/a
678	MOECC - Northern Region - Surface Water	<p>MOE-SW01</p> <p>Chapter 5.0—Project Description, 5.10.5 Final Effluent Quality and Discharge</p> <p>This section states that it is expected a receiving water assimilative capacity study will be carried out as part of provincial approvals process to determine acceptable receiving water effluent loadings that will not compromise receiving water aquatic life.</p> <p>Environmental effects cannot be fully evaluated in the absence of receiving-water assimilative capacity study and receiving-water based effluent criteria.</p> <p>The proponent needs to more fully evaluate the alternatives for effluent treatment and discharge by assessing receiving-water assimilative capacity, modeling the mixing zones, and developing receiving-water based effluent criteria. Effluent criteria to be developed taking into consideration the Ministry's "Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters, July 1994".</p>	<p>IAMGOLD is fully committed to meeting all applicable Provincial and Federal effluent and receiving water standards. In developing effluent criteria IAMGOLD will consider all applicable requirements.</p> <p>Appendices U2 and U5 (Assessment of Alternatives) describe the assessments of alternatives for process effluent and water discharge respectively. This information is summarized in Section 7.3 of the Amended EIS / Final EA Report.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
679	MOECC - Northern Region - Surface Water	<p>MOE-SW02</p> <p>Appendix J Water Quality, 4.1 Effects Assessment Indicator Parameters and Comparison Criteria</p> <p>This section states that for effects predictions for water quality of surface water receivers, the simulated concentrations of parameters are compared to the 95th percentile baseline concentrations and against a set of Water Quality Guidelines. The only exception is free cyanide, where a Site Specific Criterion (SSC) of 0.0098 mg/L was derived from the Water Environment Research Foundation (WERF) document titled: Scientific Review of Cyanide Ecotoxicology and Evaluation of Ambient Water Quality Criteria (WERF 2007)."</p> <p>When comparing long-term monthly monitoring data to water quality guidelines the 75th percentile is normally used to characterize background as per the Ministry guidance document "Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters, July 1994".</p> <p>A single baseline percentile value was calculated for the entire study area; this does not take into account spatial variability. Baseline characterization needs to be site-specific.</p> <p>The WERF-proposed criterion for free cyanide of 0.0098 mg/L is not endorsed by this Ministry. The proponent should:</p> <p>(1) Use the 75th percentile to define background water quality, in accordance with the Ministry's "Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters, July 1994".</p> <p>(2) Characterize baseline water quality according to individual sampling locations. This may require additional water sampling where too few data are available to adequately characterize temporal (seasonal/annual) variability.</p> <p>(3) Use the PWQO and CWQG for cyanide.</p>	<p>The Ministry's "Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters, July 1994" references the use of the 75th percentile to define background water quality as part of an assimilative capacity assessment and development of effluent criteria. However, an assimilative capacity assessment and effluent criteria development would be completed as part of the ECA application (formerly Certificate of Approvals), which would follow EA approval.</p> <p>It is acknowledged that the 75th percentile (as opposed to the 50th percentile, or average) is used by the Provincial MOECC to define background receiving water quality for the purpose of setting effluent criteria for incorporation into ECAs along with appropriate non-compliance criteria. For the purpose of this EA, however, the 95th percentile was used in a different manner, with the intended purpose of defining the upper limit natural background quality, which still defines natural conditions, to quantify magnitude levels for identifying / assessing potential impacts. The important factor to note here is that the predicted water quality is only being compared to the 95th percentile natural background quality - it is not being used to derive effluent criteria. When the time comes to apply for an ECA, following completion of the EA process, the requirements for deriving effluent criteria will follow MOECC guidelines, including application of the 75th percentile to background receiving water quality, including additional data collected in 2013 / 2014. A table is provided in the Addendum to Appendix J (Water Quality TSD) that presents the 75th percentile concentrations; an updated version of this dataset would be used to derive the effluent criteria as part of the ECA application process.</p> <p>For the purposes of deriving a set of baseline concentrations to assist with the water quality effects assessment, in particular to assist with providing a basis for the magnitude aspect of the impact assessment, the upper limit of baseline was calculated for each parameter using the 95th percentile concentrations. The reason why IAMGOLD applies the 95th percentile for comparison purposes as part of the magnitude assessment is that in a dataset of many lakes and watercourses of varying size and depth sampled over various seasons, as is the case for the Côté Gold Project, the 75th percentile does not account for naturally occurring concentrations in samples between the 75th and 95th percentiles. Calculation of the upper limit of baseline water quality using the 75th percentile would exclude a significant percentage of samples and does not encompass the full range of naturally occurring conditions that have been measured in the surface water environment (i.e., 25% of samples would be expected to exceed the 75th percentile). The purpose of the magnitude assessment is to distinguish between naturally occurring concentrations and Project site influence; this cannot be done using the 75th percentile concentrations. Further explanation on the use of the 95th percentile concentrations is provided below.</p> <p>Statistical procedures that have been used to define the upper limit of background include the upper 95% confidence limit, and the 90th or 95th percentile, among others (BCMELP, 1997; Hill et al., 2006, Roe et al., 2006). The approach of using the 95th percentile concentrations to define the upper limit of background concentrations is consistent with the CCME background concentration procedure (CCME, 2003). Furthermore, the 95th percentile concentrations were calculated to derive a single set of upper limit baseline concentrations to use as a magnitude benchmark for all assessment locations. A single set of upper baseline concentrations, rather than individual sets of baseline concentrations for each assessment location, were applied to provide a consistent assessment between the assessment locations and to avoid discrepancies when determining the magnitude level (Level I, II or III; see Table 11-2 in Section 11.0 of the EA). Lastly, deriving the upper limit baseline concentrations for individual assessment locations would not change the outcome of the magnitude assessment, as a Level II magnitude was assigned for all Project phases and the Level III magnitude requires that the concentration be greater than both the 95th percentile concentration and the water quality guidelines, where applicable. Therefore, for the purposes of this EA, the baseline water quality calculated using the 95th percentile concentrations is appropriate for comparisons to the predicted water quality as part of the water quality effects assessment.</p> <p>Response continues on next page.</p>	<p>Provided tables with 75th percentile baseline concentrations and revised free cyanide predictions in the Addendum to Appendix J (Water Quality TSD).</p> <p>In Appendix J, Section 4.1, the reference to the WERF criterion of 0.0098 mg/L as a "Site Specific Criterion (SSC)" has been changed to a "benchmark that is protective of aquatic life (excluding salmonids)" to clarify the intention of its use in the context of the EA.</p>	<p>Addendum to Appendix J. Appendix J, Section 4.1</p>

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679	See previous page.	See previous page.	<p>The PWQO for free cyanide was developed prior to 1979 and is based on toxicity data from the 1950's and 60's (MOE, 1979); the PWQO for free cyanide, therefore, is based on scientific data that is decades old and does not take into account the more recent data on cyanide toxicity. The CWQG for free cyanide is based on the PWQO, and also does not include any more recent data than the PWQO. Neither the PWQO nor the CWQG has been updated since 1984. A free cyanide effects benchmark of 0.0098 mg/L was taken from a recent study that reviewed and updated the current state of understanding of aquatic chemistry and toxicity of cyanide and conducted new aquatic toxicity studies to fill knowledge gaps; this study is presented in: Water Environment Research Foundation (WERF) document Scientific Review of Cyanide Ecotoxicology and Evaluation of Ambient Water Quality Criteria. The study presented in WERF (2007) developed a freshwater chronic value of 0.009784 mg/L that is protective of aquatic life (excluding salmonids) using scientifically sound methods and updated toxicity data. This benchmark was applied as part of the water quality effects / risk assessment to evaluate whether the predicted free cyanide concentrations in non-salmonid bearing waters would result in adverse effects on aquatic life. The WERF criterion of 0.0098 mg/L is a conservatively derived, scientifically sound benchmark that is protective of aquatic life in non-salmonid bearing waters and has been previously used in environmental impact assessments as a suitable benchmark for assessing the effects of free cyanide. In Appendix J, Section 4.1, the reference to the WERF criterion of 0.0098 mg/L as a "Site Specific Criterion (SSC)" has been changed to a "benchmark that is protective of aquatic life (excluding salmonids)" to clarify the intension of its use in the context of the EA.</p> <p>However, this said, the original assumptions related to the transport of free cyanide from the TMF to the receiving environment were overly conservative and assumed that the concentration of free cyanide in seepage from the TMF that reports to surface water would be equal to those discharged from the process plant. These assumptions were re-evaluated and the concentrations in the surface water environment were re-modelled to account for well-understood degradation mechanisms within the vadose zone of the tailings (i.e., volatilization from the shallow tailings). A discussion on the assumptions and re-modelling of free cyanide is provided in the Addendum to Appendix J (Water Quality TSD). Taking into consideration free cyanide degradation in the TMF vadose zone, the concentrations of free cyanide in the surface water environment adjacent to the TMF are predicted to be less than the PWQO and CWQG.</p>	See previous page.	See previous page
680	MOECC - Northern Region - Surface Water	<p>MOE-SW03</p> <p>Appendix J Water Quality, 4.3.1 Conceptual Model</p> <p>This section states the model assumes effluent will not contain cyanide.</p> <p>Process water containing cyanide will be discharged to the TMF</p> <p>Include cyanide in the assimilative capacity assessment and effluent criteria development.</p>	<p>As described in Section 4.3.1 Conceptual Model of Appendix J, a water management strategy has been designed to maintain a closed-loop between the processing plant and the reclaim pond. As a result, water from the reclaim pond does not report to the polishing pond. Rather, water from the mine water pond reports to the polishing pond. As such, the water quality model assumes that there is no cyanide in the effluent discharged to the environment through the polishing pond because cyanide-bearing water does not enter the polishing pond. Figure 3 in Appendix J, Attachment II has been corrected to remove an erroneous arrow denoting flow from the processing plant to the mine water pond.</p> <p>For the purposes of an effects assessment, predictions were completed using the water quality model to evaluate the potential changes to the water quality in the receiving surface water environment. The results of the simulations were compared to the 95th percentile baseline concentrations and water quality guidelines. This is an appropriate approach for an EA, as the intention is to assess whether or not the potential changes to water quality due to the development of the Project are protective of aquatic and human health. The assimilative capacity of the receiver and effluent discharge criteria will be evaluated as part of the ECA application process, which would follow EA approval.</p>	Appendix J (Water Quality TSD), Attachment II, Figure 3 has been corrected and the erroneous arrow removed.	Appendix J (Water Quality TSD), Attachment II, Figure 3

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681	MOECC - Northern Region - Surface Water	<p>MOE-SW04</p> <p>Appendix J Water Quality, Water Quality Modeling Report 2.4 Modeled Parameters</p> <p>Modeled parameters did not include mercury.</p> <p>Watercourse re-alignments will result in flooding of land. There is high potential for existing elemental mercury to be converted to its bio-available form, methyl-mercury, leading to increases in the concentration of methyl-mercury in rivers, lakes and residing fish.</p> <p>The proponent should (1) define baseline conditions for water chemistry and fish tissue using advanced sampling and analytical protocols for low level total and methyl mercury according to guidance from MOECC Northern Region; and (2) model the potential impact of flooding on mercury levels in fish tissue (e.g. Johnson et al. 1991. Can. J. Fish Aquat. Sci. 48: 1468-1475)</p> <p>Also include evaluation of the potential for increased sulphate levels to influence mercury methylation.</p>	<p>Section 2.4 Modelled Parameters in Appendix J, Attachment II did not indicate that mercury was not modelled; rather, the text indicates that mercury was not included in the presentation of the results of the water quality predictions because concentrations, including mine site components, were below or very near the MDL. Given that the concentrations were below or very near the MDLs, the drainage from the mine site is not a tangible source of mercury and presenting simulated concentrations of mercury would not provide any value to the water quality effects assessment in this context.</p> <p>Inorganic mercury can be bound in terrestrial vegetation and organic-rich soils and can become mobilized in terrestrial areas that become flooded where reducing conditions develop sufficiently to result in the methylation of the mercury. However, as noted in the aquatic impact assessment with respect to the Côté Gold Project, potential effects associated with methyl mercury production due to flooding are expected to be very limited because currently the areas that will be flooded (i.e., Chester Lake and parts of the south arm of Bagsverd Lake) are small (i.e., less than 80 ha) and are inundated on a seasonal basis. Generally, any methyl mercury production associated with flooding of shallow areas, such as those proposed for the Côté Gold Project, is realized within 2 to 3 years of flooding and does not represent a long-term issue as observed at large reservoirs (Bodaly et. al, 1997; Canada-Manitoba Governments, 1987). Furthermore, the areas predicted to be flooded will form littoral shallow habitat that is expected to remain oxic and will thereby not create the anoxic conditions required for methyl mercury production. Therefore, the seasonal flooding of the areas of concern are not expected to significantly contribute to methyl mercury production upon development of the Project.</p> <p>The key issue with methyl mercury is the potential increase in mercury tissue concentrations of fish that reside in the lakes where flooding of terrestrial areas is expected causing restrictions in fish consumption rather than effects to the fish themselves. It is important to note that fish within the local area are currently restricted for consumption due to regionally elevated mercury levels. Thus, if any small increases in methyl mercury occurred in fish tissues, these increases will not likely change the consumption restriction on the fish. More information on fish tissue concentrations are discussed in Appendix W (HEHRA) as they relate to the possible impacts associated with human consumption of fish.</p> <p>Although methyl mercury production is not expected to be a concern, IAMGOLD is committing to remove terrestrial vegetation within the small areas that are predicted to experience flooding prior to the construction of watercourse realignments (Section 10, Table 10-2); this commitment has been expanded to include the removal of shallow organic-rich soils in these small areas. The removal of the terrestrial vegetation and organic-rich soils in these areas will further reduce the potential for methyl mercury production (Windham-Meyers, 2009). Furthermore, low-level total mercury and methyl mercury have been added as parameters to the baseline water quality sampling and fish tissue monitoring as part of the overall monitoring commitments for the Côté Gold Project.</p> <p>Methyl mercury that is generated from inorganic mercury that is sequestered by terrestrial vegetation from the atmosphere typically occurs at very low total concentrations (i.e., nanograms per litre). The generation of methyl mercury depends upon the development of favourable geochemical conditions (i.e., sulphate reducing) to allow for sulphate reducing bacteria to transform the inorganic mercury to organic mercury. The rate of the microbial-induced methylation of the mercury depends on a number of factors including: distribution and concentrations of inorganic mercury in biodegradable organic matter, geochemical conditions (pH, redox, temperature), presence of compounds that can complex with inorganic mercury (e.g., dissolved organic carbon and sulphide), and presence and activity of sulphate-reducing bacteria (Benoit et al., 2003). Uncertainties associated with the source term, geochemical conditions and microbial communities, compounded with uncertainties associated with modelling exposure pathways and bioaccumulation in fish, makes modelling the overall effect of potential methyl mercury production very challenging and carries a range of uncertainty that is likely to be significantly greater than the range of the predicted magnitudes. Therefore, modelling methyl mercury does not provide value in the context of an EA, and would not remove the need to follow through with the proposed mitigation and monitoring commitments that are discussed above.</p> <p>Additional information regarding methyl mercury production has been added in the Addendum to Appendix N (Aquatic Biology TSD).</p>	<p>Revised water quality monitoring commitments to include methyl mercury. Additional information regarding methyl mercury has been provided in the Addendum to Appendix N.</p>	<p>Chapter 16, Appendix J, Section 5.2.1 Appendix Y Appendix N</p>

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682	MOECC - Northern Region - Surface Water	<p>MOE-SW05</p> <p>Appendix J Water Quality, Water Quality Modeling Report 2.4 Modeled Parameters</p> <p>Modeled parameters did not include Total Dissolved Solids (TDS).</p> <p>Previous experience at mine sites shows that discharge of effluent high in TDS can result in meromictic stratification of receiving lake.</p> <p>The proponent should evaluate the potential for effluent TDS to produce meromixis in proposed receivers of mine effluent.</p>	<p>Under calm conditions (e.g., the low current speeds observed during July 2014), the effluent is expected to form a density plume that would move into the basin immediately east of the discharge site. The formation of the density plume is the result of temperature and total dissolved solids differences between the effluent and the receiving water. The magnitude of the density difference will be mitigated by the design of the outfall that is predicted to provide approximately a 16:1 dilution at the end of the turbulent mixing zone. While the diluted plume is still expected to form a density plume at the end of the turbulent mixing zone under calm conditions, the density difference between the plume and the receiving water is small (< 0.01 kg/m³). Events that increase the ambient currents speeds (e.g., high flow events in Bagsverd Creek or high winds) are expected to periodically break down the density stratification.</p>	None.	n/a
683	MOECC - Northern Region - Surface Water	<p>MOE-SW06</p> <p>Appendix J Water Quality, Water Quality Modeling Report 2.4 Modeled Parameters</p> <p>Total Phosphorus (TP) was modeled using GoldSim. The majority of TP sample analyses had a high detection limit (20 ug/L).</p> <p>The province's recommended model for TP in Ontario lakes on the Precambrian Shield is the Lakeshore Capacity Model. This model can calculate water quality effects from point source discharges and shoreline development.</p> <p>Model input includes TP data, measured with low detection limit, to characterize average ice-free period lake TP concentration.</p> <p>The TP Interim PWQO and Revised PWQO for Precambrian Shield Lakes are intended to help maintain recreational water quality and to protect cold water fish habitat. Cold water fish habitat in Neville Lake is located in a proposed mixing zone. Mesomikenda Lake, another of the proposed receivers, contains lake trout.</p> <p>The proponent should: (1) Obtain low-level TP data for potential receivers; (2) Determine the impact of the mine on TP concentrations and cold water dissolved oxygen habitat.</p> <p>Guidance on TP sampling, analysis and modeling are provided in the document "Lakeshore Capacity Assessment Handbook Protecting Water Quality in Inland Lakes on Ontario's Precambrian Shield. May 2010" prepared by Ministry of Environment, Ministry of Natural Resources, and Ministry of Municipal Affairs and Housing.</p>	<p>Total phosphorus concentrations that were measured from the baseline surface water quality samples were originally analyzed via inductively coupled plasma mass spectrometry to a MDL of 0.02 mg/L. To better understand the baseline total phosphorous concentrations, IAMGOLD submitted samples during August 2013 for analysis via spectrophotometry to attain a lower MDL of 0.006 mg/L. Therefore, low-level total phosphorous data has already been attained and is being collected as part of the ongoing surface water quality baseline program. Furthermore, the total phosphorous baseline concentrations that were analyzed via spectrophotometry are solely used for the water quality model inputs to calculate baseline loading rates as part of the effects predictions. However, source-term loading rates that use the humidity cell data were conservatively estimated from humidity cell leachate that was analyzed via inductively coupled plasma mass spectrometry.</p> <p>In response to comments regarding total phosphorous concentrations in the receiving surface water environment, further modelling and analysis was completed and included in the Addendum to Appendix J (Water Quality TSD). A description of the methodology and assumptions are also provided in the Addendum. The predicted annual average total phosphorus concentrations for Neville Lake and Mesomikenda Lake were calculated using the Lakeshore Capacity Model, as recommended by the Ontario MOECC (MOE et al., 2010), which is a mass-balance based approach that estimates average phosphorous concentrations in lakes. The approach of using the Lakeshore Capacity Model to evaluate phosphorous loads includes derivation of a revised PWQO for each lake (i.e., background + 50%). The results of the Lakeshore Capacity Model analysis were compared to the revised PWQOs.</p> <p>The Lakeshore Capacity Model results indicates that lakes in the Mollie River Watershed are not good candidates to simulate using the Lakeshore Capacity Model, whereas Neville Lake and Mesomikenda Lake are good candidates; see further explanation in the Water Quality TSD Addendum.</p> <p>The predicted average total phosphorus concentration in Neville Lake and Mesomikenda Lake using the Lakeshore Capacity Model are presented in table format in the Water Quality TSD Addendum. The predicted average concentrations in lakes directly downstream of the treated sewage effluent discharge are also presented in tables in the Addendum to Appendix J Water Quality TSD.</p> <p>The average concentrations in Neville Lake and Mesomikenda Lake were predicted to be less than the revised, lake-specific PWQOs. Similarly, the average concentrations for Bagsverd Lake (south) and Three Duck Lakes were predicted to be less than the original PWQO. Therefore, any changes in phosphorus concentrations are not expected to result in meaningful changes in dissolved oxygen concentrations nor cause a shift in the productivity of the lakes.</p>	Revised model results for phosphorous have been provided in the Addendum to Appendix J (Water Quality TSD).	Addendum to Appendix J
684	MOECC - Northern Region - Surface Water	<p>MOE-SW07</p> <p>Chapter 5 – Project Description, 5.5.1.1 Mine Rock, 5.10.6.1 Preliminary Pond Designs</p> <p>The Mine Rock section mentions ditching will be designed to collect average annual precipitation and runoff, with storage capacity under all climatic conditions.</p> <p>The Preliminary Pond Design section mentions that seepage collection ponds will be designed to store and pump water during periods of high and low flow year-round. It also states that the TMF Pond and Polishing Pond will be designed with enough capacity to withstand the Environmental Design Flood and Inflow Design Flood.</p> <p>The design capacities of the ditching and ponds should be clearly stated.</p>	<p>This information is not currently available. The TMF and polishing pond designs will be finalized during detailed Project design, in accordance with site water management requirements, as well as requirements specified in Provincial approvals and the <i>Lakes and Rivers Improvement Act</i> Technical Bulletins.</p>	None.	n/a

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685	MOECC - Northern Region - Surface Water	MOE-SW08 Chapter 5 – Project Description, 5.7 Tailings Management Facility Prior to development topsoil will be stripped from TMF area. Not clear if this indicates that all organics will be removed. Indicate whether or not all organics will be removed from TMF area prior to development. If organics to remain, predict interactions with geochemistry of the material to be deposited.	Organics will be stripped from the dam foundation to ensure long term dam stability. Organics in the remainder of the TMF will be left in place. The Amended EIS / Final EA Report text has been revised to include this information. Geochemical interaction of tailings with the surrounding environment will be assessed during detailed design and provided in an application for an ECA.	The text has been updated to clarify that organic matter is included with topsoil.	Section 5.7
686	MOECC - Northern Region - Surface Water	MOE-SW09 Chapter 5 – Project Description, 5.9 Aggregates NAG mine rock will be used in construction. Extensive testing following accepted protocols will be needed to ensure waste rock is accurately classified based on potential for release of contaminants. The proponent should provide contingency plan in the event that the rock used in construction is found to be source of contamination to surface water.	Ongoing testing confirms that the vast majority of the mine rock would be suitable for construction purposes. If this were not the case IAMGOLD would bring in aggregates from external sources.	None.	n/a
687	MOECC - Northern Region - Surface Water	MOE-SW10 Chapter 5 – Project Description, 5.10.2 Water Supply for Ore Processing Plant Operations This section states that Mesomikenda Lake is potential source of water and that uptake would not exceed 20% of daily flow to occur seasonally when sufficient flow available. Define what is meant by “when sufficient flow available”. Quantify predicted impact of the proposed water-taking on lake level, aquatic ecology and other users of Mesomikenda Lake; include also the potential for impacts downstream of Mesomikenda Lake.	The maximum freshwater removal rate will be determined during the Permit to Take Water application phase, but is not expected to exceed 20% of the ore processing plant demand (approximately 55,000 m ³ /day) plus an allowance for potable water, fire storage and truck washing (to be determined). For current purposes, the sensitivity of the lake response to climate and water removal are described in the Addendum to Appendix I (Hydrology TSD). IAMGOLD has replaced the statements in Chapter 5 to state: Although at this time the freshwater removal rate is not expected to be greater than 20% of the process water demand at the ore processing plant, the maximum freshwater removal rate will be determined during the Permit to Take Water application phase. Freshwater will be taken in accordance with conditions associated with the Permit to Take Water, when approved. The water removal is intended to supplement recycled site water and provide for truck washing, potable and fire reserve requirements.	The following sentence in Chapter 5 has been deleted: "This uptake would not exceed 20% of the daily flow, and would occur seasonally when sufficient flow is available." A new paragraph has been added with the following text: "Although at this time the freshwater removal rate is not expected to be greater than 20% of the process water demand at the ore processing plant, the maximum freshwater removal rate will be determined during the Permit to Take Water application phase. Freshwater will be taken in accordance with conditions associated with the Permit to Take Water, when approved. The water removal is intended to supplement recycled site water and provide for truck washing, potable and fire reserve requirements." The sensitivity of Mesomikenda Lake in response to climate and water removal is described in the Addendum to Appendix I.	Section 5.10.2; Addendum to Appendix I (Hydrology TSD)

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688	MOECC - Northern Region - Surface Water	<p>MOE-SW11</p> <p>Chapter 5 – Project Description, 5.10.7 Watercourse Realignments, Chapter 9 – Description of Project Effects, 9.4.2.2 Operations Phase Hydrogeology, 9.5.2.2 Operations Phase Hydrology and Climate</p> <p>This section (5.10.7) discusses fish habitat compensation plan in support of federal regulations and authorizations.</p> <p>These sections (9.4.2.2, 9.5.2.2) note: (a) 1m groundwater drawdown contour extends 1.4 km southwest of the open pit; and (b) Along a portion of Bagsverd Creek, average annual flow is predicted to decrease by 20% due to loss of watershed area from watercourse re-alignment and development of Tailings Management Facility.</p> <p>Watercourse re-alignments and other water-taking (e.g. open pit dewatering) will require provincial Permit to Take Water (PTTW). Considerations include minimum flow and water level requirements to protect natural function of aquatic ecosystems and other uses of affected watercourses.</p> <p>Quantify minimum water level and flow required to maintain natural function and avoid interference with other uses of lakes, streams and wetlands potentially affected by diversion and water-taking (e.g. open pit dewatering). A monitoring and contingency plan may be needed to ensure maintenance of water level and flow.</p>	<p>It is acknowledged that a Permit to Take Water and supporting studies will be required for realignments and/or open pit dewatering. As per the hydrogeological baseline study report (Appendix H; Hydrogeology TSD), Attachment 1, groundwater inflow to the pit is anticipated to be a minor part of the total water balance of local lakes. Further, realignment channels will be designed with fish habitat and passage as a priority. Contingency and monitoring plans are described within the Amended EIS / Final EA Report, and further monitoring plans will be developed if identified during permitting.</p>	None.	n/a
689	MOECC - Northern Region - Surface Water	<p>MOE-SW12</p> <p>Chapter 7 – Description and Rationale for Alternatives, 7.3.8.3 Preferred Water Discharge Alternative</p> <p>This section identifies Bagsverd Creek as the preferred alternative for effluent discharge, citing smaller mixing zone than Mesomikenda Lake alternative, benefit of effluent volume mitigating flow reductions in Bagsverd Creek, and fewer human users.</p> <p>Provide additional information about the evaluation of alternatives for discharge location. This includes mixing zone model inputs and outputs, model-predicted mixing zone sizes, predicted concentration gradients within the mixing zones, biology and other users within the mixing zones, and assessment of potential toxicity (acute and chronic) to aquatic biota within the mixing zones.</p> <p>The comparison of alternative effluent discharge locations should consider average and worst-case scenarios of effluent discharge (volume and concentration) and receiver discharge (e.g. 7Q20), seasonal changes in runoff and stream discharge, thermal stratification of lakes, and weather conditions that might affect effluent dispersion (e.g. wind direction and speed, ice cover).</p>	<p>Appendix N (Aquatic Biology TSD) and Appendix J (Water Quality TSD) provide more detailed comparisons of the effects of these two alternatives.</p> <p>Appendix J predicts the mixed water quality within the respective mixing zones in comparison to appropriate water quality criteria. Appendix N evaluates the potential toxicity of these predicted concentrations to aquatic biota in the mixing zones.</p>	None.	n/a

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690	MOECC - Northern Region - Surface Water	<p>MOE-SW13</p> <p>Chapter 7 – Description and Rationale for Alternatives, 7.3.14.5 Preferred Domestic Sewage Treatment</p> <p>This section states the preferred alternative for domestic sewage treatment is package plant. The discharge location for treated domestic sewage is not given.</p> <p>Provide evaluation of alternative discharge locations for treated domestic sewage effluent. This will require collection of low-level total phosphorus data from potential receivers and evaluation of the impact of nutrient loading on total phosphorus concentrations and cold water dissolved oxygen habitat in potential receivers.</p>	<p>During the construction and operation phases, the camp site sewage system is expected to be located upstream of Bagsverd Lake (south). Domestic sewage will be treated using a Waterloo Biofilter® Model 4 Bedroom system. The system contains a patented synthetic, absorbent filter medium that is configured as a free-draining, attached growth biological trickling filter to treat sewage. The system provides aerobic, anaerobic and anoxic environments for biological treatment. Bacteria colonize the filter medium surfaces and degrade and oxidize organic pollutants in the sewage (i.e., nitrate, ammonia and phosphorus).</p> <p>The Waterloo Biofilter® Model 4 Bedroom system has been employed at comparable-sized operations in northern Ontario. Data from the treated side of the system at an analogous site was provided for review (Canadian Shield Consultants, personal communication, 2014). Data from the analogous site were used as inputs to the water quality model to predict the effect of the proposed septic system on downstream receivers. Concentrations of nitrate, nitrite, total ammonia and total phosphorus measured monthly over a period of three years were averaged, and an attenuation factor of 25% was applied to the total phosphorus concentration to account for mass attenuation in the subsurface between the septic tile bed and the groundwater flow system. Studies by Ptacek (1998) and Robertson et. al. (1998) observed that phosphorus attenuation in the vadose zone ranged from 50% to 80%. Furthermore, based on data from a sampling port installed under the area bed at the analogous site, the concentrations of total phosphorus decreased by an order of magnitude from the treated side of the biofilter to the sampling port (Canadian Shield Consultants, personal communication, 2014). Therefore, an attenuation factor of 25% is reasonable and conservative, in particular because the purpose of releasing the sewage effluent through a septic tile system is to attenuate some of the mass load within the vadose zone prior to reaching the water table. It would be expected that further degradation would occur along the groundwater flow path prior to entering the surface water environment; however, additional degradation was conservatively ignored in the water quality modelling.</p> <p>The daily design sewage flow for the Waterloo Biofilter® Model 4 Bedroom system is 146,000 m³/year. The actual flow has been noted to be less than the design flow by 30 to 40 % (Canadian Shield Consultants, personal communication, 2014). The model assumes that the anticipated actual flow is 70% of the design flow (i.e., 102,200 m³/year).</p> <p>An attempt was completed to use the Lakeshore Capacity Model to simulate the lakes downstream of the sewage effluent discharge; however, it was determined that these lakes were not a good fit for the Lakeshore Capacity Model approach (for more information see the Addendum to Appendix J; Water Quality TSD). Therefore, a combination of GoldSim and PHREEQC was used to predict the phosphorous concentrations in lakes downstream of the sewage effluent discharge.</p> <p>The total phosphorus concentrations were predicted in Bagsverd Lake (south) and Three Duck Lakes (lower); the results are presented in tables which can be found in the Addendum to Appendix J. Solubility controls were applied to the predicted concentration of total phosphorus under each climatic condition using in the equilibrium geochemical speciation / mass transfer model PHREEQC to account for geochemically creditable phases that are known to control phosphorus concentrations in the natural environment. Predicted concentrations are compared to PWQO in table format in the Addendum to Appendix J.</p> <p>The predicted total phosphorus concentration in Bagsverd Lake (south) and Three Duck Lakes (lower) is lower than the PWQO. Based on the predicted concentrations for total phosphorous, concentrations are therefore expected to be at levels below those that would result in a change to the trophic status of the lakes downstream of the treated sewage effluent discharge.</p> <p>Response continues on next page.</p>	<p>Revised predictions that evaluate the potential effects of sewage effluent on the surface water environment are provided in the Addendum to Appendix J (Water Quality TSD), and edits to Water Quality TSD text.</p>	<p>Addendum to Appendix J; Appendix J, Sections 1.1.9 and 2.1</p>

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
690 cont	See previous page.	See previous page.	The predicted nitrate, nitrite and total ammonia concentrations for Bagsverd Lake (south) and Three Duck Lakes (lower) for average, 1:25-year dry and 1:25-year wet climatic conditions are presented in table format in the Water Quality TSD Addendum. The predicted annual average concentrations are compared to the PWQO and CWQG, where applicable. The predicted average annual nitrate concentrations in Bagsverd Lake (south) and Three Duck Lakes (lower) are below the CWQG of 13 mg/L (there is no PWQO for nitrate). The predicted average annual nitrite concentrations in Bagsverd Lake (south) and Three Duck Lakes (lower) are below the CWQG of 0.06 mg/L (there is no PWQO for nitrite). The predicted average annual un-ionized ammonia concentrations in Bagsverd Lake (south) and Three Duck Lakes (lower) are below the PWQO and the CWQG. Therefore, the results of adding the sewage effluent to the water quality model do not change the results of the water quality effects assessment.	See previous page.	See previous page.
691	MOECC - Northern Region - Surface Water	MOE-SW14 Chapter 9 – Description of Project Effects, Table 9-1 Groundwater level is listed as physical effect indicator. Not only groundwater level, but also chemistry of groundwater discharge will potentially interact with surface water. Add to Table 9-1 Physical Effects: changes in quantity and quality of groundwater discharging to surface water.	The EA includes a complete prediction of effects on groundwater quality and changes in groundwater quality are fully considered in the prediction of effects on surface water. Effects assessment indicators are chosen such that they focus the EA on the really relevant effects. Since the groundwater in the area that could potentially be affected is not used per se, 'changes in groundwater quality' is not considered a suitable indicator.	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
692	MOECC - Northern Region - Surface Water	<p>MOE-SW15</p> <p>Appendix J – Water Quality, 5.2.1 Surface Water</p> <p>Collection of baseline data must provide sufficient samples to characterize seasonal and annual (multi-year) variability of water chemistry at exposure (i.e. potentially affected by future effluent discharges, groundwater seepages or surface drainage) and reference locations.</p> <p>The lakes that are potential receptors of treated effluent (Neville Lake, Mesomikenda Lake) have few water chemistry data and none collected during summer thermal stratification. More baseline data will be necessary to support development of receiver-based effluent criteria and future effects monitoring.</p> <p>Mesomikenda Lake sampling has not included the narrow bay that receives the discharge from Neville Lake. The chemistry of this bay may differ from the main basins of Mesomikenda Lake that have been sampled.</p> <p>There are few data from reference locations that will not be affected by mine development or operations.</p> <p>Obtain additional baseline data at exposure and reference locations to support development of effluent criteria and future effects monitoring. Depth-stratified sampling of lakes should occur during the period of summer thermal stratification.</p> <p>Additional monitoring requirements may be identified as part of the provincial approvals process.</p>	<p>The water quality baseline report (Appendix J; Water Quality TSD; Attachment 1) presents data up to May 2013, as there was a need to finalize the water quality baseline report prior to the initiation of the effects predictions for the EA. This resulted in the water quality baseline report presenting fewer sampling rounds for some stations in the EIS / Draft EA Report. It is agreed that there is a need for more baseline surface water quality data for permitting (i.e., in addition to the data presented in the water quality baseline report as part of the EA), which will include the development receiver-based effluent criteria and future effects monitoring. For this reason, baseline surface water quality monitoring has continued since May 2013 and is still ongoing; updated statistics of the baseline surface water quality data are provided in the Addendum to Appendix J (Water Quality TSD). Nonetheless, the data presented in the water quality baseline report is considered to be sufficient for the purposes of the EA, of which the objective is to assess the potential for effects on water quality with respect to the environment and human health; rationale for this is provided in the Addendum to Appendix J (Water Quality TSD) that compares the original dataset with the updated dataset.</p> <p>To date, a multi-year dataset is available at all key surface water quality stations. Many stations have been sampled on a quarterly to monthly basis during this time period to provide a dataset that well covers the various seasons over multiple years. The collection of baseline water quality data includes monthly sampling at the outflows of Neville Lake and Mesomikenda Lake, and quarterly sampling of lake stations located in the deeper areas of key basins in Neville Lake and Mesomikenda Lake. Sampling at lake stations now covers periods of thermal stratification and lake turnover. Furthermore, the surface water quality dataset includes multi-year and seasonal data from reference stations that are located upstream of the Project, such as: Somme River, Wolf Lake, Schist Lake and the lower basins of Mesomikenda Lake (south end of Mesomikenda Lake is separated from the Project through a watershed divide). It is anticipated that additional reference stations would be added to the surface water quality monitoring network prior to construction of the Project.</p> <p>Although the narrow bay of Mesomikenda Lake downstream of the outlet of Neville Lake is not specifically targeted for sampling, there are surface water quality stations located upstream and downstream of this narrow bay. For example, the outflows of Neville Lake and Mesomikenda Lake have been sampled monthly during 2013 and 2014 for a total collection of 12 and 13 samples, respectively. Furthermore, the major basins in Mesomikenda Lake have been sampled quarterly, including the upper basin of which the narrow bay is attached. The water chemistry in that narrow bay of Mesomikenda Lake is not expected to vary significantly from the outflow of Neville Lake or the upper basin of Mesomikenda Lake. The baseline dataset for Neville Lake and Mesomikenda Lake is interpreted to capture the range of baseline water quality conditions expected to be encountered in that narrow basin. Lastly, no significant effects are predicted for the outflow of Neville Lake, and therefore the water quality predictions suggest that the narrow bay of the upper basin of Mesomikenda Lake will not experience any significant effects.</p> <p>The development of receiver-based effluent criteria will be completed as part of the ECA application process, which would follow EA approval and be based on a more extensive data set. Details of the future effects monitoring, such as Environmental Effects Monitoring (EEM), would also be developed during the permitting stage of the Project.</p>	<p>Provided an updated surface water quality baseline statistical summary in the Addendum to Appendix J.</p>	<p>Addendum to Appendix J</p>
693	MOECC - Northern Region - Surface Water	<p>MOE-SW16</p> <p>Appendix J – Water Quality, 5.2.3 Sediment</p> <p>The baseline sediment characterization includes major ions, metals and other parameters, but not particle size, total N, total P, and cyanide.</p> <p>Add to the sediment analysis: particle size, total N, total P, cyanide.</p>	<p>The parameters particle size, total nitrogen, total phosphorous and total cyanide have been added to the sediment quality monitoring commitments.</p>	<p>Added parameters to sediment quality monitoring commitments.</p>	<p>Appendix J, Section 5.2.3; Appendix Y</p>

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694	MOECC - Northern Region - Surface Water	<p>MOE-SW17</p> <p>Appendix J – Water Quality, Water Quality Baseline Report 4.3.2 Water Column Profiles</p> <p>Lake profiles were sampled at 1 m intervals except lakes deeper than 40 m were profiled at 3 m intervals.</p> <p>Profile data collected at 3 m intervals provides coarser resolution of thermocline depths than profile data collected at 1 m intervals. This could influence the calculation of the lake trout habitat criterion of Mean Volume Weighted Hypolimnetic Dissolved Oxygen.</p> <p>Sampling at 3 m intervals in lakes deeper than 40 m may be acceptable if the coarser sampling begins more than 5 m below the top of the hypolimnion (Quinlan et al. 2005).</p>	<p>Lake stations where profile measurements are collected every 3 m were located in Dividing Lake and Mesomikenda Lake. The basin in Dividing Lake that was profiled is about 40 m in depth. The basins in Mesomikenda Lake that were profiled are about 40 to 70 m in depth. Profile measurements collected every 3 m across 40 to 70 m of water column depth provides sufficient data to develop trends to derive the thermocline depths. Furthermore, the development of the Côté Gold Project is not expected to effect lake trout habitat through alterations to dissolved oxygen levels in Mesomikenda Lake or Dividing Lake. Therefore, the profile data collected is considered to be sufficient to characterize the water column profile for the purposes of the EA. Nonetheless, the concern is noted and future baseline sampling campaigns will collect measurements at key lake stations at 1 m intervals in Mesomikenda Lake and Dividing Lake from surface to the depth of 5 m below the top of the hypolimnion to support future permitting, as required.</p>	None.	n/a
695	MOECC - Northern Region - Surface Water	<p>MOE-SW18</p> <p>Appendix J – Water Quality, Water Quality Baseline Report Appendix B Water Column Profile Plots</p> <p>All lake profiles are labelled Bagsverd Lake.</p> <p>The correct lake and basin name should be provided for each lake profile plot.</p>	<p>The lake profile station names have been corrected and the revised profile plots are presented in Appendix J (Water Quality TSD), Attachment I.</p>	Corrected the figure titles in lake profile plots.	Appendix J, Attachment I, Appendix B (Water Column Profile Plots)
696	MOECC - Northern Region - Surface Water	<p>MOE-SW19</p> <p>Appendix J – Water Quality, Water Quality Modeling Report, 2.4 Modelled Parameters, 2.6 Key Model Limitations and Assumptions</p> <p>Selection of parameters for modelling was based on humidity cell test data collected between 20 and 34 weeks; earlier results were excluded. The report notes there is uncertainty that the mine rock samples used in the humidity cell tests are representative.</p> <p>Additional data may now be available from continued humidity cell testing. Examination of rock testing results may help identify additional parameters of potential concern.</p> <p>Confirm the parameters of potential concern by examining all rock testing done to date.</p>	<p>Appendix J (Water Quality TSD), Attachment II, Section 2.6 states that screening-level static testing was not conducted on rock samples selected from humidity cell testing and, as such, there is some uncertainty regarding the suitability of the existing humidity cell data to predict the drainage characteristics of the mine rock and pit walls. For the purposes of modelling, it was assumed that that the available humidity cell test data was representative of the range of geochemical characteristics present in the mine rock, pit walls and low-grade ore.</p> <p>Subsequent analysis of the geochemistry data, as presented in Appendix E (Geochemical Characterization Report), suggest that the humidity cell test samples are representative of the range of geochemical conditions expected to be encountered in the mine rock. Graphics that show the cumulative values or concentrations of NPR, carbonate NPR, and various metals for the fourteen humidity cell samples are plotted with the overall geochemical reference dataset are presented in Appendix E. The NPR values, carbonate NPR values and trace element concentrations measured in the humidity cell samples generally cover the wide range of values observed in the overall geochemistry dataset. Based on a review of the geochemistry data to date, it is our opinion that the humidity cell test results represent a reasonable range of geochemical conditions and all parameters of concern have been captured in the water quality effects predictions.</p>	None.	n/a

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697	MOECC - Northern Region - Surface Water	<p>MOE-SW20</p> <p>Appendix J – Water Quality, Water Quality Modeling Report, 2.5.3.4 Pit Lake Water Quality</p> <p>This section mentions a model assumption for the fully-flooded open pit is the top 1/3 (188 m) will be well-mixed and the bottom 2/3 (376 m) will not mix with the shallow pit water due to chemical stratification.</p> <p>Not discussed was the sensitivity of the open pit water quality model to the assumed chemical stratification depth.</p> <p>The EA should present (a) the empirical data or modelling that was the basis for the assumed depth of open pit density boundary; and (b) the sensitivity of the open pit water quality model to the assumed open pit mixing depth.</p>	<p>As described in Chapter 5 of the EA, the final open pit will measure approximately 2.1 km² (210 ha) with a depth of approximately 550 m. The water quality model predicted concentrations in the Côté pit lake assuming a fully mixed mixolimnion that does not mix with the monimolimnion below. The assumption that the upper one-third of the pit volume would be well-mixed and the bottom two-thirds of the pit volume would be assumed to not mix with the shallow pit water was based on analogous sites where chemical stratification was observed in deep pit lakes.</p> <p>For example, at the Gahcho Kue mine, Kennady Lake will be dewatered during operations and three open pits will be established. Detailed modelling of one of the Gahcho Kue pit lakes, approximately 275 m deep, predicted that long-term stratification would occur and stable meromictic conditions would form in the bottom part of the pit once the pit had been flooded during post-closure. The depth of stratification in the modelled Gahcho Kue pit was estimated at approximately 75 m. Furthermore, Doyle and Runnels (1997) and Pieters and Lawrence (2014) cite examples of northern pit lakes that display stratification in the upper 10 to 30 m of the water column. Although these pit lakes are shallower than the Côté pit lake, ranging from approximately 40 to 275 m depth, they are relevant examples of pit lakes that only partly mix in the uppermost layer with considerable proportions of the pits being meromictic.</p> <p>The assumption of a fully mixed mixolimnion essentially simulates turnover conditions within that layer (i.e., when concentrations in the uppermost portion of Côté pit lake would be highest). In actuality, it is expected that the water quality in the upper portion of the mixolimnion (the epilimnion), which flows to the downstream receivers, would be better of quality than the quality that is in the lower part of the mixolimnion for most times of the year. The deeper parts of the mixolimnion would be influenced by runoff and seepage from the MRA due to the higher total dissolved solids relative to the natural runoff inputs; therefore, the bottom of the mixolimnion would be expected to have relatively higher concentrations, particularly during times when the mixolimnion is stratified. Modeling the mixolimnion as a fully mixed layer in the Côté pit lake is considered to be a conservative approach for the purposes of the EA because it incorporates the conservative mass input from the MRA (i.e., the model assumes that the mass is not lost to the deeper, meromictic part of the pit lake). Therefore, during periods when the mixolimnion is stratified, the water quality of the uppermost water in the Côté pit lake would be expected to be better than predicted using the water quality model. Because fully mixed conditions are being simulated in the mixolimnion, the simulated concentration is a function of the mass load input versus the mass load output. As such, assuming a shallower chemocline would serve only to refine the volume in which the input water from upstream receivers and natural runoff will mix and would not materially effect the steady state water quality of the Côté pit lake outflow.</p>	None.	n/a
698	Ministry of Transportation	<p>The Ministry of Transportation (MTO) would like to thank IAMGOLD for its June 17, 2014 distribution of the Draft EA/EIS for our review. The MTO has reviewed the documents and does not have any comments at this time.</p> <p>We are interested in hearing from IAMGOLD in the future. Please direct all correspondence related to this Project to Marlo Johnson, Head, Environmental Section.</p>	The comment has been noted. No changes to the EA are required.	None.	n/a

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699	Environment Canada	<p>Given the expected development pressures in northern Ontario, EC is concerned with the potential effects of mining projects on migratory birds, and in particular, avian species at risk. The <i>Canadian Environmental Assessment Act</i> (CEAA 2012) is clear that under section 5, the environmental effects that are to be taken into account in relation to a physical activity, a designated project or a project include a change that may be caused to the components of the environment that are within the legislative authority of Parliament. The components include migratory birds as defined in subsection 2(1) of the <i>Migratory Birds Convention Act, 1994</i> (MBCA). While the effects on all migratory birds must be adequately assessed, avian species at risk can be particularly sensitive and are covered by the MBCA and the <i>Species at Risk Act</i> (SARA), which are both administered by EC. In order to assess the potential effects of these new developments, EC is recommending that proponents of new mining developments conduct:</p> <ol style="list-style-type: none"> 1. Pre-construction baseline surveys, 2. A desktop analysis to predict the effects of the project on migratory birds and species at risk, and 3. Post-construction surveys in the context of a follow-up program to validate the predictions. <p>Details on each of the above recommendations are provided.</p>	<p>Recommendation 1 and 2 were conducted using protocols provided by EC during baseline data collection activities for this Project.</p> <p>With the intent to minimize wildlife interactions, IAMGOLD is committed to monitoring interactions with wildlife at the Project site (see Chapter 16). IAMGOLD feels confident about the conclusions of the impact assessment with regards to potential effects on wildlife and sees no justification for any additional monitoring programs.</p> <p>Typically monitoring programs are needed when there are identified risks, levels of uncertainties and extensive mitigation measures required to mitigate potential effects. However, this does not apply to this Project.</p>	None.	n/a
700	Natural Resources Canada	<p>Geochemical Characterization - Mine Rock, S.9.1.2, Appendix E</p> <p>The proponent has conducted a series of tests (e.g. ABA, Rietveld-XRD, humidity cell) to determine acid, neutralization and metal leaching potential of mine rocks.</p> <p>Rietveld-XRD analysis data did not indicate the corresponding rock type or ABA data for each set of analysis results, and was not presented in a manner that made it possible to compare results from the same and different rock types.</p> <p>NRCan notes that the humidity cell test overestimates solute release rate (mg/kg) and underestimates concentrations (mg/L) because of high rate of leaching (flushing) and because leaching is far greater than rate of sulphide oxidation. As such, the measurement of time to NP depletion may be wrong because leaching is so much greater than rate of sulphide oxidation. The proponent has established field test pads which will provide a better estimate of concentration and loading from waste rock.</p> <p>Typically, 34 weeks is very short period of humidity cell testing.</p> <p>(a) NRCan requests that the proponent, prior to mining, should conduct petrographic analysis to indicate possible concentration of AP and lower NPR in reactive fraction of waste rock. While useful if provided prior to completion of EA, this is not necessary for the EA.</p> <p>(b) NRCan requests that the proponent provide tables (preferably in excel so data can be manipulated) with the ABA and Rietveld-XRD results sorted by rock types.</p>	Comments noted. No changes to the EA are required.	None.	n/a
701	Environment Canada	<p>EIS Report, Section 11.2.2, Table 11-4</p> <p>In Table 11-4: Impact Assessment Matrix for the Operations Phase under Water Quality and the indicator Change in Water Quality related to discharges and runoff the Proponent has only identified process water and the TMF. In recognition of requirements stated in the MMR it may be more appropriate to state "construction and operation of engineered water management systems to collect surface drainage (runoff) and seepage from the operations area and in particular the TMF, MRA, low-grade ore stockpile, overburden stockpiles, plant site area and associated buildings, and explosives manufacturing areas.</p> <p>Consider the relevance of having the appropriate plans and engineered structures in place and amend Table 11-4 accordingly.</p>	<p>The text in the Amended EIS / Final EA Report has been updated to include the wording supplied by Environment Canada.</p> <p>For the emulsion plant, there are no expected pathways for groundwater seepage and therefore no seepage collection is proposed or anticipated to be required.</p> <p>Seepage and runoff around the emulsion plant will be collected. IAMGOLD is planning on evaporating this runoff, or discharging to land in accordance with Provincial requirements.</p>	Wording supplied by Environment Canada has been used to update the mitigation measures for water quality during the operations phase.	Tables ES-4, 10-1, 11-4

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702	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; General Comments about the pre-screening of the Candidate Alternatives EC’s Guidelines for Mine Waste Disposal has not been followed by the proponent. The first step is to identify candidate alternatives by developing a list of all possible candidate mine waste disposal alternatives for the site. The second step, the pre-screening assessment, is to optimize the alternatives to be analyzed in more detail by eliminating alternatives that have obvious deficiencies or ‘fatal flaws’. Unfortunately, these steps have not been met since the proponent has identified six alternatives for which a pre-screening assessment has not been done.</p> <p>In section 2 (Background), the proponent indicates that a pre-screening assessment has been completed whereby a total of 14 candidate tailings management sites were identified and investigated as part of an initial pre-screening assessment (KPL, 2012) but has failed to provide and include the information as part of this alternatives assessment analysis. The proponent should note that the alternatives assessment document must be a standalone document that should be complete and include all the necessary information, description, justification and rationale that were considered in evaluating the alternatives. As water bodies frequented by fish will be needed for tailings disposal, the alternatives assessment analysis should provide all information that was used to justify such an approach. In addition, the alternatives assessment study as well as the fish habitat compensation plan to offset the loss of fish habitat resulting from the deposit of tailings in waters frequented by fish are key documents that will be needed to proceed with the MMER amendments which require public consultations.</p> <p>In order to adequately complete these steps, the proponent should provide a map indicating the boundaries of the mine property, which has not been included in the report. Then the proponent is requested to identify all possible alternatives for which fatal flaws assessment will be conducted to eliminate alternatives that could not be considered because of obvious deficiencies.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada’s comments. As noted in the response to Comment #703 it is IAMGOLD’s intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

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703	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants, March 5, 2013; Appendix U3 Tailings Management Facility Alternatives Assessment, March 5, 2013</p> <p>In general, in developing the alternative assessments for the Mine Rock Area and the Tailings Management Facility, the Proponent has partly followed the Multiple Accounts Analysis approach outlined in the Guidelines for the Assessment of Alternatives for Mine Waste Disposal (EC 2011), however there are a number of areas where the requirements of the guidelines have not been met. The document needs to be updated as a whole.</p> <p>The proponent is reminded that the alternatives assessment is needed to support a potential amendment to the <i>Fisheries Act</i> and as such it is important that the document includes, among other things, a thorough evaluation of the impacts to water bodies, aquatic life and socio economic factors. This evaluation needs to take into account the views of the communities impacted by the project. The alternatives assessment report as well as the fish habitat compensation plan to offset the loss of fish habitat resulting from the deposit of mine waste in waters frequented by fish will also be key documents used during the public consultations that are required for Metal Mine Effluent Regulations amendments. Therefore, it should be a standalone document that must be complete and include all the necessary information, description, justification and rationale that were considered in evaluating the alternatives. This document ultimately needs to justify that the use of the fish frequented water bodies is the option that makes the most sense.</p> <p>Please note as well that the comments provided below are organized separately for Appendices U1 (Waste Rock Areas) and U3 (Tailings Management Facilities) of the report. Please note that the comments for these two sections are similar</p> <p>EC requests that the proponent provide a standalone document for the alternatives assessment for the mine rock and tailings management facilities that addresses the following comments related to this aspect.</p>	<p>IAMGOLD is confident that it has thoroughly consulted on the deposition of mine rock and tailings for the Cote Gold Project. In response to stakeholder comments, IAMGOLD revised the MRA in order to reduce the Project footprint and the potential for noise and visual impacts on the nearby Mesomikenda Lake cottagers.</p> <p>As discussed with the CEA Agency and Environment Canada, IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, the Assessment of Alternatives for Mine Waste Disposal will be provided in a standalone document and updated to address Environment Canada's comments.</p> <p>It is noted that this document and the requested edits are part of the process to potentially amend the <i>Fisheries Act</i>, and as such, is not required to advance the EA process. It is the intent of IAMGOLD to provide the updated version in a timely manner, such that the streamlined MMER Schedule II process will remain a viable approval option.</p>	None.	n/a
704	Environment Canada	<p>Appendix U1 and Appendix U3</p> <p>It is not clear whether any fish-frequented natural water bodies would be affected by the polishing pond and the mine water pond. If that is the case, the two ponds will be subject to Schedule 2 of the MMER.</p> <p>EC requests that the proponent:</p> <ol style="list-style-type: none"> 1. Provide information on whether there are fish-frequented natural water bodies that would be affected by the polishing pond and the mine water pond. 2. Add the locations of the Polishing Pond and the Mine Water Pond to Figure 1.2 Overall Site Layout. 	This subject has been discussed with Environment Canada and will be considered as part of the MMER Schedule II regulatory amendment.	None.	n/a
705	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Figure 1-2</p> <p>In various sections of the EIS, the proponent indicates low-grade ore will be stockpiled northeast of the open pit for processing later in the mine life. On Figure 1-2 of the EIS, a portion of area envisaged by the proponent to stockpile the low-grade ore will impact a portion of the upper section of the Three Duck Lakes. (Also see comment EC-1 above.)</p> <p>If this area of Three Duck Lake is fish frequented, the Metal Mining Effluent Regulations (MMER) will need to be amended in order to add this portion of the lake to Schedule 2 of the MMER.</p> <p>Assuming that the portion of the Upper section of the Three Duck Lakes is frequented by fish, the proponent will need to provide an alternative assessment for the disposal of the low-grade ore since it is going to impact waters that are frequented by fish in order to support a regulatory amendment to MMER Schedule 2.</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
706	Environment Canada	<p>Chapter 4 Consultation Summary</p> <p>It is stated in Chapter 4 "The goal of consultation for the Project is to provide stakeholders, Aboriginal communities and government agencies with information and gather their feedback about:• the Company;• the status of exploration and mining-related activities;• the EA processes and related documents including the Provincial ToR and the Federal PD;• the environmental baseline studies and any anticipated environmental effects and associated effects management strategies; and• the closure plan concepts (this will be a key consultation activity as part of preparation of the final EA)."</p> <p>Public comments and traditional knowledge received through consultations are also important information for selection of alternative means to carry out the project and address the public concerns through the project design.</p> <p>EC requests that the proponent include "to collect inputs for the project design and selection of evaluation criteria" in the goal of their consultation.</p>	<p>Chapter 4 of the EA includes details that the goal of consultation is to seek feedback on the Project and the methodology used for, alternatives considered, and findings contained in the EA.</p> <p>These goals are consistent with the goals of consultation outlined in the EIS Guidelines and the Approved ToR.</p>	None.	n/a
707	Environment Canada	<p>Appendix D Consultation Record</p> <p>Table D12-1 to Table D12-17 record the comments received and responses provided for each consultation session. However, references are not provided for the location in the EIS where responses are provided. For example, Table D12.2 Topic Tailings Impoundment, the proponent responded "The EA report will include further information regarding the Tailings Management Facility design and closure. Additionally, a malfunctions and accidents section will be included in the EA report, which will have specific details on potential emergencies with the tailings facility." But it is not clear where this information is provided.</p> <p>EC requests that the proponent insert references for the EIS location in which the responses are provided to allow for proper cross referencing.</p>	<p>IAMGOLD is of the opinion that given the breadth of comments received during the EA, it would be more accessible to interested stakeholders to use the table of contents to discern which sections their comments have been addressed in.</p> <p>All comments received directly on the EIS / Draft EA Report, prior to September 30, 2014, have been included as Appendix Z to the Amended EIS / Final EA Report. Responses are provided to comments in this appendix. Any changes to the EA and its appendices as a result of the comment / response have been tracked in this location.</p>	None.	n/a
708	Environment Canada	<p>Chapter 5, Appendix U1</p> <p>It is stated in Chapter 5 that "Open pit mining will occur at a mining rate of approximately 60,000 tonnes/day (tpd) of ore production. Extraction of the ore through pit development will result in the production of an approximately estimated 20 million tonnes (Mt) of overburden and 850 Mt of mine rock."</p> <p>In this case, the strip ratio is only 2.65, which is lower than industrial practice.</p> <p>EC requests that the proponent provide clarification on the estimation of mine rock generation and verify the estimate of the Mine Rock footprint.</p>	<p>The figures quoted from Chapter 5 are valid and the mine rock footprint described in Chapter 5 has been verified and is deemed to be appropriate.</p>	None.	n/a
709	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Pre-screening of the Candidate Alternatives</p> <p>EC's Guidelines for the Assessment of Alternatives for Mine Waste Disposal indicate that the first step is to identify candidate alternatives by developing a list of all possible candidate mine waste disposal alternatives for the site. The second step, the pre-screening assessment, is to optimize the alternatives to be analyzed in more detail by eliminating alternatives that have obvious deficiencies or 'fatal flaws'.</p> <p>In Section 1.5 (background), the proponent indicates that a total of 12 candidate MRA sites were identified and investigated as part of an initial pre-screening assessment (KPL, 2013) but they did not provide the information as part of this alternatives assessment analysis.</p> <p>EC requests that the proponent provide the pre-screening study and incorporate it in the alternative assessment report. The study should include the detailed information, description and justification that were considered in eliminating some of the candidate MRA sites.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
710	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Section 2.2 Summary of MRA Options</p> <p>The description of each candidate MRA is weak and too general in describing each option. EC requests that the proponent describe in more detail the specifics of each option taking into account presence of water bodies, water courses, fish communities, fisheries values, hydrology, hydrogeology, water quality, aquatic habitat, vegetation and wildlife, terrestrial habitat, wetlands, etc. Maps indicating detailed characteristics that were considered in the analysis should be provided for each alternative.</p> <p>For each candidate option, please also provide the following additional details:</p> <ul style="list-style-type: none"> ▪ subsurface conditions including lithological units underlying the candidate options ▪ overburden thickness and depth to bedrock ▪ competency of bedrock and presence/absence of structural weaknesses such as faults, joints, etc. ▪ ability to control and manage seepage ▪ number of dams required for each candidate option and their dimensions (length, width, height). 	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
711	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Table 2.1 Summary of Mine Rock Area Options Details</p> <p>The criteria 'Land Ownership and Mineral Rights' indicates that options 2, 3 and 4 are not completely within the mine/claim boundary.</p> <p>In Table 2.1, the proponent indicates that alternatives 2, 3 and 4 are not completely within the boundaries of the mine property but does not indicate how this could affect the choice of these options.</p> <p>The proponent should explain if (and how) land ownership could impact the choice of the options and provide, a map showing the project boundaries in relation to each option.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
712	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Table 2.1 Summary of Mine Rock Area Options Details</p> <p>The proponent indicates that MRA 1, 2, 3 and 4 potentially contain water bodies and/or a watercourse (Criteria 'Site Contains a Waterbody and /or a Watercourse').</p> <p>The proponent needs to better characterize each of these alternatives and indicate if water bodies and/or streams are present as well as if they are fish frequented. For those that are fish frequented, assessment of fisheries resources is required.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

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713	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Table 2.1 Summary of Mine Rock Area Options Details</p> <p>The alternative assessment document is dated March 5, 2013 but the Draft Environmental Assessment Report is dated May 2014. In that regard, several discrepancies have been noted, namely and most importantly the fact that the conclusions of alternative assessment analysis does not reflect what is proposed in the draft EIS as the proposed MRA.</p> <p>For example:</p> <ul style="list-style-type: none"> ▪ The draft EIS indicates that the mine rock and overburden will be disposed of in only one area which is a slightly different version of option 1 without options 2 and 3 that were considered in the alternative assessment analysis. ▪ On page 5-9 of the EIS (section 5.5.5.1 Mine Rock), it is stated that the mine rock and overburden will be disposed of in an estimated total area of 400 ha with an ultimate elevation of 490 masl. However, the alternative assessment document (section 2.2.1 MRA-1) states that the MRA-1 has an approximate footprint area of 372 ha with a final elevation of 481 masl and has the capacity to store 54% (240 Mm³) of the total planned mine rock production volume. <p>The configuration and outline of MRA 1 as shown on Figure 2.1 of Appendix U1 does not match the configuration shown on Figure ES-2 in the Executive Summary. It should be noted that both MRA are almost the same in term of surface and height but seem to be quite different in storage capacity.</p> <p>EC requests that the proponent revisit the alternatives assessment analysis and make sure that the conclusions of the analysis are consistent with what it is proposed in the EIS documents.</p> <p>The proponent needs to address the discrepancies as listed in our comments.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
714	Environment Canada	<p>Appendix U1- Mine Rock Area Alternatives Assessment and Appendix U3-Tailings Management Facility Alternatives Assessment Report</p> <p>It is stated "At closure, reclamation activities will include: physical stabilization measures, capping of the tailings surface (as required) and seeding, removal of pipeworks and ancillary facilities, vegetation of the disturbed areas, and implementation of an appropriate water management and water quality measures", and "PAG mine rock will be managed on surface during mine operations in segregated stockpiles to facilitate collection and treatment of runoff from the piles, as/if needed."</p> <p>EC requests that the proponent specify the conditions when the capping of tailings at closure and segregation of mine waste rock stockpile will be triggered, respectively.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
715	Environment Canada	<p>Table 4.3 Summary of Indicator Values in Appendix U3, Table 3.3 Mine Rock Area Alternatives Assessment Summary of Indicator Values in Appendix U1</p> <p>It is stated: "no data on relative aboriginal values or current uses" for the "Aboriginal Peoples Interests and Current Use" indicator under the Socio-Economic account.</p> <p>EC requests that the proponent provide information on when the data on Aboriginal Peoples' interests will be available and explain what their plan is to obtain the information.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

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716	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Section 2.2 Summary of MRA Options</p> <p>The proponent has concluded in their assessment of alternatives that the preferred option for MRA is Option MRA 1. EC noted that in section 2.2.1 (page 6 of 29), the proponent has indicated that a reserve of ore is potentially present within the site as inferred from condemnation drilling. This means that the ore underneath MRA 1 may not be recoverable in the future, which is a potential disadvantage of this option.</p> <p>EC requests that the proponent clarify whether and how they have factored the potential sterilization of the ore reserve in option MRA 1 in the MAA.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
717	Environment Canada	<p>Table 3.1, Table 3.2, Table 3.3, Table 3.4 and Table 3.5 in Appendix U1</p> <p>Errors are found on scores assigned to indicators (Table 3.5) following the scales listed in Table 3.3 and Table 3.4:</p> <p>Account Indicator Option Table 4.5 Correction</p> <p>Economics Haul distance MRA6 4 3</p> <p>Economics Haul distance MRA7 3 2</p> <p>EC requests that the proponent verify these scores.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
718	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Table 3.5</p> <p>The sub-account 'Land Acquisition' is included under the 'Technical Account' in Table 3.5. This sub-account does not appear to be appropriate for the 'Technical Account' and should be moved to another appropriate Account such as the 'Socio-economic Account'.</p> <p>EC requests that the proponent move this sub-account to the "Socio-economic" account, where it may be more appropriate.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
719	Environment Canada	<p>Table 3.1 Mine Rock Area Alternatives Assessment Account, Sub-account and Indicator Rationale in Appendix U1</p> <p>"Foundation preparation and access construction" is located in the Economics account only. It should be in the Technical account as well as it reflects the technical challenges.</p> <p>It is recommended that "Foundation preparation and access construction" also be added to the Technical account.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

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720	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Table 3.1 Account, Sub-Account and Indicator Rationale</p> <p>The rationale provided in this table is weak and too general. As it stands, these descriptions are too general and not specific to the project. Since the description of each MRA option is weak in providing detailed information (section 2.2) based on site specificity, it is impossible for an external reviewer to have a good understanding of how the selected indicators are reflecting and taking into account site specificity. Detailed comments on the description of each indicator provided in Appendix A are provided below.</p> <p>EC requests that the proponent provide more in-depth description of the indicators that are considered in the analysis.</p> <p>The proponent should consider other indicators in the Assessment of alternatives that would contribute to assessing the project impacts, such as:</p> <ul style="list-style-type: none"> ▪ Environmental: dam failure potential, dam failure consequences, MRA footprint, total catchment area, total watershed area, existing streams and water bodies frequented by fish, value of fish habitat, loss of rare and endangered wildlife species, quantity and quality of terrestrial habitat disturbed, wildlife, terrestrial and aquatic flora, water quality, potential for contamination, etc. ▪ Socio-economic: impact on existing communities, recreational use, Importance for aboriginal land and resource use activities (hunting/trapping/ fishing/ plant gathering), public acceptability, community consultation, community engagement, etc. ▪ Technical: number of containment dams required, total containment dam volume, embankment construction, water management, diversion dams required, etc. ▪ Economic: post closure cost, fish habitat compensation cost, water treatment cost, etc. 	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
721	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Table 3.2 Account, Sub-account and Indicator Weights</p> <p>The sub-account and indicator weights are not justified. These weights need to be justified and supported by appropriated information that was considered in establishing them as indicated in EC's Guidelines.</p> <p>Please provide justifications (rationale) for the sub-account and indicator weights with appropriate supporting information that was considered in establishing them as indicated in the EC Guidelines.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
722	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Table 3.3 Summary of Indicator Values</p> <p>Several indicators considered in the analysis do not have any bearing on the analysis since they have the same values. This is the case for the following indicators: Adjacent Fish Ecology, Total Moose Winter Habitat Altered/Lost, Total Moose Aquatic Feeding Habitat Altered/Lost, Post-Closure Chemical Stability, Human Health (Indirect Exposure), Aboriginal Peoples Interests and Current Land Use, Presence of Archaeological Sites, Recreational Access, Geotechnical Conditions, and Consequence of Operational Error.</p> <p>Indicators that do not provide any differentiation between options should not be included in the ledger analysis as indicated in the EC Guidelines (section 2.5).</p> <p>For those, the proponent should provide a list of all indicators that were considered but not included in the analysis on that basis and provide the rationale explaining why they were excluded.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

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723	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Table 3.4 Summary of Indicators value Scales</p> <p>The value scales established for several indicators are inappropriate to reflect the project scenario. The following are some examples that are given to illustrate the issue.</p> <p>- Number of Watersheds: according to Table 3.3, the number of watersheds impacted by the various MRA options range from 0 to 2 but the value scale provided in Table 3.4 range from 0 up to greater than 6. Furthermore, the value of 6 (best) has been given when one watershed is impacted. The proposed scale would be more appropriate since it better reflects the range of values provided in Table 3.3 and provides a better differentiation between MRA options. Based on the suggested scale, the indicator values would then be 4, 4, 2, 4, 2 and 2 instead of 6, 6, 5, 6, 5 and 5.</p> <p>Value Proposed by Proponent Suggested by EC</p> <p>6(best) 1 watershed 0 watershed</p> <p>5 2 -</p> <p>4 3 1 watershed</p> <p>3 4 -</p> <p>2 5 2 watershed</p> <p>1(worst) > 6 > 2</p> <p>- Stream Length Removed: according to Table 3.3, the stream length removed ranges from 0 m to 530 m but the value scale for this indicator ranges from 0 to 6 km in Table 3.4. The suggested following scale would be more appropriate and would provide a better differentiation between options. Based on the suggested scale, the indicator values would then be 3, 1, 2, 6, 6 and 6 instead of 5, 5, 5, 6, 6 and 6.</p> <p>Value Proposed by Proponent Suggested by EC</p> <p>6(best) None none</p> <p>5 0.0 - 1.5 km 1-125 m</p> <p>4 1.6 and 3.0 km 126 - 250 m</p> <p>3 3.1 and 4.5 km 251- 375 m</p> <p>2 4.6 and 6.0 km 376 - 500 m</p> <p>1(worst) > 6.0 km > 500 m</p> <p>- Loss of waterbodies: according to Table 3.3, the area of waterbodies lost ranges from 0 ha to 8.6 ha but the scale value ranges from 0 to greater than 250 ha using different increments. The proponent should explain why different increments are used. The proposed scale by the proponent is inadequate and is not reflecting the indicator values determined for each MRA options. Also, this indicator should not include wetlands which should be considered separately. It is important to differentiate water bodies that are frequented by fish and wetlands. The suggested following scale would be more appropriate and would provide a better differentiation between options. Based on the suggested scale, the indicator values would then be 6, 6, 2, 5, 6 and 5 instead of 6, 6, 5, 6, 5 and 5.</p> <p>Comment continues on next page.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

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723 cont	See previous page.	<p>Value Proposed by Proponent Suggested by EC</p> <p>6(best) None None 5 0 - 15 ha 0 – 2,25 ha 4 15 - 50 ha 2.26 – 5.50 ha 3 50 - 125 ha 5.51 – 7.75 ha 2 125 - 250 ha 7.76 - 10 ha 1(worst) > 250 ha >10.0 ha</p> <p>- Flow Change: For the indicators that are evaluated qualitatively, scales should be explained, described and justified.</p>	See previous page.	See previous page.	See previous page.
724	Environment Canada	<p>Appendix U1, Mine Rock Area (MRA) Alternatives Assessment Report – Knight Piesold Consultants; Section 5.1 Conclusion</p> <p>The conclusions of the report are unclear. It is stated that "The results of the MAA indicate that MRA 1, 2 and 3 are the preferred MRA Options for the project".</p> <p>The ranking for MAR1, 2 and 3 are #1, #2 and #4. MRA 2 and MRA3 are in the 2nd the 4th place, how can they be a preferred option?</p> <p>Does it mean that the combined three options will be used for mine rock disposal?</p> <p>The total capacity of the combined three options will be 732 Mm³ (i.e., 240, 174 and 318 Mm³) while the total capacity required is 442 Mm³.</p> <p>EC requests that the proponent clarify the conclusions made for MRA selection.</p> <p>In addition, the proponent is requested to address the inconsistency between the conclusions in the Alternative Assessment report and what it is proposed as MRA in the draft environmental assessment report.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p> <p>The MRA location as shown in Figure 1-2 will be used.</p>	None.	n/a
725	Environment Canada	<p>Economic Indicators:</p> <ul style="list-style-type: none"> ▪ The economic account includes several indicators that are not evaluated based on costs but rather on indirect components of the MRA options. The proponent needs to provide a detailed cost assessment for each MRA option as well as the cost for the fish habitat compensation plan to offset the loss of fish habitat resulting from the deposit of waste rock in waters frequented by fish. <p>For all the indicators, EC requests that the proponent provide justification of the scoring for each indicator, as described in the previous column.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
726	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; Maps</p> <p>As presented, the maps included in the report do not provide sufficient details on each alternative considered especially with respect to lakes and streams frequented by fish that will be impacted.</p> <p>The analysis should include more detailed maps. For better clarity and in order to provide a better understanding, the proponent is requested to provide maps that include detailed and specific information that are considered in the analysis. \</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
727	Environment Canada	<p>As presented, the maps included in the report do not provide sufficient details on each alternative considered especially with respect to lakes and streams frequented by fish that will be impacted.</p> <p>The analysis should include more detailed maps. For better clarity and in order to provide a better understanding, the proponent is requested to provide maps that include detailed and specific information that are considered in the analysis.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

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728	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; Section 3.2 Summary of TMF Options</p> <p>The Summary of TMF Options section of Appendix U3 is vague and too general in describing each option.</p> <p>EC requests that the proponent describe in more detail the specifics of each option taking into account presence of water bodies, water courses, fish communities, fisheries values, hydrology, hydrogeology, water quality, aquatic habitat, vegetation and wildlife, terrestrial habitat, wetlands, etc. Maps providing detailed characteristics are requested for each alternative.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
729	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; Section 3.2 Summary of TMF Options</p> <p>The criteria 'Land Ownership and Mineral Rights' indicates that options 1, 2 and 3 are not completely within the mine/claim boundary. However, in Table 4.3, all alternatives get the same score for indicator "Land Area and Title Holders". For the options that are located partly outside of the mine property, the proponent must indicate if this could have a significant impact on the choice of the option (or could it be considered as a fatal flaw). As it stands, the conclusions of the alternatives assessment analysis indicates that the option 1 (TMF 1B) is the preferred tailings disposal option but there is no certainty that scenario is feasible as proposed because it partly falls outside the mine property.</p> <p>EC requests that the proponent verify and explain the evaluation of "Land Area and Title Holders" indicator.</p> <p>EC requests that the proponent include maps that show the boundaries of the mine property and must indicate, for each option, the areas that are within the boundary and the ones that are outside of the mine property.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
730	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; Section 3.2 Summary of TMF Options</p> <p>The proponent indicates that all TMF options contain water bodies and/or watercourses (Criteria 'Site Contains a Waterbody and /or a Watercourse').</p> <p>As presented, this criterion also includes the presence of wetlands.</p> <p>The proponent needs to better characterize each of these alternatives and indicate if water bodies and/or streams are present as well as if they are fish frequented. For those that are fish frequented, assessment of fisheries resources is required.</p> <p>Wetlands should be assessed separately from waterbodies/ watercourses.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

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731	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; Table 4.1 Account, Sub-Account and Indicator Rationale</p> <p>The rationale provided in this table is weak and too general. As it stands, these descriptions are too vague and not specific to the project. Since the description of each TMF option is weak in providing detailed information (section 3.2) based on site specificity, it is impossible for an external reviewer to have a good understanding of how most of the selected indicators are reflecting and taking into account site specificity. Detailed comments on the description of each indicator provided in Appendix A are provided below.</p> <p>EC requests that the proponent provide more in-depth description of the indicators that are considered in the analysis.</p> <p>The following indicators are typically considered:</p> <ul style="list-style-type: none"> ▪ Environmental: dam failure potential, dam failure consequences, TMF footprint, total catchment area, total watershed area, existing streams and water bodies frequented by fish, value of fish habitat, loss of rare and endangered wildlife species, quantity and quality of terrestrial habitat disturbed, wildlife, terrestrial and aquatic flora, water quality, potential for contamination, etc. ▪ Socio-economic: impact on existing communities, recreational use, Importance for Aboriginal land and resource use activities (hunting/trapping/ fishing/ plant gathering), public acceptability, community consultation, community engagement, etc. ▪ Technical: number of containment dams required, total containment dam volume, embankment construction, water management, diversion dams required, etc. 	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
732	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; Table 4.2 Account, Sub-Account and Indicator Weights</p> <p>The sub-account and indicator weights are not justified. These weights need to be justified and supported by appropriated information that was considered in establishing them as indicated in EC's Guidelines.</p> <p>Please provide justifications (rationale) for the sub-account and indicator weights with appropriate supporting information that was considered in establishing them as indicated in EC's Guidelines.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a
733	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; Table 4.3 Summary of Indicator Values</p> <p>Several indicators considered in the analysis do not have any bearing on the analysis since they have the same values. This is the case for the following indicators: Number of Watersheds, Change in Receiving Water Quality, Post-Closure Chemical Stability, Human Health (Direct Exposure), Human Health (Indirect Exposure), Aboriginal Peoples Interests and Current Land Use, Presence of Archaeological Sites, Recreational Access, Visibility and Aesthetics, Land Area and Title Holders, Monitoring and Maintenance.</p> <p>Indicators that do not provide any differentiation between options should not be included in the ledger analysis as indicated in EC's Guidelines (section 2.5).</p> <p>For those, the proponent should provide a list of all indicators that were considered but not included in the analysis on that basis and provide the rationale explaining why they were excluded.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

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734	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; Table 4.4 Summary of Indicator Value Scale</p> <p>The value scales established for several indicators are inappropriate and do not reflect the range of values determined for the indicators associated with each TMF option. In some other cases, the scales are not defined with the view of maximizing the differentiation between options. The following are some examples that are given to illustrate the issue.</p> <ul style="list-style-type: none"> - Total Catchment Area: Based on the proponent scale, the indicator values for the TMF options are 2, 4, 4, 4, 4 and 5. Based on the suggested scale, the indicator values would be 2, 3, 3, 4, 3 and 5. <p>Value Proposed by Proponent Suggested by EC</p> <p>6(best) < 600 < 600 5 600-700 601-675 4 700-800 676-750 3 800-900 751-825 2 900-1000 826-900 1(worst) > 1000 > 900</p> <ul style="list-style-type: none"> - Number of Watersheds: According to Table 4.3, the number of watersheds impacted by the various TMF options is the same for all options, i.e., 1. As previously indicated, this indicator should not be included in the analysis since it does not provide any differentiation between options as indicated in EC's Guidelines (section 2.5). - Stream Length Removed: According to Table 4.3, the stream length removed ranges from 0 m to 9.2 km. The following suggested scale would be more appropriate in reflecting the values indicated in Table 4.3 in order to provide a better differentiation between options. Based on the suggested scale, the indicator values would then be 1, 2, 2, 4, 5 and 6 instead of 2, 3, 3, 4, 4 and 6. <p>Value Proposed by Proponent Suggested by EC</p> <p>6(best) None < 2 km 5 0 – 3 km 2 - 3.5 km 4 3 – 6 km 3.5 – 5 km 3 6 – 9 km 5 – 6.5 km 2 9 – 12 km 6.5 – 8 km 1(worst) > 12 km > 8 km</p> <ul style="list-style-type: none"> - Loss of waterbodies: According to Table 4.3, the area of waterbodies lost ranges from 73.3 ha to 148.2 ha but the scale values range from 0 to greater than 500 ha using different increments. The proponent should explain why different increments are used. The proposed scale by the proponent is inadequate and is not reflecting the indicator values determined for each TMF option. Also, this indicator should not include wetlands which should be considered separately. It is important to differentiate water bodies that are frequented by fish and wetlands. The suggested following scale would be more appropriate and would provide a better differentiation between options. Based on the suggested scale, the indicator values would then be 3, 2, 2, 5, 4, and 5 instead of 4, 3, 3, 4, 4 and 4. <p>Comment continues on next page.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
734 cont	See previous page.	<p>Value Proposed by Proponent Suggested by EC</p> <p>6(best) None < 70 ha 5 0 - 50 ha 70 – 90 ha 4 50 - 125 ha 90 – 110 ha 3 125 - 250 ha 110 – 130 ha 2 250 - 500 ha 130 - 150 ha 1(worst) > 500 ha >150 ha</p> <p>- Flow Change: For the indicators that are evaluated qualitatively, scales should be explained, described and justified. For instance, the scale defined for this indicator is based on a % change in the flow. The proponent should explain and describe how the flow change was calculated. As it is, there is no means for an external evaluator to assess the adequacy of the information provided.</p> <p>The proponent is requested to revisit all scales and re-evaluate the scores for each alternative accordingly. The conclusion should be updated based on the new scores.</p>	See previous page.	See previous page.	See previous page.

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735	Environment Canada	<p>Appendix U3, Tailings Management Facility (TMF) Alternatives Assessment Report – Knight Piesold Consultants; Section 3.2 Summary of TMF Options, Table 4.3; Appendix A – Description of Indicators</p> <p>The proponent should provide more in depth description of the indicators that are considered in the analysis. As it stands, these descriptions are too general and not specific to the project. Since the description of each TMF options is weak in providing detailed information (section 2.2) based on site specificity, it is impossible for an external reviewer to have a good understanding of how these indicators are reflected and take into account site specificity. The proponent needs to provide in the document a thorough description of the justification for all the values in Table 4.3.</p> <p>Here are some weaknesses that should be addressed for the following indicators:</p> <p>Environmental Indicators:</p> <ul style="list-style-type: none"> ▪ Number of Watersheds: Maps should be provided showing boundaries of the watersheds impacted by each option. Table should also be included comparing each option in terms of number of watersheds and area impacted. ▪ Stream Length Removed: Maps should be provided showing streams impacted. A table listing each stream and their respective length should also be provided. ▪ Loss of Waterbodies: Maps should be provided showing each waterbody impacted. A table listing each waterbody and their respective area impacted should also be provided for each option. ▪ Requires Surface Water Realignment: Maps should be provided showing what the surface water realignment needs are. These water realignments should be described in more detail for each option. ▪ Flow Change: Maps should be included showing the area affected by the flow change. Detailed information should also be provided on how these flow changes were calculated in evaluating this indicator. ▪ Change in Receiving Water Quality: This indicator needs to be better described. The proponent should also explain how this indicator was evaluated for each option. ▪ Potential for Seepage: This indicator needs to be better described. The proponent should also explain how this indicator was evaluated for each option. ▪ Potential for Negative Influence on Surface Water Quality from Groundwater Seepage: This indicator needs to be better described. The proponent should also explain how this indicator was evaluated for each option. ▪ Loss of Fish Bearing Water: The proponent indicates that "The expected quality and quantity of fish habitat potentially lost under the TMF options was used to assign relative scores as a measure of the impact of each option for this indicator". The quantity and quality of fish habitat must be described and assessed for each option and not be assessed based on expectation. The proponent must conduct field studies and characterize the site accordingly. ▪ Adjacent Fish Ecology: Same comment as for the previous indicator. In addition, this indicator should not be included in the analysis since it does not provide a differentiation between options as indicated in EC's Guidelines (section 2.5). This indicator should be redefined to better consider the specifics of the site for each option. ▪ Habitat of Species of Special Concern Altered/Lost: The proponent must better assess and describe the population associated for each of the identified species. The results of the study conducted by Golder (2012) must be summarized as part of the alternative assessment report and included in the analysis. Assessing this indicator based only on habitat lost is insufficient. <p>Comment continues on next page.</p>	<p>IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.</p>	None.	n/a

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
735 cont	See previous page.	<ul style="list-style-type: none"> ▪ Total Moose Winter Habitat Altered/Lost and Total Moose Aquatic Feeding Habitat Altered/Lost: These two indicators are described and taken into account in the analysis but do not have any bearing since there is no habitat associated. The analysis should not include indicators that do not provide differentiation between options as indicated in EC's Guidelines (section 2.5). ▪ Total Vegetative Habitat Altered/Lost: The proponent should identify, assess and describe the plant communities that are across the mine site and justify why this indicator is important and relevant. As presented, there is no indication that this indicator is justified for inclusion in the analysis. ▪ Total Wetland Area Removed: The proponent must provide a better description of the wetlands impacted in terms of quality and better justify its importance. Assessing the impacts on wetlands based on area removed is not adequate. The proponent should describe the wildlife diversity that is referred to in the description of this indicator. ▪ Post-Closure Chemical Stability: This indicator needs better assessment since a certain amount of PAG material will be generated. It is difficult to envisage that water quality will not be impacted. As it stands, the same indicator values have been assigned to each TMF. So, if after reconsideration the indicator values remain the same for all TMF options, the analysis should exclude this indicator since it does not provide differentiation between options as indicated in EC's Guidelines (section 2.5). ▪ Post-Closure Flow Change: Maps should be included showing the area affected by the flow change. Detailed information should also be provided on how these flow changes were calculated in evaluating this indicator. <p>Socio-economic Indicators:</p> <p>The socio-economic account includes seven indicators and among them, six indicators have the same values for all 6 TMF options considered. As already mentioned, indicators that do not differentiate alternatives should not be included in the analysis as per EC's Guidelines (section 2.5). Furthermore, the assessment of this account is weak since it does not take into consideration any impacts that the project may have on the Aboriginal communities and other land users. The only remaining indicator i.e., "Proximity to Existing Permanent or Temporary Residences" is not providing an adequate assessment of the project impacts on the residents. The proponent will need to revisit this assessment and the choice of indicators in order to take into account the impacts of the project on the communities impacted. Furthermore, the proponent will need to take into account the comments provided by these communities and reflect them in the analysis.</p> <ul style="list-style-type: none"> ▪ Proximity to Existing Permanent or Temporary Residences: The justification for including this indicator is weak and needs to be described in more detail. As presently described, it is difficult to assess and understand the importance of the impacts that the project may have on approximately 5 residences located 3 km away from the site considering that some of them are trapper cabins, temporary camp sites, and seasonal residences. The proponent should indicate the numbers of trapper cabins, camps sites, seasonal and permanent residences which were assessed for this indicator. Maps should be provided indicating the location of the residences that were considered in the assessment. <p>Technical Indicators:</p> <ul style="list-style-type: none"> ▪ Maximum Embankment Height and Average Embankment Height: The proponent needs to better describe and justify the use of these two indicators which seem to take into account the same reality. Perhaps the use of one indicator taking into account both would be more appropriate. <p>Comment continues on next page.</p>	See previous page.	See previous page.	See previous page.

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
735 cont	See previous page.	<ul style="list-style-type: none"> ▪ Expansion Capacity: The expansion capacity storage indicator should assess the achievable maximum capacity to store additional tailings beyond the proposed amount for the project. The values of the indicators given for each TMF option should be in terms of additional tonnage or volume. As presented, the assessment of the expansion capacity of each TMF options is subjective and does not provide an adequate assessment. ▪ Site Preparation: The description and justification for the inclusion of this indicator are weak and need to be better described. What does site preparation mean and include? The proponent should describe the level of complexity that is referred to. Is the complexity only related to construction of haul roads and runoff collection systems? These particular works (roads and ditches) are usually not complex. What is the basis upon which the qualitative measures were assigned to each TMF option? ▪ Pumping Requirements: The description of this indicator is too vague. This indicator should also describe the number of pumps needed and other characteristics related to the pumping system that will be required for each TMF option. ▪ Ease of Operation during Start-up: The description of this indicator is weak and vague. Details on how this indicator was evaluated for each of the TMF options need to be provided. ▪ Final Embankment Volume: The description of this indicator is weak and vague. Details on how this indicator was evaluated for each of the TMF options need to be provided. ▪ Geotechnical Conditions: The assessment of the geotechnical conditions is weak, vague and too general. Descriptions should be more specific and provide more details for each of the TMF options. For instance, description of competent and non-competent bedrock should be provided with their respective importance in term of length or percentage. ▪ Land Area and Title Holders: The assessment of this indicator is the same for all six TMF options. As previously indicated, indicators that do not contribute to differentiate alternatives should not be included in the analysis as per EC's Guidelines (section 2.5). ▪ TMF Catchment Area: The description of this indicator is weak and needs further consideration. Maps should be provided showing those areas. ▪ Ease of Water Management Including Polishing Pond: The description of this indicator is weak and needs better description and justification on how the qualitative measures were determined. ▪ Ease of Seepage Management: The description of this indicator is weak and needs better description and justification on how the qualitative measures were determined. ▪ Monitoring and Maintenance Requirements: The description of this indicator is weak and needs better description and justification on how the qualitative measures were determined. ▪ Consequence of Operational Error: The description of this indicator is weak and needs better description and justification on how the qualitative measures were determined. In addition this indicator should not be included as technical but rather in the socio-economic account. ▪ Ease of Decommissioning and Closure: The description of this indicator is weak and needs better description and justification on how the qualitative measures were determined. ▪ Post Closure Landform Stability: The description of this indicator is weak and needs better description and justification on how the qualitative measures were determined. <p>Economic Indicators: The economic account includes several indicators for which no detailed costs have been provided. Details of cost estimates must be provided as well as the cost for the fish habitat compensation plan to offset the loss of fish habitat resulting from the deposit of tailings in waters frequented by fish.</p> <p>EC requests that the proponent provide justification for the scoring of each indicator considered in the analysis.</p>	See previous page.	See previous page.	See previous page.

#	Agency / Organization	Comment	Response	Changes to the EIS / Draft EA Report	Change Location
736	Environment Canada	<p>Chapter 5, Appendix U3</p> <p>The report states: "During the operations phase of the Project, ore will be fed to the mill at an average rate of approximately 55,000 tonnes per day";</p> <p>"The mine life is expected to be approximately 15 years";</p> <p>"The initial evaluation recommended in-process thickened tailings (50% solids content) and it is carried forward for the options assessment."</p> <p>Given this, the total ore to be processed is calculated around 300 Mt and the tailings generation is approximately 600 Mt. However, the proponent states in Appendix U3 that "Tailings will be managed in the tailings management facility (TMF). The TMF will need to store approximately 300 million tonnes of tailings, based on current reserves".</p> <p>EC requests that the proponent provide a projection of the tailings generation over the project life (by year), including storage of TMF, water content of tailings in the TMF and height of embankments/dams, and verify the TMF footprint as well.</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a
737	Environment Canada	<p>Table 4.1, Appendix U3</p> <p>"Consequences of Operational Error" indicator currently under the Technical account is more relevant to the Environmental Account.</p> <p>It is recommended that "Consequences of Operational Error" sub-account be moved to the Environmental Account.</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a
738	Environment Canada	<p>Table 4.1, Appendix U3</p> <p>The size of TMF foot print is a common concern of the public.</p> <p>It is recommended that TMF foot print be added under the Socio-economics account.</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a
739	Environment Canada	<p>Table 4.3 Tailings Management Facility Alternatives Assessment Summary of Indicator Values in Appendix U3</p> <p>The number assigned to "total catchment area" under the Environmental account and the Technical account is the footprint area as described in Section 3.2 Summary of TMF Options.</p> <p>EC requests that the proponent verify the value assigned for "total catchment area".</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a
740	Environment Canada	<p>Table 4.3 Tailings Management Facility Alternatives Assessment Summary of Indicator Values in Appendix U3</p> <p>In Table 4.3, brief descriptions are provided for:</p> <ol style="list-style-type: none"> 1. "Requirement for Surface Water Realignment", Environmental account 2. "Loss of Fish Bearing Water", Environmental account 3. "Recreation Access", Socio-Economic account 4. "Expansion Capacity", Technical account 5. "Geotechnical Conditions", Technical account <p>However, the information provided is not sufficient to score the impacts following the Indicator Value Scales listed in Table 4.4.</p> <p>EC requests that the proponent provide additional qualitative information for each of the six alternatives with respect to the five indicators mentioned to the left.</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a

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741	Environment Canada	<p>Table 4.4 Tailings Management Facility Alternatives Assessment Summary of Indicator Value Scales, Appendix U3</p> <p>The "Reclaim Pumping Requirements" (in meters of water head) are all below "0" in Table 4.3 while the value scale provided for this indicator in Table 4.4 are:</p> <p>6 (Best) Less than 5 km 5 Between 5 and 8 km 4 Between 8 and 11 km 3 Between 11 and 14 km 2 Between 14 and 17 km 1 (Worst) Greater than 17 km</p> <p>It is recommended that the proponent revise the scale for "Reclaim Pumping Requirements" so that it is suitable for the project scenario.</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a
742	Environment Canada	<p>Table 4.3, Table 4.4, Table 4.5 in Appendix U3</p> <p>Errors are found on scores assigned to indicators (Table 4.5) following the scales listed in Table 4.3 and Table 4.4.</p> <p>Account Indicator Option Table 4.5 Correction</p> <p>Environmental Total catchment area TMF1B 2 3 Environmental Adjacent Fish Ecology TMF1B 5 2 Environmental Post-closure flow change TMF2B 2 3 Environmental Post-closure flow change TMF2C 3 2 Technical Pumping requirements TMF14A 4 5</p> <p>It is recommended that the proponent verify these scores.</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a
743	Environment Canada	<p>Appendix A- Description of Indicators of Appendix U3</p> <p>It is stated in the description of Human health (Direct Exposure) indicator: "The measurement is a receptor-based qualitative assessment considering wind direction, receptors in the path of the wind, wet versus dry beach area, location of the supernatant pond, prevailing location of spigots during operation, potential for seepage, etc.". However, the number of receptors and the distance from the receptors, i.e. proximity to existing permanent or temporary residences, are not considered.</p> <p>It is recommended that the proponent factor in the "proximity to existing permanent or temporary residences" and re-evaluate the scores for this indicator.</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a
744	Environment Canada	<p>Appendix A- Description of Indicators of Appendix U3</p> <p>It is stated that the Visibility and Aesthetics indicator "considered such items as height, shape, and contrast with the surrounding terrain". "Proximity to existing permanent or temporary residences" would be a factor that affects the impact on the visibility while it is not included.</p> <p>It is recommended that the proponent factor in the "proximity to existing permanent or temporary residences" and re-evaluate the scores for this indicator.</p>	IAMGOLD understands that as part of the MMER Schedule II regulatory amendment process, a standalone document is requested that addresses Environment Canada's comments. As noted in the response to Comment #703 it is IAMGOLD's intention to fully address and update the Assessment of Alternatives for Mine Waste disposal in a timely manner.	None.	n/a

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745	Environment Canada	<p>Appendix E, Cote Gold Project Geochemical Characterization Report, December 2013, Mine Rock Characterization</p> <p>It appears that the proponent ran 14 humidity cell tests on composite rock core samples from only 4 mine rock units (Tonalite, Magma Mixing Breccia, Diorite and Diorite Breccia). The other rock units such as quartz diorite and mafic dykes do not appear to have been run for humidity cell tests. So the humidity cell test results may not be representative of the entire mine rock mass.</p> <p>EC requests that the proponent explain the rationale for not including mine rock samples from quartz diorite and mafic dykes in the humidity cell tests.</p>	<p>Average humidity cell loading rates were provided for the following lithologies: tonalite, magma mixing breccia, diorite and diorite breccia. These loading rates are based on the 14 humidity cell tests. The vast majority of the rock is as follows: tonalite (64%), diorite (20%), and diorite breccia (7.9%). Magma mixing breccia (1.1%) is a minor rock type but a humidity cell was completed on this lithology. The remaining 7% of the mine rock distribution is comprised of the following "other" lithologies: diorite mega breccia (1.5%), mafic dykes (1.5%), quartz diorite (1.4%), diabase (0.7%), intrusive feldspar porphyry (0.5%), intrusive mafic lamprophyre (0.3%), fault (0.2%), intermediate and felsic dykes (0.2%), fault breccia (0.1%), quartz carbonate heterolithic breccia (0.1%), quartz sericite schist (0.04%), mafic breccia (0.03%) and hydrothermal breccia (0.01%). The four rock types tested (Tonalite, Magma Mixing Breccia, Diorite and Diorite Breccia) represent approximately 93% of the mine rock volume. The quartz diorite and mafic dyke units represent approximately 1.4% and 1.5% of the rock volume, respectively. Geochemical plots, including percent cumulative plots of NPR, Carbonate NPR, and various elements, can be found in Appendix E for all lithologies.</p> <p>The "other" rock types, including quartz diorite and mafic dyke units, are characterized by low sulphide and high neutralization potential values with only one sample of mafic dyke reporting an NPR <2 (Appendix E, Tables 7-5 and 7-6, Graphics 7-8 and 7-9). The elemental and short-term leachate concentrations of the "other" rock types also fall within the general range of geochemical characteristics exhibited by the major rock types (Appendix E, Tables 7-9 through 7-12). Because the geochemistry of the "other" lithologies is not notably different than that of all the major rock types, the data from all 14 humidity cells was used to calculate loading rates for the "other" rock types. As discussed above, this is a reasonable (conservative to at worst a realistic) assumption given that: i) the "other" rock types are a relatively small percentage of the overall mine rock, and ii) any geochemical differences between the "other" rock types and the major rock types is not significant. Therefore, the "other" rock types are predicted to contribute a small percentage of the overall mass load via drainage from the mine rock, and have limited to negligible influence on surface water quality.</p>	None.	n/a
746	Environment Canada	<p>Appendix E, Cote Gold Project Geochemical Characterization Report, December 2013</p> <p>The proponent has carried out field cell tests on selected mine rock samples. It appears that the results of the leachate analyses are not complete at the time of the submission of the report since limited data is presented on the characteristics of the leachate.</p> <p>Five elements were below detectable concentrations for all three sampling events for all cells.</p> <p>EC requests that the proponent provide detailed analysis of the field cell test leachate analyses in order to better understand the trends in the leachability of detectable elements under site-specific weathering conditions.</p>	Data from this 2014 monitoring will be compiled and analysed with the results provided as part of the regular updating of the geochemical monitoring for the Project.	None.	n/a

Abbreviations and Acronyms
(Applies to Response column only)

AAQC	Ambient Air Quality Criteria
AETE	Aquatic Effects Technology Evaluation
AMEC	AMEC Environment & Infrastructure, a division of AMEC Americas Ltd.
ARD	Acid Rock Drainage
ATSDR	Agency for Toxic Substances and Disease Registry
BMA	Bear Management Area
CCME	Canadian Council of Ministers of the Environment
CEA Agency	Canadian Environmental Assessment Agency
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWQG	Canadian Water Quality Guideline
DFO	Fisheries and Oceans Canada

EA	Environmental Assessment
ECA	Environmental Compliance Approval
EEM	Environmental Effects Monitoring
EIS	Environmental Impact Statement
Golder	Golder Associates Ltd.
HEHRA	Human and Ecological Health Risk Assessment
IAMGOLD	IAMGOLD Corporation
MDL	Method Detection Limit
MEND	Mine Environment Neutral Drainage Program
Minnow	Minnow Environmental Inc.
MMER	Metal Mining Effluent Regulations
MNR	Ministry of Natural Resources and Forestry
MOECC	Ministry of the Environment and Climate Change
MRA	Mine Rock Area
MRCA	Mattagami River Conservation Authority
MRL	Minimal Risk Level
NAPS	Nishnawbe-Aski Police Service
NPR	Neutralization Potential Ratio
O.Reg.	Ontario Regulation
PAG	Potentially Acid Generating
PM	Particulate Matter
PWQO	Provincial Water Quality Objective
RoC	Record of Consultation
SAR	Species at Risk
SCS	Site Condition Standards
SSWQO	Site Specific Water Quality Objective
TK	Traditional Knowledge
TLU	Traditional Land Use
TMF	Tailings Management Facility
ToR	Terms of Reference
TSD	Technical Support Document
TSP	Total Suspended Particulate
WERF	Water Environment Research Foundation

Units

cm	centimetres
dba	A weighted decibels
g	gram
ha	hectares
hr	hour
km	kilometres
km ²	square kilometres
L	litres
lb	pound
m	metre
m ²	square metre
m ³	cubic metres
mg	milligrams

mg	milligrams
µg	micrograms
mm	micrometres
Mt	million tonnes
MW	million watts
ng	nanograms
s	second
tpd	tonnes per day

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