

**Ministry of the Environment,
Conservation and Parks**

**Ministère de l'Environnement,
de la Protection de la nature
et des Parcs**

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July 26, 2021

Debra Sikora
Panel Chair
Marathon Joint Review Panel
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Dear Ms. Sikora:

Thank you for your letter dated April 20, 2021 requesting the participation of the Ministry of the Environment, Conservation and Parks (MECP) in the public comment period for the Marathon Palladium Project Environmental Impact Statement (EIS) Addendum and supporting documents.

MECP staff have completed a review of the EIS Addendum and associated information documents as it relates to MECP's mandate, and as requested, have considered whether the documents sufficiently address the requirements of the EIS Guidelines. Comments provided by MECP relate to the technical merit of the information, as well as the validity of the proponent's information, methodology and conclusions.

MECP staff have identified areas of the EIS Addendum that require clarification and/or additional work, which are documented in a series of eight (8) information request tables, organized by key topics, attached to this letter.

Should you have any questions regarding MECP's responses, please feel free to contact Carolyn Lee, Special Project Officer of the Environmental Assessment Branch, at <contact information removed>

Sincerely,

<Original signed by>

Kathleen O'Neill
Director
Environmental Assessment Branch

Attachments:

Table 1 – EA Process
Table 2 – Air Quality
Table 3 – Noise
Table 4 – Hydrogeology
Table 5 – Hydrology
Table 6 – Surface Water
Table 7 – Operations
Table 8 – Species at Risk

c: Dave Manol, Director (A), Northern Region, MECP

Marathon Palladium Project

MECP Information Request Table 1

Subject: Environmental Assessment Process

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
EA-1	<p>2.2.3.5 Off-Site Support Infrastructure for Mine Development and Operations, p.18</p> <p>Transport of Concentrate: The EIS will describe the loading, transport and unloading of concentrate from the mine site to the concentrate transfer station facilities. The EIS will identify the anticipated average number of truck or train trips per day (both to and from the associated facilities), and the anticipated load capacity of concentrate trucks or trains. Concentrate handling, storage and transportation measures designed to reduce or eliminate concentrate discharge to the environment will be discussed.</p>	<p>EIS Main report, Section 1.4.3, p 1.55: Final concentrates containing copper and platinum group metals will be transported off-site via road and/or rail to a smelter and refinery for subsequent metal extraction and separation.</p> <p>EIS Addendum Section 1.5.1, p 1.32: Final concentrates will be moved from the mine site to an off-site third-party facility for subsequent metal extraction and separation.</p> <p>Generation PGM Response to the Joint Review Panel's Request for Information #1 IR1-1 Alternative Means Assessment, Table B4: Concentrate Transport to Remote Processing facility Alternative Means Assessment</p>	<p>MECP commented in 2012 that the EIS should confirm how the concentrate will be shipped from the mine site, as this could change the potential environmental impacts of the Project, including the social impact to the Town of Marathon (truck traffic into town, with corresponding air and noise impacts, risk of spills transferring from truck to rail), environmental impacts (potential risk of spills in Town and into Lake Superior).</p> <p>Generation PGM indicates in its May 19, 2021 response to the Joint Review Panel's Request for Information #1 IR1-1 indicates that a detailed assessment to determine the preferred concentrate processing and delivery option has yet to be undertaken.</p>	<p>Provide details as to how concentrate will be shipped from the mine site and an assessment of potential environmental impacts.</p>

Marathon Palladium Project

MECP Information Request Table 2

Subject: Air Quality Assessment

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
AQ-1	Section 2.6 Existing Environment, p. 29; Section 2.7.2.1 Atmospheric Environment, p. 50-51	Section 3.1.1 and Section 4.4.4 of the EIS Addendum Appendix D1, and Section 6.2.1.3.1 of the EIS Addendum	For the EA impact assessment, the baseline air quality and the predicted concentrations of contaminants including cumulative impacts (predicted concentrations plus background concentrations) should be compared against applicable Ontario ambient air quality criteria (AAQC) and/or other standards and guidelines including the Canadian Ambient Air Quality Standards (CAAQS). AAQCs for some contaminants were omitted and not included in Tables 6.2.1-1, 6.2.1-2, 6.2.1-3 and 6.2.1-5 of Section 6.2.1.3 and Tables 3.1, 3.2, 3.3 and 3.5 of Section 3.1.1. In addition, it should be noted that the ministry has an updated ambient air quality criteria (AAQC) for SO ₂ : 67 ppb for 10-min averaging period, 40 ppb for 1-hour averaging period, and 4 ppb for annual averaging period.	Please include all applicable Ontario AAQC values in the tables of the documents.
AQ-2	Section 2.3.5 Spatial Boundaries, p. 22	Section 4.3 Special Receptors of Appendix D1	The report states that special receptors were identified and included in the air quality assessment. It is unclear if lands	Please clarify if the special receptors identified in the air quality assessment included lands currently or

			currently or known will be zoned for sensitive uses were included as special receptors in the assessment.	known will be zoned for sensitive uses.
AQ-3	Section 2.6 Existing Environment, p. 28	Table 4.8 of Section 4.4.7 of Appendix D1.	Table 4.8 shows that the background 1-hour SO ₂ concentration is lower than the 24-hr SO ₂ concentration. It seems it is not reasonable that the 1-hr SO ₂ is lower than 24-hr concentration. Also, the background 1-hr CO concentration is the same as 8-hr and 24-hr concentrations as shown in Table 4.8.	Please double-check the SO ₂ and CO monitoring data from the National Air Pollution Surveillance (NAPS) stations to ensure these values are correct.
AQ-4	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Section 5.2.4.1 Description of Project Operations of EIS Appendix Appendix D1.	Three open pits are proposed to be mined. The North Pit is to be mined throughout the life of the project with mining of the Central and South pits to occur at various times to supplement ore production from the North Pit as indicated in the report. Year 2 was selected as a worst-case scenario for dispersion modelling, and only one open pit operation - the North Pit was included in the modelling. The air emissions may be different if open pit operation occurs at three pits at the same time.	Provide a rationale/detail to demonstrate that selection of Year 2 with only North Pit operate is expected to produce maximum air emissions.
AQ-5	Section 2.2.3.2 Mine Development, p. 15; Section 2.7.2.1 Atmospheric Environment, p. 50-51	Section 5.2.4.5 Modelled Project Emissions Sources and Section 5.3.5.5 Model Options and Approaches of EIS Appendix Appendix D1.	The report states that using Year 2 operating data will provide a conservative estimate of air quality levels as the depth of the open pits will be less in Year 2 versus later years. For the Open Pit Source Algorithm, it assumes that the open	Provide further detail, i.e., the open pit development plan, to demonstrate that the use of 100 m depth in year 2 is reasonable.

			pit depths used in the modelling for construction and operations were 20 m and 100 m, respectively. It seems the open pit depth of 100 m in year 2 is pretty deep. Further detail, i.e. the open pit development plan, is required to demonstrate that the use of 100 m depth is reasonable.	
AQ-6	Section 2.6 Existing Environment, p. 28-29; Section 2.6.1.2 Atmospheric Environment, p. 32	Section 5.2.6.2 of the EIS Addendum Appendix D1	There are many non-industrial emissions sources within the RSA, i.e. Marathon municipal landfill, Marathon airport, and transportation, etc. The Marathon municipal landfill site is very close to the property boundary and may have impacts on the modelled air quality from the project.	Please clarify how the landfill emissions in the study area are captured in the ambient background monitoring data for this project.
AQ-7	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Section 6.2.1.6.1 of the EIS Addendum and Section 5.3.1 of the EIS Addendum Appendix D1.	Several air dispersion modelling scenarios were conducted to assess the air quality impacts of the project as indicated in the report. Emissions from Peninsula Road were included in the dispersion modelling to assess air quality impact only for special receptors, which follows Ontario Ministry of Transportation (MTO) guidance as indicated in the report.	Please include a brief description to explain the different modelling scenarios where the gridded receptors scenario included only selected CoPCs, while other scenarios included all CoPCs.
AQ-8	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Section 5.3.4 and Figures 9 and 10 of the EIS Addendum Appendix D1	The report states that receptors were placed around four bounding boxes that encompassed the emission sources, with spacings following guidance in the MECP Guideline A-11 (MECP, 2017). It seems the receptor spacing for the	Please ensure that the ministry's guidance for the receptor spacing is followed, and if not followed, provide a rationale for the receptor

			Rail Loadout didn't follow the ministry's guidance based on the information from Figures 9 and 10.	spacing approach used for Rail Loadout.
AQ-9	Section 2.6.1.2 Atmospheric Environment, p. 32; Section 2.7.2.1 Atmospheric Environment, p. 50-51	Section 5.3.5.4 of the EIS Addendum Appendix D1.	<p>The Ozone Limiting Method (OLM) was used to predict ambient NO₂ in the assessment, with seasonal, hourly varying ozone concentrations from Thunder Bay station. There are several options available for the conversion of NO_x to NO₂ in the AEROMOD, but the rationale for the choice of OLM was not provided in the report.</p> <p>The report didn't provide detail on how the seasonal, hourly varying ozone concentrations were established, i.e., based on average, 90% percentile or maximum for the specific season during 5 years. It is suggested that the use of maximum ozone concentrations for the specific season during a 5-year period would be conservative and acceptable.</p> <p>The ozone monitoring station in Thunder Bay is located in an urban area, while Marathon Project is located in a remote area of northwestern Ontario, which is expected to be a representative of rural areas as mentioned in the report. Further detail is required to</p>	<p>Provide a rationale for the selection of OLM for the conversion of NO_x to NO₂.</p> <p>Provide details on how the background ozone concentrations were established.</p> <p>Provide details to demonstrate that the use of ozone concentrations from Thunder Bay station as background concentrations in OLM is conservative and reasonable.</p> <p>Provide a rationale for the use of the default in-stack NO₂/NO_x ratio, and provide details to demonstrate that the use of a single in-stack ratio for all site sources is reasonable.</p>

			<p>demonstrate that the use of ozone concentrations from Thunder Bay station as background concentrations in OLM is conservative and reasonable consider possible discrepancy in ozone concentrations between these two sites for this case.</p> <p>It seems the default in-stack NO₂/NO_x ratio of 0.1 in AERMOD was used in the dispersion modelling based on the information from the report. A rationale for using this default in-stack NO₂/NO_x ratio should be provided if this is the case since an in-stack NO₂/NO_x ratio of 0.50 is recommended for all project sources by US EPA if no stack testing data are available. Also, further detail is required to demonstrate that the use of a single in-stack ratio for all site sources is reasonable.</p>	
AQ-10	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Section 5.3.5.5 (page 5.45) and Section 6.0 of the EIS Addendum Appendix D1 and Section 6.1 of EIS Addendum (pages 6.43-6.46)	Modelling of TSP, PM ₁₀ and PM _{2.5} was carried out for two scenarios. One dispersion modelling was conducted for O. Reg 419/05 compliance assessment, and PM emissions from haul roads and stockpile wind erosion were excluded from modelling. Another scenario included all PM emission sources in the dispersion modelling, which is usually required for an environmental assessment	<p>The predicted PM (TSP, PM₁₀ and PM_{2.5}) concentrations for the EA scenario should be discussed in the EIS and compared with the applicable Ontario Ambient Air Quality Criteria (AAQC).</p> <p>Also, the predicted PM concentrations under the</p>

			<p>(EA). The modelled results of TSP, PM₁₀ and PM_{2.5} for these two scenarios were presented in Tables 6.1, 6.2, 6.3 and 6.4 of Appendix D1. However, Section 6.2.1 of the EIS Addendum and Section 6.0 of Appendix D1 only discussed the predicted results of TSP, PM₁₀ and PM_{2.5} from the project based on the compliance assessment scenario instead of the EA scenario. Also, the predicted PM concentration contour plots shown in the EIS addendum were based on the compliance scenario, and the predicted PM concentrations for the compliance assessment scenario were used in the Human Health and Risk Assessment (HHRA).</p>	<p>EA scenario should be presented graphically (contour plots) to understand the geographic extent of the impacts from the Project.</p> <p>Frequency analysis should also be conducted and presented in Table and graphically if exceedances are expected based on the modelled results including cumulative effects.</p> <p>The predicted PM concentrations for the EA scenario should be carried forward to the HHRA to facilitate the understanding of the potential effects of PM₁₀ and PM_{2.5} under a reasonable worst-case scenario.</p>
AQ-11	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Section 5.3.5.5 of the EIS Addendum Appendix D1	<p>For the modelling scenario including emissions from vehicle traffic on Peninsula Road, in addition to the maximum impacts at the closest receptors along the public road as presented in the Air Quality Effects Assessment Report, are there any intersections, railway or potential future traffic lights that may result in queuing of trucks and thus resulting idling emissions at the most impacted receptors?</p>	<p>Provide information on whether there are any intersections, railway or potential future traffic lights that may result in idling emissions for the possible receptors.</p>

AQ-12	Section 2.8.3 Monitoring and Follow-up Programs, p. 74	Table 7.3-1 of Chapter 7 Environmental Management.	The report states that measurement of ambient levels of particulates, criteria air contaminants, and other parameters of potential concern will be conducted at identified air quality monitoring locations. It seems only TSP and dustfall will be monitored based on the information from the report. As a minimum, TSP including metals, PM ₁₀ , PM _{2.5} , crystalline silica in PM ₁₀ , and dustfall should be included in the follow-up air monitoring program. Measurement of NO ₂ may also need to be included in the air monitoring program. It is recommended that the ministry be consulted early in the development of a monitoring program.	In addition to TSP and dustfall, please also add metals in TSP, PM ₁₀ , PM _{2.5} , crystalline silica and also possible NO ₂ into the follow-up monitoring commitment.
AQ-13	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Appendix D1 Air Quality Updated Effect Assessment Mar 21 2021, Appendix C and D, Page 201 - 306	The majority of the emission estimates were based on USEPA AP-42 Emissions Factors with stated data quality ratings 'A' to 'D'. However, data quality ratings were not provided for all emission estimate calculations. For assessment purposes, data quality ratings should be provided for all estimates.	The proponent is to ensure all data quality ratings are provided with their emission estimate calculations.
AQ-14	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Appendix D1 Air Quality Updated Effect Assessment Mar 21 2021, Appendices C and D, Page 201-306	Emission factor and emission estimate calculations were not provided. In some cases, the reviewer could not duplicate the proponent's calculations resulting in different emission estimates.	The proponent is to ensure sample calculations are provided for emission factors and estimate calculations for both

			Sample calculations are required for review/verification.	construction and operational phases.
AQ-15	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Appendix D1 Air Quality Updated Effect Assessment Mar 21 2021, Appendix C(Pages 225-230) and Appendix D(Pages 297-300)	For paved road emission estimate calculations, the proponent should provide a rationale for using silt loading of 0.0505 g/m ³ and detail how this was determined using USEPA13.2.1.	The proponent should provide a rationale for silt loading assumption for paved road emission estimates.
AQ-16	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Appendix D1 Air Quality Updated Effect Assessment Mar 21 2021, Appendix D, Page 273	Baghouse exhaust flow rate for Assay Lab Baghouse is stated as 20000CFM on page 243 and 16000CFM on page 273.	The proponent is to ensure correct baghouse flow rates are used for emission estimate calculations.
AQ-17	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Appendix D1 Air Quality Updated Effect Assessment Mar 21 2021, Appendix D, page 283	Control efficiency at blasting was identified as 25%. However, the calculated emission rate does not reflect any control.	Please clarify control efficiency assumption, if any.
AQ-18	Section 2.7.2.1 Atmospheric Environment, p. 50-51	Appendix D1 Air Quality Updated Effect Assessment Mar 21 2021, Appendix D(pages 292-296)	For emission estimates on unpaved Haul Road dust, the proponent used Npi-MiningV.3 emission factors. More details are required to support the calculation technique and rationale why USEPA AP-42 Ch 13.2.2 emission estimating technique was not used.	Provide more documentation on chosen emission factor technique to support calculations.

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MECP Information Request Table 3

Subject: Noise

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
NOISE-1	EIS guideline section 2.7.2.2 & 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Appendix C: Noise Source Summary Table	The haul route trucks are a dominant noise source therefore noise emissions should be verified	Provide mfg. spec sheet including exterior sound power level for RS2, RS5 Mining Haul Trucks measured in accordance with ISO 6395:2008 or equivalent
NOISE-2	EIS guideline section 2.7.2.2 & 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 5.2 Noise Modeling, pdf page 20	Terrain data has a significant effect on modeled noise predictions	Provide the terrain metadata used in the noise model and discuss what the effects are on modelled noise predictions
NOISE-3	EIS guideline section 2.7.2.2 & 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Appendix C, Noise Modeling, pdf page 87	Eight building exhaust fans on east side, with each 97 dBA, collectively equals 106 dBA therefore is significant. Thirteen building exhaust fans on the west side, collectively equals 108 dBA, therefore is significant	Provide an assessment of the combined noise effects of the 22 building exhaust fans and description of the significance of noise impacts relative to the noise guidelines.
NOISE-4	EIS guideline section 2.7.2.2 & 2.7.3.2	EIS Addendum D1, Air Quality Addendum, Section 5.2.4.1	Air Quality Addendum section 5.2.4.1 mentions 1.4 km long conveyor to transport ore, but this is	Quantify the noise effects of the 1.4 km long conveyor and assess whether these effects are significant.

			not mentioned in Acoustics Addendum.	
NOISE-5	EIS guideline section 2.7.2.2 & 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 6.3.1	Rail load out facility is very close to noise sensitive receptors	Provide information on how and when materials will be loaded from trucks to railcars at the rail load out area and assess the potential noise emissions and their significance relative to the noise guidelines.
NOISE-6	EIS guideline section 2.7.2.2 & 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Appendix D Traffic	Rail load out facility is very close to noise sensitive receptors. Traffic data shows 10 truck passbys 7am to 8am to rail load-out	Indicate if there will there be idling transport trucks at the rail load-out facility
NOISE-7	EIS guideline section 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 5.7.2	Statements in the report should be consistent with Health Canada noise guideline wording	Correct statement regarding transmission loss of 15 dB for windows
NOISE-8	EIS guideline section 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 6.5.1.1, 6.5.1.2, 6.5.1.3, 6.5.1.4	Statements in the report should be consistent with Health Canada noise guideline labelling	Correct labelling of Ldn to L _{Rdn}
NOISE-9	EIS guideline section 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 6.5.1.1, 6.5.1.2, 6.5.1.3, 6.5.1.4	Audible blasting noise should be added to the project noise to get %HA health effect. Health Canada recommends following ISO 1996-1 when blasting occurs for more than 1 year.	Provide information on the number of blasts per day, blasts per month, are expected during construction and operational phases?
NOISE-10	EIS guideline section 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 5.7	Health Canada Environmental Noise	Provide information describing impacts of any effects (rattling indoors)

			Guideline 2017, checklist item 36	when air blast noise is emitted from blasting as per the Health Canada document
NOISE-11	EIS guideline section 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 6.5	Health Canada Environmental Noise Guideline 2017, checklist item 30	Describe if the project will result in significantly increased railway traffic and freight train idling during shunt operations on CP Rail mainline. Indicate where locomotives will idle.
NOISE-12	EIS guideline section 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 6.5	Health Canada Environmental Noise Guideline 2017, checklist item 30	Clarify if freight train stretching impulsive noise was assessed after project railcars are coupled to the main freight train.
NOISE-13	EIS guideline section 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 6.5	Health Canada Environmental Noise Guideline 2017, checklist item 30	Discuss whether the project will result in significantly increased air traffic.
NOISE-14	EIS guideline section 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 5.7.1	Health Canada Environmental Noise Guideline 2017, checklist item 30	Indicate if there will be a noise complaints resolution plan
NOISE-15	EIS guideline section 2.7.3.2	EIS Addendum D2, Noise Effects April 2021, Section 5.7	Health Canada Environmental Noise Guideline 2017, Appendix B1	Please complete and include the Health Canada Noise Impacts in EA checklist

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MECP Information Request Table 4

Subject: Groundwater/Hydrogeology

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
GW-01	2.4.3.1 Assessment of Alternatives for Mine Waste Disposal	Volume 1 of 2, Chapter 3 - Project Alternatives, Section 3.2.4.2.2	In the discussion of alternatives for the PSMF, it is not clear if water cover is being proposed, or how a water cover will be maintained. It is noted that the option chosen appears to be a hybrid of Options 2 and 3 and will include deposition of Type 2 rock in the PSMF during the first 7 years of operation. Depending on the progression of water cover/saturated tailings, this could result in exposed Type 2 rock for an unknown period of time, which could result in acid drainage and/or metal leaching.	Please provide more information regarding the timeline for rock deposited in the PSMF to be covered by saturated tailings (i.e. will the water level in the PSMF always be maintained at an elevation higher than the Type 2 material, or will there be a period where the Type 2 material will not be submerged/ saturated?). Please provide an explanation of how the deposit of Type 2 waste rock in the PSMF might impact seepage quality.
GW-02	2.4.3.1 Assessment of Alternatives for Mine Waste Disposal	Volume 1 of 2, Chapter 3 - Project Alternatives, Section 3.2.4.2.2 Volume 1 of 2, Chapter 3 – Project Alternatives, Section 3.2.4.3	Mining will result in the production of considerable quantities of PAG (Type 2) waste rock and process solids. The preferred alternative for prevention of Acid Drainage and Metal Leaching has been identified as maintaining Type 2 material in a saturated condition, which includes depositing Type 2 waste rock into the pits upon closure, submerging the material as the pits flood. Given the extended period required	Please provide additional information regarding how long upon closure Type 2 rock in either the pits or the PSMF will remain uncovered (by water). Please provide details on rock elevations versus water elevations and timelines for pit filling. Please provide discussion on how prolonged exposure of Type 2 material has been assessed in the EIS, and provide

			to flood the pit, this will likely result in a period of time where the Type 2 waste rock is not submerged.	details on how this has been accounted for in estimating water quality effects.
GW-03	2.4.3.1 Assessment of Alternatives for Mine Waste Disposal	Volume 1 of 2, Chapter 3 – Project Alternatives, Section 3.2.4.2.3	Given the Type 2 process solids will be produced, it seems that some of the ore is likely to be Type 2 material, and could therefore have the potential to be acid generating while in the temporary ore storage. Potential impacts from this and how it might be managed was not clearly defined in the EIS.	Please provide discussion of the potential for ARD/MLD from the temporary stockpile, including whether it needs to be quantified, and how it can/will be managed/monitored.
GW-04	2.4.3.1 Assessment of Alternatives for Mine Waste Disposal	Volume 1 of 2, Chapter 3 – Project Alternatives, Section 3.2.4.2.3	One of the principals of managing Type 2 rock at the site is separation of Type 1 from Type 2 rock at the source. As such, systems to assess, confirm, account and track the rock types will be critical for success.	Please provide discussion of how Type 1 and 2 rock will be assessed at the source, and what measures will be in place to ensure that segregation is being carried out correctly. Include discussion of any management/ accounting/ tracking measures that will be used to ensure that the management of Type 2 rock is being carried out in accordance with the environmental management plan.
GW-05	2.4.3.1 Assessment of Alternatives for Mine Waste Disposal	Volume 1 of 2, Chapter 3 – Project Alternatives, Section 3.2.4.3	It is indicated that Type 2 tailings will be deposited in the central pit in the last 3 years of mine operation. There is insufficient discussion of how these tailings will be managed with respect to maintaining saturations, and how they have been considered in the	Please provide discussion explaining if Type 2 tailings will remain saturated upon deposit, or will they drain upon initial deposit, and then re-saturate as water levels in the pits recover after mining is complete. If the second, then please provide an estimate of how long

			EIS with respect to water quality impacts.	until saturation. Please provide an explanation of the impacts if the tailings become unsaturated.
GW-06	2.6.1.4 Water Quality and Quantity	Volume 1 of 2, Chapter 4 – Environmental Setting, Section 4.5.2	Is there any ongoing groundwater monitoring? The database for the groundwater conditions at the site is still thin, particularly with respect to baseline (1 well had groundwater levels varying >1m) for levels and quality. Site monitoring and assessment over the long term will likely depend on comparisons to baseline to provide early warnings for groundwater impacts – as such, a robust data set is required. To ensure this, the proponent should be sampling seasonally on an ongoing basis.	Please provide an outline of ongoing groundwater monitoring programs at the site intended to further the baseline database, with a focus on how baseline data can be used for assessment during operations and closure.
GW-07	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.1.1	Discussion of potential impacts to groundwater quantities identified that pit dewatering will cause a lower water table and changes to groundwater flow patterns. This is expected to be limited to the groundwater flow systems under the mine and to the local watershed, in which no groundwater users are located. However, with the changes to the water table and the local watershed, changes to the baseflow to local surface water features could be anticipated, but this was not noted or discussed in this section of the EIS.	Please provide discussion of impacts to baseflow and how this may impact local surface water features.

GW-08	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.1.1	There is no discussion of groundwater quality impacts due to seepage from the MRSA and the PSMF, including whether the groundwater users along the highway could potentially be impacted by seepage from the PSMF.	Please provide discussion of the discharge of seepage to surface water features, particularly to Pic River, as well as the potential for seepage from the PSMF to impact water supply wells located along the highway.
GW-09	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.1.1, Table 6.2.3.1.2	The conclusion of no adverse effect is based solely on there being no impacts to nearby well users, even though seepage to surface water is identified as an impact.	Discussion should be provided regarding the severity of impacts to surface water features.
GW-10	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.1	O. Reg. 153/04 is not generally applicable to this site (this is not a change to a more sensitive land use, nor is it a contaminated site or brownfield). Given that the site is actually a source of discharge, assessment should be based on the ministry's Policy B-7, Reasonable Use (which has been properly referenced). The excess soils regulation (O. Reg. 406/19) may be relevant if soil is to be removed from site, and any soil managed on site must be handled and stored in accordance with the Soil Rules referenced in this Regulation.	The context for reference to O. Reg. 153/04 should be clarified, and the use of MECP's Reasonable Use Policy for the assessment of potential impacts at the site boundary as the principal assessment policy should be made clear. Please provide discussion regarding the relevance of O. Reg. 406/19.
GW-11	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of	<i>Magnitude, Groundwater Quantity</i> <ul style="list-style-type: none"> ▪ The magnitudes chosen to define changes as low, 	<i>Magnitude, Groundwater Quantity</i>

		<p>Potential Impacts, Chapter 6.2.3 Section 6.2.3.3.5, Table 6.2.3-2</p> <p>Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.3.6</p>	<p>moderate or severe are not explained. For example, why is less than 1m considered a low effect, 1m to 5m considered a moderate effect, etc? An induced change of 5m in groundwater elevation, given that natural groundwater fluctuations at the site averaged less than 1.5m, seems very high.</p> <p><i>Magnitude, Groundwater Quality</i></p> <ul style="list-style-type: none"> ▪ Under the classification for “High”, the impacts are qualified as being applied to impairment of a water supply well, but there is no indication if this is applicable to existing or potential future uses, nor is there reference to the geographical extent of the impacts. Impairment to groundwater is typically assessed as impacts to the reasonable use at the property boundary, which includes potential future use. ▪ The “High” classification is limited to concerns regarding the use of groundwater for water supply, and does not note environmental/ ecological impacts, such as may occur due to discharge to a receiving surface water body. 	<p>Please provide an explanation of how the magnitudes were developed, including reference to the baseline data as it relates to natural fluctuations at the site.</p> <p><i>Magnitude, Groundwater Quality</i> Please provide discussion to qualify how the classifications apply to existing water supply versus potential development of water supply, as well as indicating how geography (e.g. On-site vs off-site) is considered. The classifications, particularly that for High, need to reflect environmental/ ecological factors as well as just supply.</p>
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GW-12	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.5, Table 6.2.3-3	Drilling and blasting to develop pits and plant site area – blasting can (but not always) impact groundwater quality as well as quantity, particularly with respect to turbidity etc.	Please provide an update for this table to note that drilling and blasting can have impacts on groundwater quality as well as quantity.
GW-13	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.5, Table 6.2.3-3	Indicates that water management through disposal of domestic waste at the PSMF won't have water quality impacts as the volume is negligible in comparison to the total PSMF. The volume of domestic waste will be approximately 35,000 m ³ , which is significant, and a WDS of this size would typically require environmental monitoring. Given that the leachate characteristics of this waste could be considerably different from tailings, especially as the leachate would be characterized by organics, this should be identified as having the potential to impact groundwater quality. Further to this, MECP's approvals branch does not encourage the development of a domestic waste disposal facility overlying a tailings management facility, in part due to the difficulties in monitoring and ensuring compliance. Thunder Bay district will provide further comment regarding the siting of the WDS.	Please provide further discussion of the potential impacts from disposal of domestic waste with consideration of the comments on waste disposal siting provided by the Thunder Bay District.
GW-14	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of	At the southern point of the PSMF, the model shows areas where the mounding effects don't reach	Please provide an explanation of these restrictions on what would

		Potential Impacts, Chapter 6.2.3 Section 6.2.3.6.1, Figures 6.2.3-4 and 6.2.3-5	beyond the PSMF itself (these effects are also seen in other areas, such as midway along the southwest side of the PSMF, and a couple of spots on the northwest side). This would seem contrary to the anticipated mounding effects and the hydrogeology of the site.	be anticipated to be the effects of groundwater mounding.
GW-15	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.6.1, Figures 6.2.3-4 and 6.2.3-5	Discussion of the groundwater model does not indicate how the wells located along Hwy 17 were considered. MECP's understanding is that some of these wells serve commercial operations including restaurant(s) and hotel(s). As such, these wells may have significant capture zones, which raises the possibility of drawing seepage from the PSMF.	Please provide an explanation of how the model(s) consider the effects of pumping from the wells located along the Hwy in proximity to the project.
GW-16	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.6.3 Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.6.4	This section indicates that if runoff from the MRSA or excess water from the PSMF does not meet discharge criteria, it will be directed to the open pits. However, there is no discussion on whether this water will be treated prior to discharge to the open pits, nor how the quality of this water might impact the quality of the pit lakes once the pits are full. This is a significant factor, as it is understood that once full, the intent is that the pit lakes will overflow and discharge naturally without	Please provide discussion of whether excess water discharged to the open pits will be treated, and how the quality of the water being discharged to the open pits will affect final pit water quality. This should include discussion of what will be done if final pit water quality is not suitable for discharge to the natural environment.

			treatment to the natural environment. (pg 6.146)	
GW-17	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.6.4	Pg 6.155 (and others) – In discussing discharges to Hare Lake, it is unclear if this includes seepage losses from the PSMF. Further to that, although seepage collection systems are referenced in other sections of the EIS, they are not discussed in detail, and are not noted in this section of the EIS. It is difficult to understand how seepage losses from the PSMF are being managed.	Please provide a more detailed discussion of seepage losses from the PSMF, including how seepage losses have been managed and how they will impact on groundwater quality beyond the PSMF. This should include consideration of seepage discharges to surface water features, and the potential for seepage discharges beyond the property boundaries.
GW-18	2.7.2.3 Water Quality and Quantity	Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.2.3 Section 6.2.3.6.4	The EIS does not include much discussion of contingencies for various aspects of the project. With respect to groundwater, predictions have been made for water quality discharging from the project elements such as the MRSA and the PSMF, with reference to how this compares to standards and what it means with respect to water quality in the various receptors. There is also discussion of the environmental monitoring programs that will be implemented to measure the effects of the project. However, there is very little to no discussion regarding what can be done if predictions are exceeded (e.g., metals concentrations from Type 2 rock and tailings are higher than predicted).	Please provide discussion of contingency plans for the proposed environmental control measures for each of the project elements/facilities (i.e. MRSA, PSMF, Water Management Pond). Contingency plans should be tied to the monitoring programs for these facilities, and there should be confirmation that the proposed contingencies are feasible.

GW-19	2.7.2.3 Water Quality and Quantity	<p>Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.3, Section 6.3.2.13</p> <p>Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.3, Section 6.3.2.14</p>	<p>The EIS is presented with the general assumption that the seepage will remain within the quality and quantity as predicted. Although an adaptive management plan is referenced, the plan does not include even a general description of contingency/mitigative measures that could be employed if seepage quality and/or quantity were outside the predicted levels.</p>	<p>As noted above, discussion of a contingency plan is requested, one that clearly illustrates that impacts beyond those predicted can be successfully mitigated.</p>
GW-20	2.7.2.3 Water Quality and Quantity	<p>Volume 2 of 2, Chapter 6 – Assessment of Potential Impacts, Chapter 6.3, Section 6.3.3</p>	<p>This is not sufficient as a contingency plan with respect to groundwater impacts and management.</p>	<p>As per the above comments, discussion of an appropriately detailed contingency plan should be developed, showing that impacts beyond those predicted in the EIS can be mitigated should they occur.</p>
GW-21	2.7.2.3 Water Quality and Quantity	<p>Appendix D4 – Hydrogeology Updated Effects Assessment, Section 3.2.2</p>	<p>It is indicated in this section that the Metal and Diamond Mining Effluent Regulation (MDMER) is being used for assessment of seepage quality. This regulation is intended for assessment of point source discharges and can therefore be applied to seepage that is collected for treatment/discharge. However, for seepage that is not collected, and will present as a diffuse discharge to surface water features or at the property limits, it must be assessed with respect to the Reasonable Use Policy</p>	<p>Please provide clarification on the application of the ministry's reasonable use policy in assessing diffuse seepage discharges.</p>

GW-22	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 3.2.2	The Aquatic Protection Values (APV's) developed under O. Reg. 153/04 are intended for use only at Brownfield Sites and are not intended for use in measuring compliance at operating industrial projects. It may be possible to reference the APV's in developing suitable assessment criteria, but the APV's themselves should not be used for compliance.	Please provide acknowledgement that the APV's are not suited for assessment of compliance.
GW-23	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 5.1.1	It is unclear from the presentation of the modelling for the post-closure groundwater conditions in Figure 16 if the pit lakes are full. This could have a significant effect on groundwater flow predictions, particularly with respect to the MRSA and the direction of seepage discharge.	Please provide clarification as to whether water levels in the pit lakes have reached equilibrium in the post closure models that are presented.
GW-24	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 5.1.1	In assigning conductance to the DRAIN cells representing the pit walls, it is indicated that the conductance was based on the hydraulic conductivity of bedrock. It isn't clearly indicated, but expected that this hydraulic conductivity is based on the estimates for the insitu bedrock, some of which was done through hydraulic conductivity testing in the monitoring wells. However, it is possible that blasting could impact the hydraulic conductivity of the rock faces exposed in the pits, creating surface fracturing that is	Please provide clarification if the effects of blasting on the hydraulic conductivity of the rock in the pit walls was considered and provide discussion of how this may have impacted the modelling results.

			likely to have a higher conductivity near the rock face. (pg 5.3)	
GW-25	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 5.1.2	It appears from the text that the recharge rate through the MRSA will be 79 mm at closure, and 79 mm after revegetation. This seems quite low given the permeability of the MRSA material, was the slope considered?	Please provide an explanation of how the recharge rate was derived, and if it considers the slope of the MRSA.
GW-26	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 5.1.3	In this section, it is indicated that the PSMF has been modelled with an HDPE liner on the upstream side (represented as a no flow boundary). This prevents any toe drainage. However, there is no clear discussion provided of the construction of the PSMF dams to illustrate why this modelling technique is applicable. (pg 5.5)	Please provide details of the dam design and the modelling techniques being used to represent the dam with specific reference to the details of the design.
GW-27	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 5.1.3	The PSMF has been modelled as a river boundary. The reasoning for this was not explained.	Please provide an explanation of how modelling the PSMF as a river boundary represents the PSMF hydrogeology.
GW-28	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 5.1.4	It is understood that there are seepage collection basins tied to seepage collection ditches. It is noted that ditches are located above the water table. It is unclear how the ditches will intercept groundwater seepage, and whether they will interact with groundwater.	Please provide a clear description of how the seepage collection basins and ditches function is required, which should include modelling which illustrates how seepage will be intercepted and redirected to the seepage collection basins. This should include modelling cross sections showing how seepage

				may pass under the dams and would consequently be managed by the seepage collection system of ditches and basins.
GW-29	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 5.1.4	Similarly for the MRSA, it is not clear how seepage is being managed with respect to the seepage ditches etc.	As per the PSMF, please provide a detailed description of how seepage is managed.
GW-30	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 5.1.4	It is noted that the WMP has been modelled as a river boundary, but there is no indication if this is set up the same as the river boundary used for the PSMF.	Please provide further clarification regarding the use of the river boundary for the WMP, and how it relates to the river boundary used for the PSMF.
GW-31	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 6.1, Table 6.2	The title of this table indicates that times after end of mining are shown, but they are not. Water elevations in the pits are indicative of the time periods over which Type 2 waste rock and process solids deposited in the pits will be exposed to the atmosphere, which may influence water quality in the pits.	Please provide further information regarding the timelines related to water levels in the pits, as well as a reference to elevations that Type 2 solids and waste rock are deposited at, so that the time to these materials being submerged/ saturated will be known.
GW-32	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 6.1	There is type 2 rock going to the PSMF in year 1, but it is difficult to equate the elevations at which the rock is being deposited with the water levels in the PSMF.	Please provide information to illustrate the sequencing and how the type 2 material will be managed to reduce ARD with respect to volumes, times of deposition, depths/elevations, etc.
GW-33	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 6.1, Table 6.2	At water elevation 271, there is no indication of inflow to the south pit, even though that is the outlet elevation for this pit as well as for the central pit.	Please provide an explanation of why there is no inflow indicated to the south pit at elevation 271.

GW-34	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 6.4	Note – other reviewers have identified that key anticipated contaminants associated with the ore body, specifically palladium and platinum, have no Canadian assessment criteria	It is understood that this is being addressed by others.
GW-35	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 6.4	With respect to aluminum, it is noted that aluminum in background (baseline) exceeded the ODWQS and GCDWQ, and therefore aluminum wasn't identified as a constituent of potential concern. It would be more appropriate to assess the predicted aluminum concentrations against the background values in groundwater and surface water, including the potential for seepage to elevate the existing background concentrations.	Please provide explanation of how aluminum can be assessed in future effects monitoring, with respect to pre-development background levels. Provide discussion of a program to ensure a suitable database to establish background levels. This should also be done for any metals related to the project that do not have currently established regulatory criteria.
GW-36	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 6.4	MDMER are not appropriate criteria for assessment of contaminant concentrations in groundwater seepage. Groundwater quality should be assessed with respect to the RU policy at property boundaries and should be referenced to the PWQO's for discharge to surface water features.	Please provide discussion regarding revision of assessment criteria to reflect the use of the Reasonable Use Policy as the relevant compliance criteria. Further reference can also be made to the B-series policies for water quality management in Ontario.
GW-37	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 6.6	The outlines of a groundwater monitoring program have been provided, including an outline of proposed sampling timelines etc. It should be noted that the actual groundwater monitoring program	Please provide further details on the monitoring program including how results will be assessed and establishing trigger mechanisms for contingency measures.

			will be established through permitting related to the industrial sewage ECA and the PTTW, and specifics of the monitoring programs, including monitoring frequencies, will be established at that time. The monitoring frequencies proposed in the EIS documents will be considered but may be altered as appropriate.	
GW-38	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Section 6.6	The outline of the monitoring program is very vague. It is understood that specifics on well locations and depths may be premature, and that any program proposed at this stage of the project would likely have to be altered based on conditions that are revealed during construction and operations. However, it would have been good for the outline provided here to more clearly identify key features to be monitored, such as bedrock valleys underlying the PSMF dams, areas where there are surface water receptors in proximity to the MRSA or PSMF, seepage in the direction of the Pic River, areas where seepage from Type 2 wastes is more likely, etc. There should also be something to indicate if nested wells or bedrock wells will be considered.	Please provide more detail regarding the monitoring program, to at least identify key water management, contaminant sources and hydrogeological features that monitoring will need to focus on.

GW-39	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Appendix A, Figures, Figure 9	This figure illustrates the baseline water table – note that water elevations as high as 340m are modelled for the north pit; 280 m for the central pit; and 320 to 340m for the south pit. These are considerably higher than the elevations noted above for the pit lake (Table 6-2).	Please provide clarification regarding the water elevations shown in the model, with discussion as they relate to the pit lake elevations etc.
GW-40	2.7.2.3 Water Quality and Quantity	Appendix D4 – Hydrogeology Updated Effects Assessment, Appendix A, Figures, Figures 15 & 16	The modelling illustrations that have been provided are large scale, and do not provide any details regarding specific (and possibly critical) features of the site. Of particular interest would be the effects of seepage control measures around the MSRA and the PSMF, and details of seepage movement through/under the dams and into the seepage collection ponds. Some smaller scale figures should more clearly illustrate the effects of the seepage control measures around both the MRSA and the PSMF – illustrating how the facilities will or will not reduce seepage discharges. Illustrations showing if there is seepage “under” the control measures would be useful also. This would assist in determining how effective these measures are, how monitoring should be designed, and provide direction for contingency requirements.	Please provide more detailed illustrations of the groundwater flow at key features/ elements of the project, such as seepage control measures at the PSMF and MSRA, including seepage under/through dams, and into collection features.

GW-41	2.8.1 Environmental Management Plans	Appendix D4 – Best Available Technologies Assessment for Tailings	An independent tailings review board (ITRB) has been recommended. This is supported, and should be implemented as soon as possible to initiate review of the design of the tailings management facility	Please provide an indication of when the ITRB will be put in place.
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Marathon Palladium Project

MECP Information Request Table 5

Subject: Hydrology

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
HYDRO-1	<p>Section 2.2.3 Project Description</p> <p>Section 2.7.7 Effects of the Environment on the Project</p>	<p>Chapter 1, Section 1.5.4.8 Water Management Page 1.53</p> <p>Chapter 6, Section 6.3.2.10 Control Release of Water to Environment from the MRSA, page 6.586</p>	<p>It is standard practice to size mining components and infrastructure to contain and manage the 1 in 100-year 24-hour event. This is consistent with advice provided to other mining projects in Northern Region MECP. The 1 in 100-year 24-hour event is also consistent with aligning infrastructure design to withstand the effects of climate change.</p> <p>Water transfer to the Water Management Pond (WMP) occurs over 1 in 25-year 24-hour storm event. However, it is concerning that there is no contingency measure should the water transfer (i.e., pumping) fail or not be available.</p>	<p>It is recommended that the proponent resize the Mine Rock Storage Area (MRSA) collection ponds to contain the 1 in 100-year 24-hour event without overtopping and without the need for water transfer at the 1 in 25-year 24-hour event. All associated assumptions that rely upon the design of the collection ponds should be subsequently updated.</p> <p>To sum up, it is recommended that infrastructure be designed to contain and control larger storm events (i.e., the 1 in 100-year 24-hour event) within distinct on-site infrastructure. This is recommended so that containing larger events does not depend on water being transferred to other infrastructure components from undersized ponds.</p>
HYDRO-2	Section 2.7.2.3 Water Quality and Quantity	Chapter 6, Section 6.2.4.6.4 Changes in Water Quality, Project Pathways Page 6.213	As stated within the excerpt referenced, there is a significant departure from the original EIS (2012) with regard to the effluent components. As well, several characteristics of the discharge from the mine site have changed from the original EIS (2012) including the	It is recommended that the proponent complete and submit updated CORMIX modelling to reflect the changes to the effluent discharge which includes the change in composition, rate of effluent discharge

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
		<p>Chapter 6, Section 6.2.4 Project Residual Effects, Page 6.218</p> <p>SID 6 – Water Quality and COPC Fate Modeling</p>	<p>discharge components (i.e., discharge from MRSA and PSMF to Hare Lake), the inputs to the receiver (i.e., maximum discharge rate), and the timing window for discharge of effluent (i.e., spring freshet discharge window versus April to November discharge window).</p> <p>Due to these changes, the CORMIX mixing zone modelling is no longer representative of what is being proposed in the EIS addendum, and the modelling will need to be updated to adequately predict the potential downstream impacts of the project's effluent discharge.</p> <p>Without this updated modelling that reflects what is currently being proposed, the potential impacts of the effluent discharge have not been adequately characterized.</p>	<p>to Hare Lake, and the discharge window. The results of the CORMIX modelling should also be related to the maximum expected mixing zone length/size (i.e., when the effluent discharge is expected to meet applicable water quality standards) which will require adequate characterization of the baseline surface water quality in the receiver (i.e., 75th percentile of parameters of concern).</p> <p>In order to complete the CORMIX mixing zone modelling, the proponent should follow the guidance within Guideline B-1-5 (this will be the same guidance used when applying for an ECA). Receiving-water based effluent criteria are calculated using guideline B-1-5. This procedure is based on developing a worst-case scenario defined by a maximum effluent discharge rate at the proposed daily effluent limits, and low flows in the receiving water.</p> <p>Should this analysis show that PWQO (or background, or whichever is appropriate) concentrations are exceeded after the effluent and Hare Lake instantaneously mix, then</p>

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
				modelling is needed to assess the spatial extent of the mixing zone. The boundary of the mixing zone is where PWQOs or background concentrations are met throughout the receiver (i.e., Hare Lake), consistent with Policy B-1-5.
HYDRO-3	<p>Section 2.6.1.4 Existing Environment, Water Quality and Quantity</p> <p>Section 2.7.2.3 Water Quality and Quantity</p>	Marathon Palladium Project – Water Quality Baseline Report Update, Page 5.1, Table 5.1	Adequate characterization of the baseline surface water quality of the receiver is required in order to properly calculate the maximum expected mixing zone length/size. It is noted that minimal sampling in the receiver has been completed since 2010, and therefore the baseline surface water quality sampling frequency will need to be increased and updated to ensure that the baseline condition of the receiver is adequately characterized prior to significant site alteration.	Baseline surface water quality sampling of the receiver was not continued when the project was put on hold, resulting in an incomplete sampling record that may not be adequate for characterizing the current surface water quality baseline condition of the receiver. It is recommended that the sampling program recommence as soon as possible, and that the frequency of surface water quality sampling be increased in order to adequately characterize the current baseline condition. It is expected that recent data (at least 2 years of monthly or 3 years of quarterly data) be used to define the 75 th percentile surface water quality of the receiver. The 75 th percentile of the parameters of concern (POCs) in the receiver will be used to determine the maximum mixing zone length/size.

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
HYDRO-4	Section 2.7.2.3 Water Quality and Quantity	<p>Section 6.2.3.6.3 Change in Surface Water Quantity, page 6.140</p> <p>Appendix D3 Hydrology Effects Assessment Section 5.0 Effects Assessment Methodology, page 5.1</p>	<p>From the document “Ecological Flow Requirements to Support Fisheries in Canada”:</p> <p><i>“The probability of degradation to ecosystems sustaining fisheries increases with increasing alteration to the natural flow conditions. Thus, the assessment of alterations to the flow regime should be considered in a cumulative sense, and not only on a project-by-project basis.</i></p> <ul style="list-style-type: none"> • <i>Cumulative flow alterations <10% in amplitude of the actual (instantaneous) flow in the river relative to a “natural flow regime” have a low probability of detectable impacts to ecosystems that support commercial, recreational or Aboriginal fisheries. Such projects can be assessed with “desktop” methodologies.</i> • <i>Cumulative flow alterations < 30% of the mean annual discharge (MAD) have a heightened risk of impacts to fisheries.</i> <p><i>For cumulative water use >10% of instantaneous discharge or that results in flows < 30% of the mean annual discharge (MAD), a more rigorous level of assessment is recommended to evaluate potential impacts on ecosystem functions which support fisheries”</i></p>	<p>Based on review of the documents DFO (2013) and Richter et al. (2011), it is more appropriate to evaluate the potential effect on the stream reaches considering the instantaneous or daily flow reduction instead of the method the proponent chose; using mean annual flow (MAF) or mean monthly flow (MMF).</p> <p>It is recommended that the potential impacts to all watersheds and streams be re-evaluated utilizing a threshold of >10% flow reduction from the baseline daily or instantaneous flows.</p>

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
			<p>Richter et al. (2011) proposed a standard based on daily flows, not mean annual flows (MAFs). As shown in the excerpt below: <i>“We suggest that a high level of ecological protection will be provided when daily flow alterations are no greater than 10%.”</i></p>	
HYDRO-5	<p>Section 2.7.2.3 Water Quality and Quantity</p> <p>Section 2.7.1.5 Determination of the Significance of Residual Effects</p>	<p>Section 6.2.3.6.3 Changes in Surface Water Quality, page 6.146</p> <p>Appendix D5 Site Water Balance (Figure 16)</p> <p>Feasibility Study Section 20.2.2.3 Water Quality and Quantity page 20-9</p>	<p>It is important to note that the change to the volume of surface water discharge during closure and post closure phases depends upon the quality of the runoff (i.e., discharge quality) meeting discharge requirements. As stated by the proponent in Section 6.2.3.6.3 the flow reduction and restoration to stream 106 is discussed, <i>“The mean, peak, and low flows in Stream 6 will decrease substantially during operations as runoff from part of the watershed will be collected in the TSF as it is referred to in the EIS documents. Flows will be restored following closure as runoff from the TSF area is re-established to Stream 6.”</i></p> <p>However, the runoff from the Process Solids (Tailings) Management Facility (TMF or PSMF) area and the MRSA catch basins may not be of suitable quality for an extensive time period (and may never achieve an acceptable water quality for direct discharge without treatment).</p> <p>Therefore, the potential impacts to flow reduction in watersheds 102, 103, and 106</p>	<p>The proponent has stated that as a result of the TMF runoff discharging to the environment at closure, the MAF percent reduction in stream 106 will be less than 4% (see comment HYDRO-4 for surface water quantity impact recommendations). However, if the TMF runoff quality does not meet discharge requirements, it would not be approved to discharge directly to the environment, and therefore the flow reduction predicted during the construction/operations phase would also apply to the closure phase (i.e., 36% MAF reduction to Stream 106).</p> <p>If the runoff from the MRSA catch basins does not meet effluent discharge requirements, then it cannot be discharged directly to the environment, and the flow reductions predicted for the construction/operations phase are assumed to persist during the closure phase for stream 102 and 103 (i.e., 98% and</p>

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
			<p>may be of similar magnitude during the construction/ operations phase of the project.</p> <p>It is not clear how the potential impacts to subwatershed 101 are predicted to improve between the construction/operations phase to the closure phase. The proponent should clearly identify how the flow is returned to the subwatershed.</p>	<p>96% MAF reduction to stream 102 and 103, respectively).</p> <p>It is recommended that the proponent describe how the impact to flows in stream 101 is changed from the construction/ operations phase to the closure or post-closure phase.</p> <p>It is recommended that the proponent develop mitigation/contingency measures to apply should the water quality of the runoff from the TMF and MRSA catch basins be unsuitable for discharge to the natural environment without treatment (i.e., no direct effluent discharge allowed during post-closure).</p>
HYDRO-6	<p>Section 2.7.2.3 Water Quality and Quantity</p> <p>Section 2.7.1.5 Determination of the Significance of Residual Effects</p>	<p>Chapter 6 Section 6.2.3.6.1 Change in Groundwater Quantity, Page 6.129, Table 6.2.3-4</p> <p>Chapter 6, Closure, Page 6.146</p>	<p>The anticipated reduction in groundwater (GW) discharge to watercourses 102 and 103 at the end of mining (year 12) and post-closure is considered to be a significant reduction from baseline. Considering watershed 102, there is predicted to be a 95% decrease in GW flux to the stream at the end of mining and at post closure compared to baseline. Considering watershed 103, there is predicted to be a 90% decrease in GW flux to the stream at the end of mining and a predicted 89% decrease in GW flux to the stream at post closure compared to baseline. Therefore, it is predicted that the groundwater discharge to the streams</p>	<p>Since the proponent has stated that they will be “restoring” streams 102 and 103 to baseline conditions, more information is required to explain how this restoration will be achieved. If this is merely a flow-based restoration and the stream will most likely not return to pre-mining conditions this should be clearly explained. It is expected that there could be a considerable change in quality and temperature of the waterbodies due to significant changes to the source of the baseflow to the streams, and this impact should</p>

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			<p>will no longer be a significant contributor to the flow in streams 102 and 103 post closure.</p> <p>The change to the flows in streams 102 and 103 at the end of mining and post closure depend on the quality of runoff from the MRSA catch basins being suitable for direct discharge to these streams (this is also discussed within comment HYDRO-5). As such, the MAF is not expected to return to baseline conditions (see comment HYDRO-4 for surface water quantity impact predictions) until post closure. However, the relative contributions of groundwater and surface water to these systems is predicted to significantly change from baseline as a result of the project, and the main contribution to the flow in the streams will be primarily surface water runoff based as a result of the project; there will no longer be a significant contribution of groundwater to these streams which could ultimately change the temperature regime and ecological function of the streams.</p>	<p>be discussed by the proponent. It is recommended that all potential impacts to the streams are adequately considered, including impacts resulting from the reduction in groundwater flux to these systems and potential changes to their temperature regimes.</p> <p>It is recommended that the proponent develop mitigation/contingency measures that would be applied should the water quality from the catch basins never become suitable for discharge to the natural environment (this is also discussed in comment HYDRO-5).</p>
HYDRO-7	<p>Section 2.7.2.3 Water Quality and Quantity</p> <p>Section 2.8.3 Monitoring and Follow-up Programs</p>	<p>Chapter 6 Section 6.2.3.6.1 Change in Groundwater Quantity, page 6.126</p> <p>Appendix D4 Hydrogeology Updated Effects Assessment, Figure</p>	<p>There is minimal description with regard to the predicted impacts of open pit drawdown on the surrounding surface water features. The simulated water table drawdown at the end of operations shows drawdown contours intersecting several surface water features.</p> <p>The predicted impact to these features (and any other features that are affected by the</p>	<p>It is recommended that the surface water quantity effects assessment be updated to evaluate the estimated drawdown within surrounding surface water features as a result of project activities and include those within the drawdown contours of the open pit.</p>

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
		12, electronic page number (68/72)	<p>water table drawdown) should be evaluated. Monitoring of these features will also be required, and the monitoring program should be developed in consultation with appropriate Ministries and stakeholders.</p> <p>Contingency/mitigation plans should also be developed that will be applied should monitoring show an impact greater than what was predicted.</p>	<p>A summary of the potentially affected surface water features has been included in the list below (however other features could also be affected by the drawdown that aren't shown in the figures); the impact to these features should be discussed and evaluated by the proponent:</p> <ul style="list-style-type: none"> • Drawdown and mounding contours appear to be on either side of L3 (which could result in a change in GW Flux); • L5 is on either side of the drawdown and mounding contours; • L8 appears to intersect the 1 m drawdown contour; • Malpa Lake is in between the 5 m and 1 m drawdown contour; • Terru Lake appears to intersect to 0.5 m contour; • L4, L2 and L1 appear to intersect the 10 m drawdown contour; • L12 is in between the 50 m and 10 m contour; and • Unnamed lakes to the northwest (within subwatershed 104) are between the 1 m and the 0.5 m drawdown contour.

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
				<p>The monitoring program should also be updated to evaluate the drawdown effects on the surrounding surface water bodies. This should be done in consultation with the Ministry.</p> <p>Contingency/mitigation plans must be developed based on hydrological triggers should the monitoring program reveal an impact that was greater than what was predicted.</p>
HYDRO-8	<p>Section 2.7.2.3 Water Quality and Quantity</p> <p>Section 2.8.3 Monitoring and Follow-up Programs</p>	<p>Chapter 8 Table 8.1: Updated Table of Commitments. Commitment “Reclamation and Closure” Page. 8.20</p>	<p>Monitoring requirements during closure should also include hydrology monitoring of surface water features (i.e., quantity) to ensure that predicted impacts and the re-establishment of the affected streams (i.e., runoff to the previously affected subwatersheds) are realized. The affected channels could require longer term monitoring of flows, water levels, and/or erosion/deposition surveys to ensure that the creeks have been adequately re-established. It is a key assumption of the EIS addendum that MAFs will be restored during closure and post-closure once mining operations have ceased. However, as discussed in comment HYDRO-4, relating the flow reduction to MAFs will need to be recalculated considering the flow reduction relative to daily or instantaneous flows. Either way, it is expected that appropriate hydrometric monitoring of these features will be required during closure and post-closure to</p>	<p>It is recommended that the closure monitoring program be revised to ensure that appropriate hydrology monitoring of surface water features continues during closure and post-closure to ensure that flows and levels in the original channels have been adequately re-established and that flows return to the anticipated re-established flow. This is consistent with the key assumptions of the EIS addendum impact predictions.</p>

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
			validate assumptions included in the EIS addendum.	
HYDRO-9	<p>Section 2.7.2.3 Water Quality and Quantity</p> <p>Section 2.7.2.4 Fish and Fish Habitat</p>	<p>Appendix D3 Hydrology Effects Assessment</p> <p>Appendix D6 Fish and Fish Habitat Offsetting Plan Update</p>	There is an apparent lack of detail with regard to how potential open pit drawdown effects in the adjacent surface water features will be mitigated. It is unclear if potential drawdown effects in surface water features are being covered under a Fisheries Act Authorization (i.e., Schedule 2 or Section 34/35 approval).	<p>It is recommended that the proponent characterize the potential impact of open pit drawdown on the surface water features within the drawdown cone across the project site (as detailed in comment HYDRO-7).</p> <p>It is recommended that the proponent clarify if the potential drawdown impacts to surface water features are covered under federal approvals such as Schedule 2 of MDMER or Section 34/35 of the Fisheries Act. If drawdown effects are not covered under these approvals, a detailed explanation is required for how the potential impacts will be monitored and mitigated.</p>
HYDRO-10	Section 2.7.2.4 Fish and Fish Habitat	Appendix D6 Fish and Fish Habitat Offsetting Plan Update, Section 7.2.2.3 page 7.7	The Fisheries Offset plan details planned enhancements to spawning habitat in Hare Creek that include decreasing barriers to fish passage which would increase fish access to Hare Lake, the effluent discharge receiver. However, the benefits of increasing fish access to the effluent discharge receiver are not clear. It may be more appropriate and beneficial to local fisheries to propose fish habitat compensation outside of the anticipated project impact areas.	<p>It is suggested that the proponent discuss alternative fish habitat compensation that is outside of the areas with anticipated project effects.</p> <p>Although MECP does not have a direct role in fish habitat compensation plans, this information is important for MECP to consider when developing monitoring programs, contingency plans and mitigation measures for potential project related impacts.</p>

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HYDRO-11	<p>Section 2.7.2.3 Water Quality and Quantity</p> <p>Section 2.7.2.4 Fish and Fish Habitat</p>	Appendix D6 Fish and Fish Habitat Offsetting Plan Update, Figure 4-2, Page 4.7	Limited information is available on the fisheries offsets proposed by the proponent. Accounting of water bodies and habitat (fish bearing or not) that are to be destroyed and created should be detailed and straightforward.	More detailed information is needed to ensure that adequate programs are developed to monitor the associated impacts for potentially impacted natural water features prior to impact occurring. Detailed information is required on the proposed accounting of fish habitat creation and offsets and the destruction of habitat areas that are fish bearing or non-fish bearing. This should include a breakdown of all waterbodies that could potentially be destroyed, overprinted, or drawn down including the area of each waterbody.
HYDRO-12	<p>Section 2.7.2.3 Water Quality and Quantity</p> <p>Section 2.7.2.4 Fish and Fish Habitat</p>	Appendix D3 Hydrology Effects Assessment Section 6.2 Mitigation for Change in Surface Water Quantity Table 6.1. Page 6.3	It appears that trigger plans, and mitigation and contingency measures were not included within the EIS Addendum in relation to the hydrological effects (i.e., underestimation of flow reduction and drawdown effects on the surface water features). Appropriate trigger plans for the affected surface water features should be developed. These should also include water features that may be eliminated once a Schedule 2 or Section 34/35 approval is obtained, but will be monitored until such time when fish are removed.	<p>It is recommended that the proponent develop mitigation/contingency measures based on hydrological triggers for waterbodies that are not being eliminated once a Schedule 2 or Section 34/35 approval is obtained (or are non-fish bearing).</p> <p>The waterbodies that are being eliminated once a Schedule 2 approval is obtained should have hydrological trigger plans for the construction period, prior to fish removal.</p> <p>The waterbodies that are being eliminated/impacted once a Section 34/35 approval is obtained should be</p>

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
				<p>included in hydrologically based trigger plans to ensure that fish are removed prior to temporary effects occurring or appropriate monitoring and mitigation is undertaken.</p> <p>Although MECP does not have a direct role in fish habitat compensation plans, this information is important for MECP to consider when developing monitoring programs, contingency plans and mitigation measures for potential project related impacts.</p>
HYDRO-13	<p>Section 2.7.2.3 Water Quality and Quantity</p> <p>Section 2.7.2.4 Fish and Fish Habitat</p>	<p>Appendix D3 Hydrology Effects Assessment Section 6.3 Assessment of Hydrology Thresholds page 6.4</p>	<p>It is unclear if all potential effects to surface water features have been quantified. A visual representation of overprinted watersheds, streams, location of dams, diversion structures and the expected drawdown area should be submitted as well as which waterbodies will be eliminated once a Schedule 2 or Section 34/35 approval is obtained.</p>	<p>A new map (or maps) should be submitted that includes all of the following information:</p> <ul style="list-style-type: none"> • overprinted watersheds, • overprinted streams and waterbodies, • location of dams or diversion structures, • waterbodies potentially experiencing drawdown, • diversion structures with flow direction, and • waterbodies covered under Schedule 2 and/or Section 34/35 approvals.
HYDRO-14	<p>Section 2.7.2.3 Water Quality and Quantity</p>	<p>Appendix D6 Fish and Fish Habitat Offsetting Plan</p>	<p>It is unclear if the potential impacts to Lake 12 (L-12) have been adequately evaluated. Due to its proximity to the open pit and the MRSA it is</p>	<p>It is recommended that the proponent clarify if L-12 requires either a schedule 2 or section 34/35 approval. If not, the proponent should develop</p>

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
	Section 2.7.2.4 Fish and Fish Habitat	Update, Figure 4.3 (Page Number 4.7)	assumed that the lake will be impacted by mining activities.	appropriate triggers and associated contingency measures for the water body.
HYDRO-15	<p>Section 2.6.1.4 Existing Environment, Water Quality and Quantity</p> <p>Section 2.8.3 Monitoring and Follow-up Programs</p>	<p>Appendix D3 Hydrology Effects Assessment, Figure 2, electronic page number (55/59)</p> <p>SID 20 – Baseline Hydrologic Conditions</p>	<p>Within the Baseline Report, Figure 2 displays all of the project related Surface Water Quantity Stations. The baseline report also summarizes the hydrometric stations with the accompanying rating curves. However, this only covers stations S1, S2, S3, S4, S6, S8, S9, S10, S11, S13, and S14. On the figure, it appears that there are several more stations present, therefore the original EIS (2012) was consulted. In the original EIS (2012) it appears that there were also rating curves developed for stations S15, S22, and S41 however there is no information on these other stations present within the EIS Addendum (2021) figure or text.</p> <p>A summary of the stations with no information (or lack of updated information) is summarized below:</p> <ul style="list-style-type: none"> • S5 (Seeley Creek), • S7 (Craddock Creek), • S12 (Angler Creek), • S15 (Angler Creek), • S16 (101 subwatershed), • S17 (102 subwatershed), • S18 (103 subwatershed), • S19 (103 subwatershed), • S20 (105 subwatershed – inflow to Hare Lake), 	<p>The proponent should clarify what monitoring is proposed at each hydrometric station and include the record of past monitoring at each station within one document.</p> <p>At minimum, the proponent should include the following information regarding all hydrometric stations:</p> <ul style="list-style-type: none"> • Monitoring Parameters (i.e., water level, flow, rating curve if present, etc.), • Timeseries of the data available, • The in-situ and manual monitoring frequency of the station (i.e., 15-minute, daily, weekly, etc.), • Status of station (i.e., discontinued, relocated, stalled), • The purpose of the station (i.e., baseline, continuous monitoring, impact monitoring, etc.), • The period of record, • The installed instrumentation (i.e., data logger, staff gauge, stilling well, etc.), and

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
			<ul style="list-style-type: none"> • S21 (105 subwatershed, online pond of inflow to Hare Lake), • S22 (105 subwatershed – inflow to Hare Lake), • S23 (109 subwatershed – outlet of Shack Lake), • S24 (113 subwatershed), • S25 (110 subwatershed), • S26 (102 subwatershed), • S27 (101 subwatershed), • S28 (109 subwatershed – inflow to Shack Lake), • S29 (105 subwatershed – tributary to outflow of Hare Lake), • S30 (105 subwatershed – outflow of Hare Lake before L. Superior), • S31 (106 subwatershed – outflow of Angler Creek before L. Superior), • S32 (Pic River Upstream of the project), • S33 (105 subwatershed – inflow to Bamoos Lake), • S34 (105 subwatershed – inflow to Bamoos Lake), • S35 (105 subwatershed – inflow to Bamoos Lake), • S36 (105 subwatershed – inflow to Bamoos Lake), • S37 (105 subwatershed – inflow to Bamoos Lake from Bill Lake), 	<ul style="list-style-type: none"> • The catchment area of the station.

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
			<ul style="list-style-type: none"> • S38 (105 subwatershed – inflow to Bamoos Lake), • S39 (105 subwatershed – inflow to Bamoos Lake), • S40 (105 subwatershed – inflow to Bamoos Lake), • S41 (105 subwatershed – outflow from Bamoos Lake to Hare Lake), • Bamoos 1, • Bamoos 2, and • L- Hare. 	
HYDRO-16	Section 2.6.1.4 Existing Environment, Water Quality and Quantity	Report title “ <i>Marathon Palladium Project Environmental Hydrology Updated Baseline Report</i> ” dated November 13, 2020 Prepared by: Stantec Consulting Ltd. Section 6.1.4.2 Regional Hydrology Assessment Results page. 6.14	Seven stations were selected following a series of homogeneity tests to complete the regional hydrology assessment. As the majority of the stations are several orders of magnitude different than the onsite catchments (all of which have a drainage area of <50 km ²), there is some implicit error associated with deriving flow statistics for the onsite subwatersheds from the regional values/stations. This significant watershed size difference could lead to an overestimation in flow statistics, which in turn could then lead to a greater percent reduction in subwatershed flows since the baseline flows could be overestimated.	It is recommended that the proponent compare the regional hydrology statistics to on-site measured hydrometric data on an ongoing basis (i.e., annually). As well, it is recommended that regional low flow estimates be compared to on-site low flow measurements.
HYDRO-17	Section 2.2.3 Project Description	Appendix D5 Site water Balance, Figure 4- 9 electronic page numbers (34-39/47).	For ease of reviewing, the proponent should provide the raw water balance data to reviewers, and Figures 4 through 9 should be recreated at both the 95 th percentile storm event and the 1 in 100-year 24-hour event. This will help reviewers and the public better	It is recommended that figures 4 through 9 be recreated at the 95 th percentile event (1 in 20 wet year) and the 1 in 100 year 24-hour event precipitation to demonstrate that extreme weather events can be

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			<p>understand if the onsite infrastructure can contain the 95th percentile event and the 1 in 100 year 24-hour precipitation event</p>	<p>contained without accidental release to the natural environment from the PSMF and other onsite collection ponds. This figure should also be created for any other relevant onsite collection ponds/infrastructure.</p> <p>It is recommended that the proponent submit the data in a spreadsheet format for Tables 3 through 14 in Appendix D5.</p>
HYDRO-18	<p>Section 2.2.3 Project Description</p> <p>Section 2.7.2.3 Water Quality and Quantity</p>	<p>Appendix D5 Site Water Balance, Figure 15 (page 45/47), Figure 17 (page 47/47).</p> <p>Chapter 6 Section 6.2.3.6.1 Change in Groundwater Quantity POST CLOSURE page 6.148</p>	<p>It is not well understood how the precipitation and runoff from the MRSA watershed is travelling to stream 3 during closure (i.e., through a permeable barrier underneath the waste rock piles or primarily as runoff from the piles). During the closure stage, connectivity between connecting sections of streams 2 and 3 will be greatly reduced by the waste rock piles.</p> <p>Within chapter 6 of the EIS Addendum and during the May 26, 2021 Water Management Meeting held between the proponent and the Government Review Team, it was mentioned that during post-closure, stream 3 will be flowing underneath the MRSA. This flow path is not well understood and should be clarified by the proponent.</p>	<p>The proponent should provide further detail on the flow paths (and contributing watersheds) for stream 2 and stream 3 in the closure and post-closure phases of the project.</p>
HYDRO-19	Section 2.2.3 Project Description	Appendix D5 Site Water Balance, Section 2.6 Plant	<p>It is unclear if the Storm Water Management Pond (SWMP) will manage stormwater from the offsite aggregate pit. The proponent should</p>	<p>The proponent should clarify and discuss how they are managing</p>

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
		<p>Site Water Management page 6</p> <p>Drawing 110 "Site Water Management Layout Plan" (electronic page number 30/47)</p>	<p>ensure that stormwater from the offsite aggregate pit is either included in the design considerations of the onsite stormwater pond or is managed in an offsite pond.</p> <p>It appears that the aggregate laydown areas are included in the water balance figures but not the offsite aggregate extraction area.</p>	<p>stormwater from the offsite aggregate pit.</p>
HYDRO-20	<p>Section 2.2.3 Project Description</p> <p>Section 2.7.2.3 Water Quality and Quantity</p>	<p>Appendix D5 Site Water Balance, Section 2.2 Pipework, page 3</p> <p>Feasibility Study Section 20.5 Water Management page 20-16</p>	<p>The water taking from waterbody L-8 has not been discussed with regard to project effects on the natural environment.</p> <p>It is unclear why water levels in waterbody L-8 need to be managed. If a water taking is being proposed for the water body (i.e., L-8), more information will be required.</p>	<p>The proponent should provide more information on the water taking from waterbody L-8, including the predicted impacts.</p> <p>At minimum the proponent should provide the rationale for the water taking, the amount (i.e., daily rate) proposed to be taken, the predicted impact to the waterbody due to the water taking, proposed monitoring, and any mitigation or contingency plans that will be put in place to cease water taking should an unacceptable impact occur.</p> <p>A Permit to Take Water will be required for water takings in excess of 50,000 L/d required for the project.</p>
HYDRO-21	Section 2.7.2.3 Water Quality and Quantity	Chapter 6, Table 6.2.3-7, Page 6.158	It is assumed that the parameters identified within the referenced table will inform the monitoring plans for the operations phase of the mine. It is noted that the maximum predicted Total Dissolved Solids (TDS)	It is recommended that Total Dissolved Solids be monitored in the mine effluent and in the receiver throughout the duration of the effluent discharge.

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	Section 2.8.3 Monitoring and Follow-up Program	Appendix D11 Surface Water Quality Effects Assessment Update	<p>concentration is not present within the table. It is also unclear if TDS will be monitored in the effluent and the receiver (i.e., Hare Lake).</p> <p>The Surface Water Quality Effects Assessment assumes an end of pipe TDS concentration of 250 mg/L and that if 10:1 mixing is followed, the effluent and the ambient water will be of similar density and the effluent plume will not become negatively buoyant.</p>	<p>Although the effluent limit for TDS is not agreed upon, the following recommendation is included for the proponent to consider. It is recommended that a 10:1 mixing ratio and the buoyancy of the plume be evaluated by the proponent to determine feasibility in terms of effluent discharge. This should be included in the recalculated CORMIX modelling.</p>
HYDRO-22	Section 2.7.2.3 Water Quality and Quantity	<p>Appendix D11 Surface Water Quality Effects Assessment Update</p> <p>Letter re: Response to Comments on Marathon Palladium Project Environmental Impact Statement received from Michipicoten First Nation</p>	<p>Currently, there does not appear to be any pit lake water quality modelling included in the EIS Addendum. There is no prediction of water quality in the pit lakes once they are filled. It is unclear how the proponent will ensure that discharge from the pits (once filled) will be suitable for release to the environment.</p>	<p>The proponent should undertake pit lake water quality modelling to ensure that the pit lake water quality after the pits are filled, is suitable for release to the environment. If the water quality is modelled to not be suitable for direct discharge, the proponent should propose contingency measures such as continued water treatment until such time when the water can be released to the natural environment.</p> <p>The proponent should also develop and undertake an ongoing pit lake water quality monitoring program (within each of the pit lakes) to validate the modelled predictions and to periodically update the modelling.</p>

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
HYDRO-23	Section 2.7.2.3 Water Quality and Quantity	Appendix D3 – Section 6.3.2 Closure and Post-Closure Sub-heading “Pic River” Page 6.17	It is unclear if the environmental flow thresholds for the Pic River have been defined. If a water taking from the Pic River is being considered as part of the project, then the potential effects of this taking must be evaluated. It is also important to note that any water takings be evaluated under the worst-case scenario conditions.	<p>It is recommended that the proponent develop the environmental flow thresholds for the Pic River considering the potential water taking from this source. It is also recommended that a water taking from the Pic River be considered as part of the project since it is being considered as a contingency fresh water source.</p> <p>A Permit to Take Water will be required for water takings in excess of 50,000 L/day required for the project.</p>
HYDRO-24	Section 2.7.7 Effects of the Environment on the Project	<p>Chapter 6, Section 6.3.3 Contingency Plan Page 6.593</p> <p>Chapter 7, Section 7.0 Environmental Management</p>	Contingency measures/plans seem to be based on operational considerations but not long-term effects of the project.	<p>A summary of activities that should be discussed in this section of the EIS addendum by the proponent is included below:</p> <ul style="list-style-type: none"> • End of pit filling water quality modelling should be completed, • The potential need for continuous treatment (during closure or post-closure) should pit lake water quality (and MRSA and TMF runoff quality) never be acceptable for discharge to natural environment, • The MRSA includes water transfer in the event of a 25-year storm event; however, consideration of other

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
				contingency water management approaches should the pumps fail should be included.
HYDRO-25	Section 2.8.3 Monitoring and Follow-up Programs	Chapter 7, Table 7.3-1: Follow-up and Monitoring Programs for the Project, page 7.13	Very little information is included with regard to the surface water quantity follow up monitoring program. It is unclear if the follow up surface water quantity effects monitoring is also established to assess the potential project effects. Potential effects identified by reviewers must inform the follow up monitoring programs (i.e., reduction in daily or instantaneous flows, drawdown effects on surface water features).	It is recommended that more detail be provided on the proposed monitoring programs to ensure that the monitoring is designed to adequately assess the potential project effects (including those identified in the above IRs). Detailed monitoring programs will be required for provincial permits and approvals.
HYDRO-26	Section 2.2.3 Project Description	Generation PGM Response to JRP's Request for Information #2 prepared on June 11, 2021 – Water Treatment page 3 of 4	It is stated by the proponent in the response to IR#2 from the Joint Review Panel that “ <i>Any surplus water collected in the temporary water management ponds during this initial construction period will be treated for total suspended solids (TSS) and discharged to local subwatersheds.</i> ” If water treatment is required during construction, including the removal of TSS, an Environmental Compliance Approval will be required.	If water treatment is required during construction, a construction ECA will be required. This would include treatment of TSS and any other potential parameter(s) of concern. More information is required with regard to the receiver of the proposed construction phase effluent (i.e., location, catchment size, maximum expected discharge volume per day, expected effluent limits, etc.). Pre-submission consultation will be required for the construction and operations phase ECAs.

Marathon Palladium Project

MECP Information Request Table 6

Subject: Surface Water Quality

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
SW-1	2.6 Existing Environment Section 2.2.3 Project Description	Water Quality Baseline Report Update, November 11, 2020 Chapter 1 INTRODUCTION, Section 1.2 Project Overview, pg. 1.4 and others	Section 1.2 makes reference to drainage from the Mine Rock Storage Area (MRSA) proceeding to the Pic River (i.e. <i>“Drainage from the MRSA will be collected in a series of collection basins and treated, as necessary, to meet applicable water quality criteria prior to discharge to the Pic River.”</i>). It is understood that based on the updated project that excess runoff from the MRSA, experienced from some high flow events may proceed to the Pic River; however, under normal operations drainage from the MRSA is now proposed to be managed within the Process Solids Management Facility (PSMF), with potential treatment and eventual discharge to the proposed receiver, Hare Lake.	The proponent is to clarify the correct discharge path for MRSA drainage during mine operations.
SW-2	2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity	Water Quality Baseline Report Update, November 11, 2020, Chapter 2.0 PREVIOUS CHARACTERIZATION OF EXISTING CONDITIONS, Section	Table 2-1: Parameters Analyzed for Routine Surface Water Quality Sampling on the Project Site, lists the parameters assessed under baseline studies. It is noted that mercury is listed as a parameter under the metals category; however, it’s unclear whether this includes both total and	It is recommended that future surface water quality monitoring programs proposed for the project include total and methylmercury as parameters to be analyzed. The method detection limit for total mercury should be equal or less than applicable water quality

		2.1 Surface Water Quality Monitoring, Table 2-1, pg. 2.2	methylmercury. Based on the baseline surface water quality data collected to date, it appears that only total mercury concentrations have been analyzed. When assessing mercury levels, methylmercury, being the more bioavailable form of mercury in the environment, should be included in the suite of parameters assessed in any future surface water quality monitoring programs, where metals are being analyzed.	criteria; 0.026 µg/L for total mercury and 0.004 µg/L for methylmercury.
SW-3	2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity Section 2.6.1.5 Fish and Fish Habitat	Water Quality Baseline Report Update, November 11, 2020 Chapter 2.0 PREVIOUS CHARACTERIZATION OF EXISTING CONDITIONS, Section. 2.1 Water Quality Monitoring. Aquatic Baseline Study, Chapter 2.0 PREVIOUS CHARACTERIZATION OF EXISTING CONDITIONS, Section 2.2 Characterization of the Aquatic Environments in the Study Area, Sub-Section 2.2.10.5 Water Quality	Table 2-1: Parameters Analyzed for Routine Surface Water Quality Sampling on the Project Site, lists parameters analyzed for surface water quality sampling and divides them by parameter category; however, it does not include associated method detection limits (MDLs). It is recognized that there are multiple instances in the discussion in the report where MDLs are stated, or it's stated that specific analytes were not detected above their respective MDLs. It is important that MDLs are less than applicable water quality criteria: Provincial Water Quality Objectives (PWQO) and Canadian Water Quality Guidelines (CWQG) for the Protection of Aquatic Life, and it is beneficial to both the proponent and readers that this is clearly outlined at the beginning of the report.	The proponent is to provide an updated Table 2-1 listing all parameters analyzed, their associated MDL and applicable PWQOs/interim PWQOs and CWQGs. It is realized that MDLs for specific parameters are discussed throughout the report; however, an upfront table listing the above will confirm for the reader that appropriate MDLs have been applied.

SW-4	<p>2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity</p> <p>Section 2.6.1.5 Fish and Fish Habitat</p>	<p>Water Quality Baseline Report Update, November 11, 2020 Chapter 2.0 PREVIOUS CHARACTERIZATION OF EXISTING CONDITIONS, Tables 2-2 through to 2-13 Water Chemistry</p> <p>Aquatic Environment Baseline Report Update, Chapter 2.0 PREVIOUS CHARACTERIZATION OF EXISTING CONDITIONS, Section 2.2.10.5 Hare Lake Water Quality, pg. 2.30</p>	<p>Table 2-2 through to Table 2-13 Water Chemistry, summarize maximum and average baseline water quality data and lists applicable PWQOs. However, it does not include CWQGs where these exist or 75th percentile baseline values. The Ministry of the Environment, Conservation and Parks (MECP) recommends that 75th percentile water quality values be used to determine background concentrations for surface water features.</p>	<p>It is recommended that Tables 2-2 through to Table 2-13 of the Water Quality Baseline Report also include 75th percentile concentrations, list CWQGs, and clearly identify (e.g. highlight) which 75th percentile results are greater than criteria (PWQO and/or CWQG) in order to assess the policy status of any receivers according to MECP receiver policies. Interpretation of surface water quality baseline data should also clearly recognize whether it's concerning mean, maximum, 75th percentile, etc. values. This is also recommended when summarizing and analyzing data from any future surface water monitoring programs. Accurate baseline characterization of the proposed receiver of mine effluent, Hare Lake, especially of constituent / contaminants of potential concern, must be established prior to pursuing an Environmental Compliance Approval with the MECP.</p>
SW-5	<p>2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity</p>	<p>Water Quality Baseline Report Update, November 11, 2020 Chapter 2.0 PREVIOUS CHARACTERIZATION OF EXISTING CONDITIONS, Sections 2.2. and 2.3, including associated</p>	<p>As noted above, without CWQGs listed and MDLs being clearly identified, the assessment of water quality data becomes challenging. For example, it's been noted that the method detection limit for total mercury was 0.0001 mg/L; however, the CWQG for total mercury is 0.000026 mg/L or 0.026 µg/L, which is below the method detection limit. It is unknown whether the previous baseline</p>	<p>The proponent is to ensure that the MDL for total mercury for any future surface water monitoring programs is set at or below the CWQGs. Others have been able to achieve MDLs in surface water of total Mercury at 0.1 ng/L methylmercury at 0.02 ng/L.</p>

		subsections, pg. 2.11 and others	data is greater than the appropriate criteria for mercury.	
SW-6	2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity Section 2.6.1.5 Fish and Fish Habitat	Water Quality Baseline Report Update, November 11, 2020 Chapter 3.0 REGULATORY SETTING, pg. 3.1 Generation PGM - Response to Comments on Marathon Palladium Project Environmental Impact Statement received from Michipicoten First Nation, dated June 8, 2021	The proponent stated that: “ <i>There are no regulatory requirements, policies, nor guidance, per se, that are specifically associated with characterization of baseline surface water quality at the project site.</i> ”; however, the MECP provides guidance related to information and data required to be collected in order to characterize baseline conditions of receivers of mine effluent in preparation for applying for Environmental Compliance Approvals. The MECP’s Policy B-1-5 – <i>Deriving Receiving-Water Based, Point Source Effluent Requirements for Ontario Waters</i> , July 1994, outlines direction regarding baseline water quality/quantity, sediment and biological surveys and details how results are taken into consideration when deriving effluent requirements. The design of baseline water quality/quantity, sediment and biological monitoring programs for waters proposed to receive effluent should take into consideration these requirements. The project is also subject to the Federal Metal and Diamond Mining Effluent Regulations, as such, Environment Canada and Climate Change’s Metal Mining Technical Guidance for Environmental Effects Monitoring sets regulatory requirements for baseline sampling.	The design of future baseline surface water quality/quantity, sediment and biological monitoring programs, for waters proposed to receive effluent, needs to take into consideration requirements outlined in the MECP’s Policy B-1-5 – <i>Deriving Receiving-Water Based, Point Source Effluent Requirements for Ontario Waters</i> , July 1994 for characterizing baseline conditions of receivers of mine effluent in preparation for applying for Environmental Compliance Approvals (ECA). Environment Canada and Climate Change’s Metal Mining Technical Guidance for Environmental Effects Monitoring must also be consulted to fulfill regulatory requirements for baseline sampling. The ECA process is normally initiated through pre-submission consultation with the regional technical support section. Please indicated with whom pre-submission consultation with MECP respecting ECA water quality objectives, monitoring, etc. is underway.

			The proponent has indicated in their response to Michipicoten First Nations that pre-submission consultation with MECP respecting ECA water quality objectives, monitoring, etc. is underway, and that, pending further guidance from MECP, GenPGM will refine the site wide water balance as part of the permitting process to determine specific effluent discharge requirements.	
SW-7	2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity	Water Quality Baseline Report Update, November 11, 2020 Chapter 5.0 METHODOLOGY, <i>Table 5-1: Surface Water Quality Samples Summarized by Subwatershed, Station and Year</i>	Table 5-1 provides a summary of surface water quality sampling stations for which long-term water quality data is available. It becomes challenging to determine, using available maps (e.g. <i>Figure 4.5-3 Local Watersheds and Surface Water Quality Stations, EIS Addendum, Chapter 4 Environmental Setting</i>), the location of these sampling stations and objectives/purpose for their selections. It would be beneficial for the reader if Table 5-1 be updated to include additional information pertaining to all surface water quality monitoring stations.	The proponent is to provide additional detail pertaining to all surface water quality monitoring stations. At a minimum, the proponent should include the following regarding all surface water quality monitoring stations: <ul style="list-style-type: none"> • Short description of the station location (e.g. inflow to Hare Lake, from the east portion of the watershed); • Updated period of record that documents sampling frequency (e.g. annual, semi-annual, monthly, etc.) • The purpose of the station (e.g. baseline, continuous monitoring, impact monitoring, etc.); and • Identify which stations will be removed due to mine development (i.e. Schedule 2 or Section 34/35 approval under a <i>Fisheries Act</i> Authorization).

SW-8	2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity	Water Quality Baseline Report Update, November 11, 2020 Chapter 5.0 METHODOLOGY, pg. 5.3	<p>Surface water quality sampling stations S2, S3, S52/S6, S8, S11, S30, S14 and S28 were identified by the proponent as long-term baseline data collection stations. It is encouraging to see that the collection of baseline surface water quality data has continued since the project was put on hold in 2013; however, it is concerning that continued sampling of some key stations did not take place. Particularly, those stations related to the proposed receiver of mine effluent, Hare Lake. It appears that Hare Lake was last sampled on a monthly basis during ice-free conditions in 2008 and 2009 (12 years ago), although some semi-annual sampling occurred until 2013 (8 years ago). It is important that up-to-date monthly samples be collected from Hare Lake in order to appropriately characterize <u>current</u> baseline conditions of the receiver prior to significant site alterations. Other key surface water quality sampling stations, from which current and/or continued water quality data will help guide future assessments and approvals include S10, S-11, S-41, S-5, S-29, and S-30. This data is essential for evaluation and modeling of the proposed effluent discharge and review of future Environmental Compliance Approvals (ECA) applications.</p>	<p>It is recommended that the proponent initiate additional and/or continued baseline sampling from the following surface water quality monitoring Stations:</p> <ul style="list-style-type: none"> • LHare (Hare Lake), • S10 (eastern inflow to Hare Lake), • S41 (Bamoos Lake outlet creek and northeastern inflow to Hare Lake), • S5 (Seeley Creek/northwestern inflow to Hare Lake), • S11 (outflow from Hare Lake), • S30 (Hare Creek where it flows into Lake Superior at Port Munro), • P1 (Pic River upstream), • P2 (Pic River downstream), • S4 (Stream 2), • S6 (Stream 3), and • S31 (near mouth of Stream 6 (Angler Creek) at Lake Superior's Sturdee Creek). <p>Adequate baseline surface water quality sampling is required in order to adequately characterize the current baseline condition. It is expected that recent data (at least 2 years of monthly or 3 years of quarterly data) be used to define the 75th percentile surface water quality of the above surface water features. As discussed previously, 75th percentile results need</p>
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			<p>It is also noted that baseline sampling was not continued for the Pic River surface water quality sampling stations. Due to a number of reasons (situations under higher flows when runoff from the MRSA may drain to the Pic River, the proposed eventual drainage of the MRSA area and pits towards the Pic River upon closure, and the importance of this river to area Indigenous communities), it is recommended that continued sampling of the Pic River occur in order to characterize <u>current</u> baseline conditions prior to construction and to have an appropriate baseline dataset for comparison with monitoring data during operations and post-closure. Current baseline surface water quality data should also be collected for Stations S4 (Stream 3), as it is one of the streams which will be impacted by MRSA development and operations, followed by post-closure restoration.</p> <p>Additionally, it is understood that upon closure, drainage from Cell 1, Water Management Pond and Stormwater Management Pond will proceed to Angler Creek. As such it is recommended that long-term monitoring of Stations S14 and S31 continue.</p> <p>It is understood, after reviewing responses back from the proponent to already submitted Information Requests</p>	<p>to be compared against applicable PWQOs and CWQGs in order to assess the policy status of any receivers according to MECP receiver policies. Sampling of the proposed mine effluent receiver, Hare Lake, should consist of 2 years of monthly sampling. Additionally, monitoring of Hare Lake should include water quality sampling at depth and spatially to better understand water chemistry variability throughout the lake, supported by concurrent dissolved oxygen, conductivity and temperature profiles to gather current stratification/mixing regime of Hare Lake.</p> <p>The 75th percentile values of the constituents of potential concern in the receiver will be used to predict the maximum mixing zone length/size. Further requirements and guidance pertaining to the derivation of mine effluent requirements is available in the MECP's Policy B-1-5 – <i>Deriving Receiving-Water Based, Point Source Effluent Requirements for Ontario Waters</i>, July 1994. The baseline data will support updated mixing zone modeling (i.e. CORMIX modeling) and future requirements for Environmental Compliance Approval (ECA) pre-submission consultation with the MECP.</p>
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			<p>from Indigenous communities, that the proponent is proposing to carry out additional baseline sampling. However, details regarding additional sampling are not evident in the EIS Addendum or supporting reports. Consistent with the proponent's previous commitment, government agencies, local communities and interested stakeholders should be provided with an opportunity to review and provide comments and guidance regarding specifics for additional baseline sampling programs.</p>	<p>The proponent is to provide additional information respecting upcoming baseline surface water, sediment and/or benthic invertebrate monitoring programs. Such programs should include sampling of the abovementioned sampling stations.</p>
SW-9	<p>2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity</p> <p>Section 2.6.1.5 Fish and Fish Habitat</p>	<p>Water Quality Baseline Report Update, November 11, 2020 Chapter 5.0 METHODOLOGY, pg. 5.3</p> <p>Aquatic Environment Baseline Report Update, November 13, 2020, Chapter 5.0 METHODOLOGY</p>	<p>There are a number of lakes or small unnamed on-line ponds within the study area that appear to have only been sampled once, in 2009, or not at all. Current baseline characterization of some of these lakes/ponds may be required; however, it is unclear why water quality sampling or additional sampling was not conducted, especially for those located in close proximity to proposed infrastructure. For example, there is potential for impacts from construction and operation activities on Lake L3, located south of the proposed Main Substation and north of the proposed Fuel Farm. Also, there does not appear to be surface water quality data for an unnamed online lake located in subwatershed 101, south of the proposed South Pit, northwest of Lake L4 and east of the proposed access road. Additionally, there are</p>	<p>The proponent is to provide justification as to why current baseline sampling was not carried out for some lakes and on-line ponds. It is recommended that current baseline surface water quality, fish and fish habitat, sediment quality and benthic invertebrate data be collected from those surface water features predicted to experience drawdown as a result of pit dewatering in order to appropriately characterize the baseline condition of these surface water features prior to construction activities.</p>

			lakes located within the predicted zone of influence from pit dewatering that may experience drawdown effects during operations. For example, the groundwater drawdown contour through Malpa Lake is 5 m as a result of pit dewatering. All lakes within the predicted zone of influence from pit dewatering need to be appropriately characterized respecting surface water quality, fish and fish habitat, sediment quality and benthic invertebrate communities.	
SW-10	2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity	Water Quality Baseline Report Update, November 11, 2020 Chapter 6.0 Updated Baseline Conditions and Section 6.2 Water Quality Screening Results, pg. 6.5 and others Chapter 4.0 Environmental Setting, Section 4.5.3 Surface Water Quality, pg. 4.22 and others	Chapter 6.0 of the Water Quality Baseline Report interprets water quality trend results using parameter-specific data plots with trend lines and provides a visual comparison of water quality data between 2008 and 2019. The main objective being to demonstrate that water quality throughout the watersheds has not changed over time. Section 6.2 of the report offers a high-level interpretation of the updated data by providing a percentage of exceedance of applicable PWQOs and CWQGs for each sample station. This approach provides a good indication of which parameters may be a constituent of potential concern; however, 75 th percentile values for each sample station are not provided. As discussed in an earlier IR, the 75 th percentile concentration is the value that should be compared against applicable PWQOs and CWQGs.	The proponent is to provide a data interpretation in Chapter 6 using updated 75 th percentile parameter concentrations to compare against PWQOs and CWQGs.

SW-11	<p>2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity</p> <p>2.7 Impact Assessment Section 2.7.2.3 Water Quality and Quantity</p>	<p>Water Quality Baseline Report Update, November 2020 Chapter 2.0 PREVIOUS CHARACTERIZATION OF EXISTING CONDITIONS, Section 2.3.1 Stream 105 Subwatershed, Table 2-10: Water Chemistry in Subwatershed 105, Station S11, Table 2-11, Station S30, and</p> <p>Environmental Impact Statement Addendum, Chapter 6.0 Assessment of Potential Impacts, Section 6.2.3, subsection 6.2.3.6.4 Change in Surface Water Quality, pg. 6.155; Tables 6.2.3-6, 6.2.3-7</p> <p>AIR #19 – Part 4, Nitrogen Compounds in discharge to Hare Lake</p> <p>IR1-4 Temporal and Spatial Trends in Water Chemistry and Generation PGM</p>	<p>Phosphorus will require management as it's used as a flotation chemical in the process plant and is predicted to be at environmentally relevant concentration in process water. Phosphorus removal is proposed to be accomplished using a metal-based coagulant at optimum pH and removal of precipitate via settling and filtration, resulting in a phosphorus concentration near benchmark values. However, an appropriate benchmark must be set for phosphorus, while also taking into consideration surface water features downstream of the receiver.</p> <p>Surface Water Quality figures were generated in ArcGIS by the proponent in response to IR1-4 as a method to depict estimated variation in median parameter values across the LSA and offer a visualization of spatial trends for some parameters. Two pockets of elevated phosphorus concentrations have been noted, one in the northeast at Station S32 by the Pic River, and a second downstream of Hare Lake at Station S29 (tributary to Hare Creek). The elevated phosphorus concentrations downstream of the receiver, Hare Lake, is concerning.</p> <p>The interim PWQO for phosphorus is commonly 0.03 mg/L for rivers and streams, while the interim PWQO for lakes depends on background values.</p>	<p>The proponent is to provide an assessment of phosphorus levels in subwatershed 105, specifically, those surface water features associated with Hare Lake (L-Hare), Hare Lake inflows (S5, S41, S10), outflows (S11) and downstream Stations S29 and S30. The assessment should include an appendix of surface water sampling phosphorus results for the above noted stations, including the 75th percentile phosphorus concentrations. Details regarding ongoing monitoring should also be circulated for review and comment.</p>
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		<p>Response dated May 19, 2021.</p> <p>Generation PGM - Response to Comments on Marathon Palladium Project Environmental Impact Statement received from Michipicoten First Nation, dated June 8, 2021</p>	<p>A water quality criterion of 0.01 mg/L should apply to lakes and ponds where they are naturally below this value, and a PWQO of 0.02 mg/L would normally apply to all others to avoid nuisance algae in lakes. At this time, it is difficult to determine appropriate water quality criteria, as it is unclear if 75th percentile background concentrations have been assessed. However, a review of some of the available baseline data shows some concerning values. The max baseline phosphorus concentration measured at Station S11 (outlet of Hare Lake) was 0.049 mg/L and the average was 0.008 mg/L. At Station S30 (Hare Creek at Lake Superior) the maximum phosphorus concentration was 0.239 mg/L while the average 0.028 mg/L. This maximum value is well above the PWQO for streams at 0.03 mg/L, while the average value is very close to the PWQO. No data could be located for surface water sampling Station S29, in either the 2012 or 2020 Water Quality Baseline Reports. There is concern that the receiver, Hare Lake, may be a Policy 2 receiver respecting phosphorus due to concerns with elevated phosphorus levels downstream.</p> <p>The background phosphorus concentration identified in Table 6.2.3-7 of the EIS was 0.01 mg/L; however, a benchmark of 0.02 mg/L was proposed,</p>	
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			<p>whereas the 2012 EIS proposed a benchmark of 0.01 mg/L. The updated proposed benchmark of 0.02 mg/L is not appropriate; where baseline concentrations of phosphorus have been established at 0.01 mg/L or less, the interim PWQO of 0.01 mg/L should apply for lakes naturally below this value. Setting a benchmark greater than this value may allow for increases in lake phosphorus levels that can result in increased nutrient loads, promote algae growth and conditions leading to eutrophication. This could also further increase what appear to be already elevated phosphorus concentrations downstream of the receiver. Concerns respecting eutrophication of study area lakes have also been brought up by local indigenous communities. The collection of additional baseline monitoring, as recommended above, will help in characterizing current Hare Lake water quality, including phosphorus concentrations.</p> <p>As noted earlier, the proponent has indicated that: "...water quality sampling is ongoing and will continue through the pre-construction period, transitioning into construction and operations at the appropriate times." Details regarding ongoing monitoring should be circulated for review and comment.</p>	
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SW-12	2.10 Assessment Summary and Conclusions	Water Quality Baseline Report Update, 7.0 SUMMARY AND CONCLUSIONS	The proponent has concluded that the surface water quality data collected to date is sufficient to support the effects assessment portion of the EIS Addendum: <i>“Generally, this information continues to be relevant and sufficient to support the updated effects assessment.”</i> However, as noted in the abovementioned IR’s, baseline characterization of surface water features has not been sufficiently accomplished.	The proponent is to provide the information requested above and is to collect and update the current baseline surface water quality data in order to appropriately support the assessment of effects from the proposed project.
SW-13	2.6 Existing Environment Section 2.6.1.4 Water Quality and Quantity Section 2.6.1.5 Fish and Fish Habitat Section 2.6.2.4 Human Health	Aquatic Environment Baseline Report Update, Chapter 2.0 PREVIOUS CHARACTERIZATION OF EXISTING CONDITIONS, Section 2.2.8.1 Metal Levels in Fish Tissues in the Pic River, Section 2.2.10.12 Metal Levels in Fish Tissue, 2.5: Mean metal concentration in fish collected in Hare Lake, Chapter 5.0 METHODOLOGY, Section 5.2 Follow-up Field Studies Chapter 6 ASSESSMENT OF POTENTIAL IMPACTS,	Previous fish tissue collection and assessment of walleye from the Pic River and northern pike and spottail shiner from Hare Lake involved only 5 fish each. This is not a large enough sample size to establish statistically significant baseline data. Also, forage/small-bodied fish should be assessed as composite whole-bodied samples, rather than single fish. Additionally, fish tissue contaminant concentrations were presented as minimum, maximum and mean values for Pic River fish and mean concentrations for Hare Lake fish. The mean concentrations of mercury found in the muscle of northern pike sampled from Hare Lake was 2.084 µg/g. This is concerning as Ontario’s Guide to Eating Ontario Fish indicates that fish with a mercury body burden of greater than 1.80 µg/g should not be eaten by neither the general nor sensitive	It is recommended that additional fish tissue collection be carried out for both the Pic River and Hare Lake. Selected fish species should be representative of fish present and also of interest to local communities; most likely walleye and northern pike as the large bodied fish (used for human consumption) and Spottail shiner and/or yellow perch as the small-bodied fish (used by aquatic life consumption). Samples of large fish should be prepared as described in the Ministry’s Sport Fish Contaminant Monitoring Program, “Protocol for the Collection of Sport Fish Samples for Inorganic and Organic Contaminant Analyses”, portions of which have been included later in this Appendix. Scientifically equivalent protocols can be discussed with the Ministry of the

		<p>Section 6.2.4. Fish and Fish Habitat; Section 6.2.10.4 Existing Conditions for Human Health, pg. 6.458</p> <p>Appendix D10 – Human Health Risk Assessment, Section 4.3 First Nation Food, Nutrition and Environmental Study</p> <p>Generation PGM - Response to Comments on Marathon Palladium Project Environmental Impact Statement received from Michipicoten First Nation, dated June 8, 2021</p>	<p>population groups. However, it is challenging to appropriately assess fish tissue contaminant levels when results have not been size-standardized (or normalized) based on fish lengths and/or weights. MECP nor the public cannot rely on mean fish tissue contaminant concentration when assessing current contaminant levels in fish in the study area waterbodies as it is expected that fish of larger sizes will have high concentrations of contaminants than those of smaller lengths. Therefore, fish tissue contaminant data should be assessed based on size-standardized (normally lengths) results. Such an assessment should determine fish tissue contaminant concentrations for specific length ranges and allow for the determination of fish consumption advisories for different lengths of fish of different species. Without a size-standardized assessment, appropriate determination of current fish consumption advisories cannot be made.</p> <p>Section 5.2 Follow-up Field Studies included no additional fish tissue collection for contaminant analysis presented for other fish species for either the Pic River or Hare Lake.</p> <p>Chapter 6 ASSESSMENT OF POTENTIAL IMPACTS, Section 6.2.4.</p>	<p>Environment, Conservation and Parks.</p> <p>As a minimum, selected species of large fish should be collected and analyzed for mercury and other common contaminants. Baseline fish tissue sampling programs should strive to collect 10 to 20 individuals per species (of a range of sizes of at least 20 – 75+ cm size) and, if possible, a mix of gender. Collection of a biopsy plug from a fish fillet can be considered when mercury is a prime contaminant of interest and sacrificing fish is not advisable due to low numbers of fish present. Fish smaller than 20 centimeters in total length should not be sampled using a non-lethal method. The MECP can provide additional direction regarding the collection of biopsy plugs should this option be considered by the proponent.</p> <p>Effort should be made to collect small-bodied fish between 50 and 100 mm in total length, and age confirmation should be made using scales, fin rays or opercles. 5 to 10 sufficiently sized individual fish should be collected to yield a composite sample of approximately 10 grams. A minimum of five composite samples should be used to evaluate forage fish body burdens.</p>
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			<p>Fish and Fish Habitat of the EIS Addendum does not include an assessment of potential impacts from the mine on fish and aquatic life tissue contaminant levels.</p> <p>The proponent has indicated in a response to concerns raised by Michipicoten First Nation that they will be consolidating fish tissue contaminant data from their project with data available from the MECP. The proponent also claimed that there are already fish consumption advisories in place for Hare Lake; however, upon reference to Ontario's Guide to Eating Ontario Fish, and confirmation from the MECP's Fish Contaminant Monitoring Program, Environmental Monitoring and Reporting Branch (EMRB) it has been confirmed that there are currently no fish consumption advisories issued by the Province for Hare Lake</p> <p>The proponent has also indicated in a response to Michipicoten First Nation that the company is planning another fish collection program in 2021 and fish will be retained for mercury and other metal analysis. Details regarding future fish monitoring is absent from the EIS Addendum and supporting reports. Consistent with the proponent's previous commitment, government agencies, local communities and interested stakeholders should be</p>	<p>Analysis of the fish tissue contaminant results should involve conducting species-specific power series regressions between fish length and mercury concentrations to derive standard length concentrations at every 5 cm interval. These standard-length mercury concentrations can then be compared with the fish consumption advisory benchmarks for mercury used by Ontario to derive current recommended maximum meals per month.</p> <p>Small-bodied fish contaminant results should be compared against the Ontario's fish tissue residue criteria for the protection of aquatic life and fish-consuming birds of 0.5 µg/g of mercury in whole fish. Additionally, the Canadian Tissue Residue Guidelines for the Protection of Wildlife Consumers of Aquatic Biota is 0.033 µg/g methylmercury.</p> <p>The length-standardized baseline fish tissue data should also be used to make meaningful comparisons between waterbodies.</p> <p>This baseline fish tissue data should be used as a baseline condition against which the proponent will monitor potential changes in fish</p>
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			<p>provided with an opportunity to review and provide comments and guidance regarding specifics for additional baseline sampling programs.</p> <p>The proponent also responded that mine operations are not expected to create conditions that would trigger mercury becoming more bioavailable; however, mercury could be mobilized by many pathways within the mine site such as through logging, land clearing, excavation, flooding of ponds, etc. This may lead to elevated mercury levels in fish.</p>	<p>tissue contaminant concentrations over the life of the mine.</p> <p>Following the collection and analysis of additional baseline fish tissue contaminant data, the proponent is to provide an assessment of potential impacts from the mine on fish and aquatic life tissue contaminant levels. A literature review of fish contaminant impacts from mining activities and land clearing may assist in this assessment.</p>
SW-14	2.7 Impact Assessment Section 2.7.2.3 Water Quality and Water Quantity	<p>Environmental Impact Statement Addendum, Chapter 6.0 ASSESSMENT OF POTENTIAL IMPACTS, Section 6.2.3, subsection 6.2.3.6.4 Change in Surface Water Quality, pg. 6.150</p> <p>Environmental Impact Statement Addendum, Appendix D11 Surface Water Quality Effects Assessment Update, Chapter 6.0 Water Quality Predictions, Section 6.2.2.3 Temperature Regime of Hare Lake, pg. 6.7</p>	<p>The EIS Addendum proposes substantial changes to effluent components and the discharge scenario compared to the original EIS (2012). Several parameters of the mine discharge have changed, including the discharge components (i.e., surplus water from MRSA is now proposed to be discharged to the PSMF then to Hare Lake as opposed to being directed to the Pic River), the inputs to the receiver (i.e., maximum discharge rate increased due to increased flow from the MRSA) and the timing window for discharge of effluent (i.e., proposed discharge period has changed from spring freshet and fall discharge windows under higher flows, to an April through to November discharge window). Due to these changes, it is expected that the CORMIX mixing zone</p>	<p>As requested under comment #s HYDRO-2 and HYDRO-21 (MECP IR Request Table 5), updated CORMIX modeling, including assessment of the buoyancy of the plume is necessary to understand impacts based on updated baseline water quality inputs, additional effluent components from the MRSA and the discharge scenario. Updated modeling must also include assessment of the effects of lake stratification on plume dispersion, along with vertical exchange during spring-fall turnovers.</p> <p>The updated assessment should also discuss the potential for meromixis of Hare Lake as a result of the altered effluent components and discharge scenario, along with potential impacts to the thermal regime of the lake that</p>

		<p>EIS (2012), IR 12.1.1</p> <p>EIS (2012), IR 12.6.1</p> <p>SIR 05</p>	<p>modeling will need to be updated. See Issue #s MECP-HYDRO-2 and MECP HYDRO-21. Additionally, since the proposed discharge period now stretches from spring to fall, discharge is now proposed to also occur while Hare Lake is stratified. Updated modeling must also assess mixing conditions within the epilimnion and hypolimnion in order to account for differences in water quality and plume dispersion during stratified conditions, along with vertical exchange during spring-fall turnovers. Hare Lake is a deep, oligotrophic, cold-water lake that supports cold-water fish species; under the right conditions (effluent quality, lake stratification, etc.), similar lakes have become meromictic. There may be potential for Hare Lake to experience meromixis, or long-term/permanent stratification where stratified layers do not physically mix as they normally would during spring and fall overturn. The bottom layer becomes anoxic as it doesn't receive oxygen from the atmosphere, and very few organisms can survive in these conditions. This is especially crucial to cold-water fish as they frequent deeper colder waters, especially during the warmer summer months. Under normal conditions there can be some depletion of oxygen at lake bottoms, resulting in a narrowing band of suitable habitat for cold-water species. This becomes</p>	<p>may negatively impact aquatic life and critical habitat. The assessment should also consider the potential for effluent sulphate and total dissolved solids levels to help induce meromixis.</p> <p>The proponent is to also identify potential changes to thermal properties of Hare Lake and Hare Creek that may result from effluent discharge occurring from April through to November. This assessment should also assess the potential effects on Hare Lake and Hare Creek ecological features and aquatic life as a result of potential changes to water temperatures and provide information on appropriate measures to mitigate potential thermal effects.</p>
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			<p>exasperated under meromictic conditions, ultimately eliminating adequate habitat for cold-water fish resulting in their demise. It is understood that this concern was considered during the initial EIS (2012); however, this concern has not been assessed under the updated project. The potential for meromixis of Hare Lake as a result of the altered effluent components and discharge scenario needs to be clearly assessed, along with the potential impacts to the thermal regime of the lake that may negatively impact aquatic life. The changes to discharge from the PSMF may result in effluent with an increased water temperature that could affect the depth of the thermocline or duration of stratification in Hare Lake or the thermal properties of the outflow at Hare Creek. Since effluent discharge is now proposed to occur throughout the summer months, there is expected to be greater potential for impacts to water quality and aquatic life as a result of warmed effluent from the impounded water in the PSMF, which is expected to reach its highest temperature during the height of summer.</p>	
SW-15	2.7 Impact Assessment Section 2.7.2.3 Water Quality and Water Quantity	Environmental Impact Statement Addendum, Chapter 6.0 ASSESSMENT OF POTENTIAL IMPACTS, Section 6.2.3.6.4	<p>Since baseline water quality concentrations for Hare Lake require updating as discussed above, some background values listed in Table 6.2.3-7 and assessment benchmarks included in Tables 6.2.3-6 and 6.2.3-7</p>	<p>Following collection and analysis of current surface water quality baseline data for Hare Lake, Stream 106 and the Pic River, surface water quality benchmarks and predicted constituent concentrations need to be re-</p>

		<p>Change in Surface Water Quality and Tables 6.2.3-6, 6.2.3-7, 6.2.3-8 and 6.2.3-9</p> <p>Appendix D11 Surface Water Quality Effects Assessment Update, Chapter 6.0 Water Quality Predictions, Sections 6.2.2.1.1, 6.2.2.1.2, 6.3.1, 6.3.2, 6.3.3</p>	<p>may change. It is assumed that the background water quality values included in Table 6.2.3-7 are 75th percentile concentrations; however, this should be clearly defined in Section 6.2.3.6.4 of the EIS. Updated baseline data may result in changes to background water quality concentrations for some parameters. Also, some assessment benchmarks are dependent on other ambient water quality parameters (e.g. pH, hardness, etc.); current water quality results may change some of the selected benchmarks. Consequently, changes to background water quality concentrations require changes to predictive model input parameters and may in turn result in changes to predicted constituent concentrations.</p>	<p>evaluated prior to commencing significant site alterations, and in the case of Hare Lake prior to any project discharges. Updated baseline characterization of the receiver of mine effluent must be completed in order to initiate Environmental Compliance Approval pre-submission consultation.</p>
SW-16	2.7 Impact Assessment Section 2.7.2.3 Water Quality and Water Quantity	<p>Environmental Impact Statement Addendum, Chapter 6.0 ASSESSMENT OF POTENTIAL IMPACTS, Section 6.2.3.6.4 Change in Surface Water Quality and Table 6.2.3-7</p>	<p>Although there is no existing PWQO for sulphate or TDS, these parameters are problematic as they are often the primary causes for meromixis when elevated under certain conditions. Projects involving discharges in Ontario need to develop effluent limits/objectives or water quality criteria for these parameters that are protective of the environment and the site-specific conditions. For example, BC has draft water quality criteria of 250 mg/l (maximum) and 65 mg/L (30-day exposure) for sulphate. Maximum threshold criteria need to be developed for Hare Lake.</p>	<p>It is recommended that a maximum threshold criterion be developed as an effluent objective for sulphate at the edge of the mixing zone, supported by potential mitigation measures should this threshold be reached.</p>

SW-17	2.7 Impact Assessment, Section 2.7.1.1 Effects Prediction	<p>Original EIS (2012), Section 6.1.1.2.1 Identification of Contaminant of Potential Concern.</p> <p>EIS Addendum 2021, Appendix D11 Section 6.0 Water Quality Modelling.</p>	<p>It is noted that metals associated with the ore body (rare earth metals specific to Platinum Group Metals (PGM) group), palladium in particular, have not been identified as a constituent/contaminant of potential concern. It is understood that the main mineral commodities to be targeted include palladium and copper; however, some material (e.g. the EIS Addendum, Chapter 1.0 Background and Introduction, Section 1.5 Project Description, subsection 1.5.4.2 Ore Handling, pg. 1.47) suggests other minerals may be extracted.</p> <p>No water or sediment quality baseline values have been included for palladium or other PGM. Also, predicted water and sediment palladium and other PGM concentrations have not been provided for Hare Lake during operations and post-closure, or for the Pic River post-closure.</p> <p>At this time there are no provincial or federal chronic toxicological water quality guidelines or criteria for palladium; however, recent toxicological information indicates that palladium may be more toxic than was understood during the original EIS review. The Nuclear Waste Management Organization conducted a literature review of Palladium toxicity. They proposed a water quality guideline</p>	<p>The proponent is to clarify if minerals other than palladium and copper are to be pursued for extraction and processing.</p> <p>The proponent is to provide baseline Hare Lake and Pic River water and sediment quality data for palladium, and other Platinum Group Metals (platinum, ruthenium, rhodium, palladium, osmium, and iridium), as well as for gold, and updated data for silver.</p> <p>The proponent is to provide water and sediment quality predictions for palladium, and other Palladium Group Metals (platinum, ruthenium, rhodium, palladium, osmium, and iridium), as well as for gold and silver in Hare Lake during operations and post-closure and in the Pic River and Stream 106 during post-closure.</p> <p>Should predicted values of the abovementioned elements result in concentrations greater than baseline values, there may be a need to develop effluent limits for discharge to Hare Lake and triggers for allowing the release of water to the Pic River and Stream 106 during post-closure. This is not expected to be provided during the EIS stage of the project; however, further discussion</p>
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			<p>of 0.068 µg/L based on an acute 48-hour <i>Daphnia magna</i> immobilization test that showed the lowest effect level at a concentration of 6.8 µg/L and applying an uncertainty factor of 100 (Zimmermann et al. 2017). In order to compare the sample results against the palladium criterion of 0.068 µg/L, the method detection limit (MDL) for the sampling and analysis of palladium should be less than this value.</p> <p>An adequate assessment of risk from palladium and platinum group metals is necessary to adequately assess the need to implement mitigation measures such as appropriate, currently available treatment technologies for the effluent and to plan for appropriate mine material management.</p>	<p>may be required during Environmental Compliance Approval application pre-submission consultation.</p>
SW-18	<p>2.7 Impact Assessment Section 2.7.1.1 Effects Prediction</p> <p>Section 2.7.2.3 Water Quality and Water Quantity</p>	<p>Environmental Impact Statement Addendum, Chapter 6.0 ASSESSMENT OF POTENTIAL IMPACTS, Section 6.2.3.6.4 Changes in Surface Water Quality Tables 6.2.3-7, 6.2.3-8 and 6.2.3-9.</p> <p>EIS Addendum 2021, Appendix D11 Section 6.0 Water Quality Modelling.</p>	<p>Modelling of changes to water chemistry of Hare Lake from treated effluent release, and the Pic River and Stream 106 resulting from post-closure drainage did not include an evaluation for water pH or alkalinity.</p>	<p>Please provide water quality predictions for pH and alkalinity in Hare Lake during operations and post closure and in the Pic River and Stream 106 during post-closure and propose associated benchmarks.</p>

SW-19	<p>2.7 Impact Assessment Section 2.7.1.1 Effects Prediction</p> <p>Section 2.7.2.3 Water Quality and Water Quantity</p>	<p>Environmental Impact Statement Addendum, Chapter 6.0 ASSESSMENT OF POTENTIAL IMPACTS, Section 6.2.3.6.4 Change in Surface Water Quality.</p>	<p>Copper appears to be naturally elevated across various watersheds within the project area. Although currently not identified as a constituent/contaminant of potential concern, an appropriate effluent limit needs to be confirmed using the new Federal Environmental Quality Guidelines for copper, which is based on the biotic ligand model (BLM) approach.</p>	<p>The proponent is to reassess the benchmark (effluent limit) identified for copper in Section 6.2.3.6.4 using the new Federal Environmental Quality Guidelines for copper: https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/federal-environmental-quality-guidelines-copper.html.</p>
SW-20	<p>2.7 Impact Assessment Section 2.7.2.3 Water Quality and Water Quantity</p>	<p>Environmental Impact Statement Addendum, Chapter 6.0 ASSESSMENT OF POTENTIAL IMPACTS, Chapter 6.2.3 Section 6.2.3.1.1, pg. 155 and others</p>	<p>Section 6.2.3.1.1 discusses the proposed effluent stream to Hare Lake being made up of a mix of process water from the PSMF, drainage from the MRSA and contact water from developed portions of the site; however, it is unclear if seepage from the PSMF has been taken into consideration as part of the effluent stream.</p>	<p>The proponent is to provide more detail regarding how PSMF seepage will be managed and how seepage may discharge to nearby surface water features and the possibility of seepage moving beyond property boundaries.</p>
SW-21	<p>2.7 Impact Assessment Section 2.7.2.3 Water Quality and Water Quantity</p> <p>Section 2.7.2.4 Fish and Fish Habitat</p> <p>2.8 Environmental Management Section 2.8.2 Decommissioning and Closure Plan</p>	<p>Environmental Impact Statement Addendum, Chapter 6.0 ASSESSMENT OF POTENTIAL IMPACTS, Section 6.2.3.6.1 Change in Groundwater Quantity, Page 6.129, Table 6.2.3-4; Section 6.2.3.6.3 Changes in Surface Water Quality, pg. 6.146; Section 6.2.4.6.2 Harmful, Alteration,</p>	<p>It is understood that at closure, the proponent will not allow the release of water from the PSMF and MRSA unless it meets acceptable water quality for direct discharge. This would result in a continued reduction in flow in watersheds 102, 103, and 106 following the operations phase of the mine, and continued delay in restoration of the associated streams. It is unclear what mitigation measures will be put in place should discharge from the PSMF and/or MRSA not occur as planned.</p> <p>Furthermore, streams 2 (subwatershed 102) and 3 (subwatershed 103) will</p>	<p>It is recommended that the proponent develop mitigation/contingency measures to apply should the water quality of the runoff from the PSMF and MRSA catch basins be unsuitable for discharge to the natural environment without treatment.</p> <p>Although the proponent has acknowledged that the HADD predicted to occur respecting subwatersheds 102 and 103 is irreversible, they have also indicated that Streams 2 and 3 will be restored. The proponent is to provide more details explaining how restoration of</p>

		<p>Disruption or Destruction of Fish Habitat, pg. 6.207</p> <p>Chapter 7.0 Environmental Management, Section 7.1.2.3 Environmental Monitoring and Management Programs, pg. 7.5; and Section 7.3 Follow-up and Monitoring, pg. 7.13</p> <p>Feasibility Study Section 20.2.2.3 Water Quality and Quantity page 20-9</p>	<p>experience a significant reduction to baseflow due to groundwater flow changes predicted to occur during the mine operations phase, and although “restoration” will occur post-closure, the streams may not be restored to baseline conditions. Post-closure flows and water quality in streams 102 and 103 will depend on runoff from the MRSA area. Both groundwater and surface water contributions are predicted to be significantly less than under baseline conditions, with surface water runoff now expected to be the primary source of water to these systems. With groundwater contributions predicted to be considerably less, it is anticipated that not all surface water quality parameters will return to baseline concentrations, especially stream temperature regimes. This will make attempts to restore streams 102 and 103 to baseline conditions difficult and has implications to the ecological functions of these features and downstream Pic River. Lower reaches of the tributaries afford coldwater spawning and nursery habitat for a community of migratory and resident salmonids as well as other small (baitfish) species.</p>	<p>Streams 2 and 3 will be accomplished, including information regarding the objectives of restoration, such as whether it is to simply accomplish restoration of flows or if the streams will also return to pre-development conditions respecting water quality and ecological functions such as restored benthic invertebrate communities, fish and coldwater fish habitat.</p>
SW-22	2.7 Impact Assessment Section 2.7.2.3 Water Quality and Water Quantity	<p>Environmental Impact Statement Addendum, Chapter 6.0 ASSESSMENT OF POTENTIAL IMPACTS,</p>	<p>There is concern respecting the quality of water accumulating in the pit lakes post-closure and the eventual release of this water to the Pic River. The exposure of pit walls to the atmosphere</p>	<p>It is recommended that the proponent carry out pit lake water quality modelling to ensure that once filled, the water will be of adequate quality to be discharged to the Pic River.</p>

	<p>Section 6.2.3.6.3 Changes in Surface Water Quality, pg. 6.163</p> <p>Chapter 7.0 Environmental Management, Section 7.1.2.3 Environmental Monitoring and Management Programs, pg. 7.5; and Section 7.3 Follow-up and Monitoring, pg. 7.13</p> <p>Appendix D11 Surface Water Quality, Section 3.0 Project Water Balance, pg. 3.16; Section 6.3 Closure, Section 6.3.3 Pic River, pg. 6.15, 6.16</p> <p>Generation PGM - Response to Comments on Marathon Palladium Project Environmental Impact Statement received from Michipicoten First Nation, dated June 8, 2021</p>	<p>is a concern since pit lake filling is expected to take ~ 30+ years. An assessment of the potential for acid generation and runoff from pit walls during pit lake filling and predicted effects on water quality of the pit lakes need to be conducted. Pit lake water quality modelling does not appear to have been conducted in the EIA Addendum. Monitoring, including post-closure monitoring for acid generation in pits, needs to be carried out to inform mitigation measures that may be needed.</p> <p>The Pic River is significant to local Indigenous communities and it contains a diverse fish community, with a variety of coolwater and coldwater fish species reported including Lake Sturgeon, Walleye, Longnose Sucker, Silver Redhorse, Muskellunge, Trout-perch, Spottail Shiner, Northern Redbelly Dace, Rainbow Trout, Coho Salmon, and Chinook Salmon. It is unclear how the proponent will ensure that discharge from the pits (once filled) will be suitable for release to the environment to ensure that no impacts to the habitat of the diverse fish community will occur.</p>	<p>The proponent is also to develop and undertake an ongoing pit lake water quality sampling program for each pit lake to confirm predictions and provide an early warning of potential concerns respecting water quality constituents of potential concern, and ensure that discharge from the pits (once filled) will be suitable for release to the environment.</p> <p>Further to the comment above, the proponent is to develop mitigation/contingency measures that may be applied should the water quality from the Pit Lake be unsuitable for discharge to the natural environment without treatment.</p>
SW-23	Chapter 6 Section 6.2.3.6.1 Change in	Open pit dewatering drawdown impacts on surrounding surface water features	The proponent is to assess the effects of the estimated open pit dewatering

		<p>Groundwater Quantity, page 6.126</p> <p>Chapter 7.0 Environmental Management, Section 7.1.2.3 Environmental Monitoring and Management Programs, pg. 7.5; and Section 7.3 Follow-up and Monitoring, pg. 7.13</p>	<p>have not been clearly discussed. Drawdown contours as depicted in Figure 6.2.3-4 Simulated Water Table Drawdown at End of Operation show contours intersecting several surface water features.</p> <p>The predicted impact to these features needs to be assessed. Monitoring of these features during construction and operations will also be required, and triggers for action to be taken should unacceptable impacts occur may be required.</p> <p>Such monitoring and triggers should be incorporated into environmental monitoring programs and contingency/mitigation plans should also be developed that will be applied should monitoring show unexpected impacts.</p>	<p>drawdown as a result of project activities on surrounding surface water features as they relate to water quantities, water quality, and the ecological functions of the features (e.g. impacts to benthic invertebrate, fish and fish habitat).</p> <p>The hydrology and surface water quality monitoring programs should also be updated to evaluate the drawdown effects on the surrounding surface water bodies. This should be developed in consultation with the MECP. Contingency/mitigation plans, including hydrological triggers, should also be developed that would be applied should the monitoring program detect that unacceptable impacts to the surface water feature(s) are occurring.</p>
SW-24	<p>2.7 Impact Assessment Section 2.7.1.1 Effects Prediction</p> <p>Section 2.7.2.3 Water Quality and Water Quantity</p> <p>2.8 Environmental Management Section 2.8.1 Environmental</p>	<p>Environmental Impact Statement Addendum, Chapter 6.0 ASSESSMENT OF POTENTIAL IMPACTS, Table 6.2.3-7</p> <p>Chapter 7.0 Environmental Management, Section 7.1.2.3 Environmental Monitoring and Management Programs, pg. 7.5; and</p>	<p>The proposed Environmental Effects Monitoring program includes little detail pertaining to operational and post-closure monitoring programs. Although specific monitoring requirements will be included in MECP-issued approvals/permits, detail regarding operational and closure monitoring should be proposed. Effluent and receiver monitoring have not been proposed in the EIS, although it can be assumed that effluent monitoring will reflect those parameters detailed in <i>Table 6.2.3-7 Maximum predicted</i></p>	<p>Effluent criteria and effluent and receiver monitoring programs will be assessed in further detail during pre-submission consultation with MECP technical support section during the preparation and review of complete ECA applications; however, it is recommended that the proponent prepare an effluent and receiver monitoring plan for the proposed discharge of mine effluent to Hare Lake. It is recommended that in addition to those parameters listed in Table 6.2.3-7 of the EIS, palladium,</p>

	Management Plans	Section 7.3 Follow-up and Monitoring, pg. 7.13	<p><i>constituent concentrations in Hare Lake during the operations phase</i> of the <i>Chapter 6 Assessment of Potential Impacts</i> of the EIS. However, there are a few constituents/contaminants of potential concern absent from this table that should be included in monitoring plans. These include palladium, total suspended solids, sulphate, un-ionized ammonia, and oil and grease. Also, pH, conductivity, turbidity, temperature, and dissolved oxygen should be measured in the field. Effluent samples must also be collected for acute toxicity testing using rainbow trout and <i>Daphnia Magna</i>. Receiver monitoring should include those parameters included in Table 6.2.3-7, those discussed above, along with a few others, including dissolved and total organic carbon, colour, alkalinity/acidity, and common ions.</p> <p>In addition to effluent and receiver water quality monitoring, there will also be requirements to carry out receiver sediment and benthic invertebrate sampling, and potential fish tissue sampling during operations as required by the Federal Metal and Diamond Mining Effluent Regulations, and, Environment Canada and Climate Change's Metal Mining Technical Guidance for Environmental Effects Monitoring. As well, future MECP-issued Environmental Compliance</p>	<p>total suspended solids, sulphate, un-ionized ammonia, and oil and grease also be included in the effluent monitoring program. Effluent sampling for acute toxicity testing using rainbow trout and <i>Daphnia Magna</i> will be required. Also, pH, conductivity, turbidity, temperature, and dissolved oxygen should be measured in the receiver when collecting water quality samples, and from the effluent when collecting samples for acute toxicity testing. Receiver monitoring should likely include those parameters included in Table 6.2.3-7, those discussed above, along with dissolved and total organic carbon, colour, alkalinity/acidity, and common ions. The monitoring plan should allow for the assessment of the accuracy of the predicted water quality to ensure that protection of the receiving water body is being achieved and that the treatment facilities are operating as designed.</p> <p>Section 7.1.2.3 Environmental Monitoring and Management Programs of the EIS should also propose ongoing monitoring of key surface water features of significance to local Indigenous communities: Pic River, Hare Creek and Stream 6 (Angler Creek) extending downstream to where the system(s) discharge into Lake Superior. The monitoring</p>
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			<p>Approvals may include additional monitoring requirements beyond the Federal requirements.</p> <p>Operational and closure monitoring should also include monitoring key surface water features of significance to local Indigenous communities and which have potential to be impacted by mine operations, site runoff and post-closure activities and restoration. This includes ongoing monitoring of the Pic River, Hare Creek and Stream 6 (Angler Creek), extending downstream to where the system(s) discharge into Lake Superior.</p>	<p>program should be designed to assess impacts to the features as a result of mine development and operations, site runoff and post-closure activities, and site restoration. Monitoring should be adequate to assess predicted project impacts, and mitigation plans should detail proposed mitigation/contingency measures that will be applied to rectify unexpected impacts.</p>
SW-25	<p>2.8 Environmental Management Section 2.8.1 Environmental Management Plans</p> <p>2.9 Table of Commitments</p>	<p>Chapter 7.0 Environmental Management, Section 7.1.2.3 Environmental Monitoring and Management Programs, pg. 7.5; and Section 7.3 Follow-up and Monitoring, pg. 7.13</p> <p>Chapter 8 Table 8.1: Updated Table of Commitments.</p>	<p>Due to concerns related to the potential for meromixis of Hare Lake, the proposed Environmental Monitoring and Management Programs should include a monitoring strategy and mitigation plan (including triggers for remedial action) to detect and mitigate conditions that may indicate the onset of meromixis is occurring.</p>	<p>The proponent is to develop an ongoing water quality monitoring program dedicated to monitoring for the onset and effects of meromixis on Hare Lake. At a minimum, the program should include the collection of temperature, dissolved oxygen, and conductivity profiles, monitoring of dissolved organic carbon and sulphate. The monitoring program should be supported by a mitigation/contingency plan should the onset of meromictic conditions be observed. It is understood that proposed mitigation measures may include artificial mixing of Hare Lake. This should be supported by a description of the effects of the mitigation, including any changes to</p>

				<p>Hare Creek and contingencies should mitigation measures be unsuccessful.</p> <p>It is recommended that this also be included as a commitment in Table 8.1 of the EIS.</p>
SW-26	2.9 Table of Commitments	<p>Chapter 8 Table 8.1: Updated Table of Commitments.</p> <p>Generation PGM - Response to Comments on Marathon Palladium Project Environmental Impact Statement received from Michipicoten First Nation, dated June 8, 2021</p>	<p>Concerns have been raised regarding the mobilization of mercury on site and potential for mercury methylation in aquatic environments. It is understood that the proponent plans to implement mitigation measures to reduce mercury methylation on site. These measures may include stripping vegetation from ponds prior to flooding; infilling the PSMF with tailings solids, eliminating exposed soil to the water column; the WMP and SWMP to be aerated for residual ammonia, therefore reduce the potential for anoxic conditions; and ongoing monitoring (routine water quality monitoring of site drainage and receiving environment as per Environmental Effects Monitoring and monitoring conditions favouring MeHg in sediment, such as sulphate levels).</p>	<p>It is recommended that the mitigation measures to reduce mercury methylation on site proposed by the proponent be included in Table 8.1: Updated Table of Commitments.</p>
SW-27	2.8 Environmental Management Section 2.8.2 Decommissioning and Closure Plan	<p>Appendix D6 Fish and Fish Habitat Offsetting Plan Update, Section 7.2.2.3 page 7.7</p>	<p>It is understood that the Fisheries Offset Plan includes potential enhancements (removal of fish passage barriers) to portions of Hare Creek, in order to improve access by fish to upper reaches of the creek and Hare Lake. However, it is the MECP's opinion that enhancements to Hare Creek that may promote fish access to</p>	<p>The proponent is to provide clarification regarding the objective of the proposed fish habitat compensation in Hare Creek. Is it to simply enhance spawning habitat in the creek, or will it allow fish passage into Hare Lake?</p> <p>If access to Hare Lake will be enhanced, then it is suggested that</p>

			<p>the effluent receiver may not be beneficial.</p>	<p>alternative fish habitat compensation measures be proposed that are outside of the areas with anticipated project effects.</p> <p>Although MECP does not have a direct role in fish habitat compensation plans, this information is important for MECP to consider when developing monitoring programs, contingency plans and mitigation measures for potential project related impacts.</p>
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Marathon Palladium Project

MECP Information Request Table 7

Subject: Operations

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
OPS-1	EIS Guidelines: 2.2.3.4 Maintenance, Administration and On-Site Support Facilities	<p>EIS Addendum Chapter 1 - Background and Introduction 1.5 Project Description 1.5.2.1 Phase I - Site Preparation and Construction</p> <p>Appendix D10- Human Health Risk Assessment Update</p> <p>IR2-5 Domestic Sewage Hauling – Domestic Sewage Collection and Disposal (pg 2 of 8) Response Procedures (pg 5 of 8)</p>	<p>While the temporary construction camp is referenced as part of the general Project layout, there is little information about the location. An alternative option of using a local sewage hauler was also proposed to remove septage waste to local septage sites.</p> <p>Disposal of sewage is expected to occur within an approved license facility. There are five (5) licensed beds located on Camp 19 Road close to the Town of Marathon landfill approximately 4 km south from the mine site (Figure 1), with additional licensed beds near Rossport (Phil's Waste Services Inc. 2021).</p> <p>During construction, it is anticipated that up to 14,100 L per day will be transported</p>	<p>Provide details on the location of the construction camp (onsite). There is also the option provided of using a septic hauler to remove sewage waste from site during construction at the construction camp.</p> <p>Provide a plan for sewage disposal taking into consideration that the local hauler has limited capacity and other options should be provided for sewage disposal as part of the EA process.</p>

			from site, which is equivalent to one (1) truck per day	
OPS-2	EIS Guidelines: 2.4.3 Alternative Means of Carrying out the Project	EIS Addendum Chapter 7.0 - Section 7.1.2.1 Waste and Recycling Material Management Program (pg 7.3) EIS Addendum Chapter 1.0 - Background and Introduction Addendum	Organic and non-recyclable solid non-hazardous waste collected at the mine site will be disposed of within the landfill situated in the PSMF. The EIS Addendum provided options for waste disposal: establishing a waste disposal site within the tailings area; establishment of a stand-alone site; and transporting waste to the Marathon landfill site.	Provide an alternative plan for waste disposal as part of the EA process. Messaging from MECP's Permissions Branch indicates that waste sites are not to be located within tailings area and should be established at a stand-alone site. The proponent will need to develop an alternative plan for waste disposal. The proponent may need to consult with MNRF if it is looking at acquiring Crown Lands to establish a waste disposal site.
OPS-3	EIS Guidelines: 2.2.3.4 Maintenance, Administration and On-Site Support Facilities	EIS Addendum – Chapter 1.0 Section 1.4.3.4.14 Waste Management Section 1.5.4.15 Waste Management	For generation of subject industrial or hazardous wastes, the proponent will be required to register as a subject waste generator for the removal of industrial/hazardous wastes from site (Reg. 347). Spill containment for the storage of subject wastes and contingency plans will be required.	Provide a plan for the disposal of liquid industrial and hazardous waste with contingency plans as part of the EA process.

OPS-4	<p>EIS Guidelines: 2.2.3.4 Maintenance, Administration and On-Site Support Facilities</p> <p>2.1.2 Legal Framework and Role of Government</p>	EIS Addendum Chapter 3.0 (Project Alternatives) - Section 3.3 (Conclusion) pg. 3.31	A concrete plant is proposed onsite, however the location of the plant, required approvals and discharges (if any) are unclear at this time.	Please provide the location of the concrete batch plant, potential discharges to the environment, and required approvals as part of the EA process.
OPS-5	EIS Guidelines 2.2.3.4 Maintenance, Administration and On-Site Support Facilities	EIS Addendum Chapter 1.0 - Table 1.4-5: Summary of Key Site Preparation Phase Activities	Information on the waste generated during the construction, operation and closure phases should be provided including volumes along with contingency plans for the management of waste.	Please provide information on the baseline quantities of waste to be managed during site preparation, construction, operation, closure as part of the EA process.
OPS-6	EIS Guidelines: 2.2.3 Project Description	EIS Addendum Chapter 7.0 - (Environmental Management) Section 7.1.2 EMS Components – Management Programs	<p>Below are the requirements of O. Reg. 102/94 Waste Audits and Waste Reduction Work Plans:</p> <p>(1) The builder shall conduct a waste audit covering the waste that will be generated in the construction project. The audit shall also address the extent to which materials or products used consist of recycled or reused materials or products.</p> <p>(2) After conducting the waste audit, the builder shall prepare a written report of the audit. Applies to facilities with a total</p>	Please provide information on the waste audit and reduction plans relating to the mine site during the construction phase as part of the EA process.

			floor area of at least 2,000 square metres.	
OPS-7	EIS Guidelines: 2.1.2 Legal Framework and Role of Government	EIS Addendum Chapter 1.0 – Section 1.3.4 Regulatory Approvals	The EIS Guidelines specifies that the EIS will identify regulatory approvals that may be required for the project, and which of those approvals, if any, will be requested for concurrent review with the EIS.	Provide a schedule of MECP permits and approvals with approximate timelines for the project as part of the EA process.
OPS-8	N/A	EIS Addendum Chapter 1.0 – Section 1.5.2 Project Phases	Prior to the start of construction activities, a monitoring plan and schedule relating to construction activities on-site must be submitted to the ministry as part of environmental compliance reporting.	The proponent must submit to MECP, a plan of construction activities that will take place, including timelines/schedule, environmental roles and responsibilities, spill prevention plans, contingency plans, etc. as part of its annual compliance report.
OPS-9	EIS Guidelines: 2.7.3.5 Human Health	EIS Addendum Chapter 6.0 – Section 6.2.10 Human Health	Airborne silica has been an issue at other mine sites.	Provide a plan to address silica emissions at the mine site as part of the EA process.
OPS-10	EIS Guidelines: 2.1.2 Legal Framework and Role of Government	EIS Addendum Chapter 1.0 - Background and Information, Table 1.3-3 Legislation Table	Table 1.3-3 should include all potentially applicable MECP legislation including: <ul style="list-style-type: none"> • Safe Drinking Water Act • Reg. 903 (Wells Regulation) • O. Reg. 224/07 (Spill Prevention and Contingency Plans) 	Include all applicable provincial legislation in Table 1.3-3 of the EIS Addendum.
OPS-11	EIS Guidelines: 2.7.2.2 Acoustic Environment	EIS Addendum Chapter 6.0 – Table 6.2.2-6: Blasting Noise and Vibration Limits	Provide information on mitigation and contingency measures to ensure that	Provide a plan for blasting including contingency measures as part of the EA process.

			blasting guidelines (NPC 119) will be met.	
OPS-12	N/A	EIS Addendum Chapter 7.0 (Environmental Management) - General	MECP recommends that the proponent establishes a website for the posting of information/reports relating to the site (e.g. public record).	MECP recommends that the proponent establishes a communications plan which includes a website where members of the public can view project information and/or reports, in addition to project updates (e.g. construction progress).
OPS-13	EIS Guidelines: 2.8.1 Environmental Management Plans	EIS Addendum Chapter 8.0 (Updated Table of Commitments) - Table 8.1 pg. 8.13	In addition to a formal complaints procedure for nuisance noise, a general public complaints process should be developed for mine construction and operation.	Provide a commitment to establish a public protocol/complaints process to be submitted to the MECP for review during the permitting and approvals phase.

Marathon Palladium Project

MECP Information Request Table 8

Subject: Species at Risk

BOLDED items indicate Information Requests of significance to MECP Species at Risk Branch.

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
SAR-1	N/A	General comment for EIS Addendum	<p>The Ministry of Environment, Conservation and Parks (MECP) has a jurisdictional mandate and a number of interests, including legislative requirements in the statutes MECP administers, that may be affected by or be applicable to the undertaking for which approvals under Canada’s federal <i>Environmental Assessment Act</i> (CEAA, 2012) and Ontario’s <i>Environmental Assessment Act</i> (EA Act) through a Joint Review Panel (the Panel) pursuant to the Canada-Ontario Agreement on Environmental Assessment Cooperation (2004) are being sought.</p> <p>MECP Species at Risk Branch (SARB) is providing opinion on whether our Ministry’s specific mandate, interests and legislative requirements under the <i>Endangered Species Act, 2007</i> (ESA) have been adequately identified, considered and addressed within the Environmental Impact Statement (EIS) Addendum, and whether any potential impacts to these that may result from the construction and operation of the proposed undertaking have been sufficiently identified, considered, and addressed in the EIS Addendum report for the Marathon Palladium Mine Project, dated April 2021.</p>	No action requested.

			<p>Our responses are provided below. We have attempted to outline our comments at an appropriate level of detail to inform a decision by the Minister of MECP. Where possible we have recommended an action for each comment. This could include a request to have a deficiency addressed in the EIS Addendum, a request to have additional commitments in the EIS, or a request for Marathon PGM to provide additional information to our ministry in advance of an application for a subsequent ESA permit, should it be deemed necessary.</p>	
SAR-2	N/A	<p>Terrestrial Environment Baseline Update Report (November 13, 2020); General</p>	<p>The MECP SARB is not aware of being provided an opportunity to comment/input on the 2020 fieldwork plans in support of the EIS Addendum. As a result, there is a risk that MECP SARB may deem aspects of the 2020 fieldwork insufficient in support of the determination of project impacts on species at risk (SAR) and/or their habitat that may be present in the Site Study Area (SSA), Local Study Area (LSA), or Regional Study Area (RSA). This may also have implications for potential ESA permitting, if applicable, and the proponent may be requested to conduct more field surveys.</p>	<p>No actions are proposed at this time. However, please note that further surveys may be requested subsequent to the EA in support of an ESA authorization, should an authorization be required.</p>
SAR-3	<p>EIS Guidelines 2.2.3 Project Description</p>	<p>Terrestrial Environment Baseline Update Report (November 13, 2020); 1.1.1 Project Overview</p>	<p>An off-site accommodations complex is mentioned in this section, but no further details are provided about this complex such as proposed location and footprint.</p>	<p>Requesting more information on the proposed location and footprint of the off-site accommodation complex and whether species at risk and/or their habitat should be considered as part of the off-site accommodation development.</p>

SAR-4	EIS Guidelines 2.2.3 Project Description	Terrestrial Environment Baseline Update Report (November 13, 2020); 1.1.1 Project Overview	Section mentions that new road will be constructed, but there are no further details provided on the size, length and location.	Requesting more information about the proposed new road such as location, length, width, and timing of road development.
SAR-5	EIS Guidelines 2.2.3 Project Description	Terrestrial Environment Baseline Update Report (November 13, 2020); 1.1.1 Project Overview	Section mentions a 115 kV transmission line from the mine to a connection point with the pre-existing Terrace Bay-Manitouwadge line (M2W Line) but details are lacking about the proposed line overall.	No action required as this was addressed in EIS addendum
SAR-6	EIS Guidelines 2.2.2 Project Setting	Terrestrial Environment Baseline Update Report (November 13, 2020); 1.1.1 Project Overview	A map illustrating the proposed locations of all the components within the project area would be helpful (e.g. locations of the access road, transmission line, pits, tailings, etc.) to orient the reader.	No action required as this was addressed in EIS addendum.
SAR-7	EIS Guidelines 2.2.2 Project Setting	Terrestrial Environment Baseline Update Report (November 13, 2020); 1.1.1 Project Overview Figure 1	The proposed Project footprint is absent on Figure 1. It would be helpful to the reader to see the actual project footprint on this figure, rather than just the property boundaries.	No action required as this was addressed in EIS addendum.

SAR-8	EIS Guidelines 2.2.2 Project Setting 2.3.5 Spatial Boundaries	3.2 Local Study Area & 3.3 Regional Study Area	These sections are lacking map figures that illustrate the caribou LSA and RSA which would be visually helpful to the reader.	No action required as this was addressed in EIS addendum.
SAR-9	N/A	Terrestrial Environment Baseline Update Report (November 13, 2020); 4.2 Field Surveys Figure 4 Figure 5	Figures 4 and 5 indicate that very little fieldwork occurred within a large portion of the left lobe of the proposed Project footprint.	Requesting to know why this section of the project footprint was not visited to the extent that other locations within the SSA, and LSA were visited.
SAR-10	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	Terrestrial Environment Baseline Update Report (November 13, 2020); 4.2.2.2 Crepuscular and Nocturnal Surveys & 4.3 Modelling & 7.4.1 Eastern Whip-poor-will	Specific to Eastern Whip-poor-will (EWPW), in addition to the surveys, it is recommended that habitat be mapped through an aerial imagery review to inform the evaluation of Project for suitable habitat. Suitable (breeding and foraging) habitat typically includes some combination of: <ul style="list-style-type: none"> - Sparse (<25%) to moderate (25-75%) tree cover (e.g., deciduous, mixed wood, coniferous, treed wetlands) and open habitat (e.g., shrublands, fallow fields, regeneration following fires or clearcuts, rock and sand outcrops, shrubby wetlands); - Sparse to moderate shrub and herbaceous cover; and - Well-drained soils (e.g., sand, sandy-loam). <p>For more information on suitable habitat for EWPW, refer to:</p>	Requesting that the proponent undertakes potential EWPW habitat mapping for the SSA and RSA. Include that includes a description of how potential EWPW habitat will be mapped.

			<ul style="list-style-type: none"> - Recovery Strategy for the Eastern Whip-poor-will (<i>Antrostomus vociferus</i>) in Ontario (MECP 2019) - Eastern Whip-poor-will General Habitat Description (Ontario 2013) - Home Range Use, Habitat Selection, and Stress Physiology of Eastern Whip-poor-wills (<i>Antrostomus vociferus</i>) at the Northern edge of their Range (Rand 2014) 	
SAR-11	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	Terrestrial Environment Baseline Update Report (November 13, 2020); 4.2.2.4 Crepuscular and Nocturnal Surveys	<p>The Baseline Report indicates that six acoustic recorders were deployed in June. After this, the acoustic recorders were moved from their original locations, and two (2) more were added. It is unclear why some recorders were moved. MECP has concerns on whether or not this would impact the data gathered from the recorders.</p> <p>Furthermore, Figure 4 illustrates the new locations of the recorders, but does not reference where the original locations were.</p>	No actions are required at this time. However, please note that more information regarding the placement of the acoustic recorders may be requested subsequent to the EA in support of an ESA authorization, should an authorization be required.
SAR-12	N/A	Terrestrial Environment Baseline Update Report (November 13, 2020); 4.2.3.1 Bats & 7.5.1 Northern Myotis and Little Brown Myotis	This section should include a reference to Figure 7 to refer the reader to a map of the roosting survey transects.	Please refer readers to map Figure 7 to view roosting survey transects in this section.
SAR-13	N/A	Terrestrial Environment Baseline Update Report (November	This table should include a reference to Figure 14 to direct the reader to a map of the alphanumerically labelled water bodies.	Please refer readers to Figure 14 to view a map of the surveyed waterbodies with labelling

		13, 2020); 4.2.4 Reptiles and Amphibians Table 4		that coincides with information in Table 4.
SAR-14	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	Terrestrial Environment Baseline Update Report (November 13, 2020); 4.3 Modelling & 7.5.1 Northern Myotis and Little Brown Myotis	Specific to little brown myotis and northern myotis, it is recommended that high potential bat maternity habitat be modelled using the Forest Resources Inventory (FRI) following accepted Ecological Land Classification (ELC) codes to inform the evaluation of the Project SSA, LSA, and RSA. For northern Ontario/Boreal forest these include: <ul style="list-style-type: none"> • G/B015-019 Very Shallow: Dry to Fresh: Mixed wood/hardwood • G/B023-028 Very Shallow: Humid: Conifer/Mixed wood • G/B039-043 Dry, Sandy: Hardwood/Mixed wood • G/B054-059 Dry to Fresh: Coarse: Mixed wood/Hardwood • G/B069-076 Moist, Coarse: Mixedwood/Hardwood • G/B087-092 Fresh, Clayey: Mixed wood/hardwood • B103-108 Fresh, Silty to Fine Loamy: Mixed wood/Hardwood • B118-125 Moist. Fine: Mixed wood/Hardwood • B130-133: Swamps <p>*this guidance was taken from the draft bat technical note.</p>	Please include a map highlighting areas of high potential bat maternity roost habitat as per direction at left. Please provide a table that quantifies the available bat maternity roosting habitat in the SSA, LSA, and RSA. If the proponent does not have a copy of the draft bat technical note, please advise and MECP can provide it.
SAR-15	N/A	Terrestrial Environment Baseline	"Figure 29. Number of passes of little brown myotis at each acoustic recorder deployment at the Marathon	Please update the figure and provide it to MECP for review.

		Update Report (November 13, 2020); 7.5.1. Northern Myotis and Little Brown Myotis Figure 29	Palladium Project study area in 2020” currently shows a figure of the bird and insect species observed, not bats. When the figure is updated, please ensure that the figure shows the location of each acoustic monitor and the number of bats by species recorded at each monitor.	
SAR-16	N/A	Terrestrial Environment Baseline Update Report (November 13, 2020); Woodland Caribou Page 57	Section heading number is missing; Also, please update this Section’s heading to remove “woodland” from the title as the Ontario naming convention for this species is now “Caribou (boreal population)”. Please ensure that all references to caribou within the document are consistent with this.	Please update section heading number to 7.5.2 and edit the name.
SAR-17	EIS Guidelines 2.6.1.8 Wildlife	Terrestrial Environment Baseline Update Report (November 13, 2020); Woodland Caribou Page 57	It is noted that no evidence of caribou use was found during 2020 fieldwork in June, July, and August. It is possible that caribou observations were missed given that summer is a challenging time to observe caribou or their signs, also given that the field work occurred on foot, and that it is not clear how much ground was covered within the SSA/LSA as compared to the area not covered by the survey efforts. Conducting winter track surveys either from the air or on the ground (or both) would have been preferable in an effort to understand caribou use in the SSA/LSA.	No actions are requested at this time. However, please note that further surveys may be requested subsequent to the EIS in support of an ESA authorization, should an authorization be required.
SAR-18	EIS Guidelines 2.6.1.8 Wildlife	Terrestrial Environment Baseline Update Report (November	Overall, detail is lacking in the summaries of aerial survey work that have occurred between 2013 and 2020. The reader cannot form a solid understanding of the study area sizes, whether the Project area was flown over, methodology employed to conduct	Requesting a more detailed summary of past survey efforts including all the information sought in the column at left.

		13, 2020); Woodland Caribou Page 57	the surveys, time of year flown, evidence collected during the surveys, etc. The brief synopsis of caribou surveys undertaken between 2013-2020 is not sufficiently detailed to give the reader a baseline understanding of caribou in the SSA, LSA, or RSA.	
SAR-19	EIS Guidelines 2.6.1.8 Wildlife	Terrestrial Environment Baseline Update Report (November 13, 2020); Woodland Caribou Page 57	It is unclear whether the four aerial surveys described in the beginning of the third paragraph (which occurred between 2013-2020), are the same or different surveys as the ones later described in the same paragraph (which occurred in 2003, 2004, 2019, and 2020).	Requesting clarity on whether this paragraph is describing the same four surveys and that the years are correct or whether more than four surveys occurred overall between 2003-2020. Requesting a table outlining all surveys, details about the surveys (i.e. transect spacing, observations, crucial methods, etc), with embedded figures of survey area.
SAR-20	EIS Guidelines 2.6.1.8 Wildlife:	Terrestrial Environment Baseline Update Report (November 13, 2020); Woodland Caribou Page 57	This section is lacking map figures of caribou observations in the SSA, LSA, RSA from all available data sources (e.g. Natural Heritage Information Centre, iNaturalist, local contacts, etc.). These observations should be shown on the map(s) and uniquely identified by year or grouping of years such as by decade.	Requesting maps described in column at left.

SAR-21	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	Terrestrial Environment Baseline Update Report (November 13, 2020); Woodland Caribou Page 57	<p>There is a lack of information provided on the proximity of the project to Category 1 High Use Areas (Nursery Areas, Winter Use Areas) in the Lake Superior Coast Range (LSCR). A more thorough description of the nearby Category 1 HUA in an accompanying figure is needed.</p>	<p>Requesting more detail and figure of Cat 1 HUAs in the SSA/LSA/RSA.</p>
SAR-22	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	Terrestrial Environment Baseline Update Report (November 13, 2020); Woodland Caribou Page 57	<p>An in-depth description of the LSCR, policy context and, as preciously mentioned, caribou occupancy (historical and contemporary) within it is lacking.</p> <p>This should include a description of the policy context tied to the Caribou Conservation Plan (CCP) including:</p> <p>The conservation vision: <i>Self-sustaining caribou populations in a healthy boreal forest.</i></p> <p>The conservation goal: <i>To maintain self-sustaining, genetically-connected local populations of Woodland Caribou (forest-dwelling boreal population) where they currently exist, improve security and connections among isolated mainland local populations, and facilitate the return of caribou to strategic areas near their current extent of occurrence.</i></p> <p>Specific to the LSCR: <i>4.1.4 The Lake Superior coastal population will be managed for population security and persistence. The focus will be to protect and manage habitat and</i></p>	<p>Requesting more contextual detail of the LSCR as well as the CCP vision/goals for the LSCR.</p>

			<i>encourage connectivity to caribou populations to the north.</i>	
SAR-23	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	Terrestrial Environment Baseline Update Report (November 13, 2020); Woodland Caribou Page 57	Section is lacking a detailed description and a figure illustrating the project footprint in relation to the LSCR boundaries. Discussion should include how close (in km or metres that the project footprint is to the mainland Range boundary). A figure should include a zoomed in view of the Project area in relation to the mainland Range boundary as well as the Lake Superior coastline. It should include all human infrastructure in the vicinity (e.g. roads, pipelines, hydro lines, railways, communities). It should also include an inset map of the broader area at the level of the LSCR.	Requesting more detail and a figure of the LSCR boundaries in the vicinity of the project footprint as described in column at left.
SAR-24	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	Terrestrial Environment Baseline Update Report (November 13, 2020); Woodland Caribou Page 57	Please include an analysis of existing potential caribou habitat, particularly winter and refuge habitat*, within the SSA and LSA. Include tables showing metrics and accompanying discussion. Please include figures of potential caribou habitat in the SSA and LSA. *The proponent may require access to the FRI and the Ontario Landscape Tool (OLT) from the Ministry of Natural Resources and Forestry (MNR).	No action requested for this comment, as it is addressed in EIS addendum.
SAR-25	EIS Guidelines 2.3.5 Spatial Boundaries 2.6.1.8 Wildlife:	Terrestrial Environment Baseline Update Report (November 13, 2020);	This section is lacking descriptions of the caribou contextual picture within the SSA, and LSA based on current conditions from desktop analysis and fieldwork results including habitat and connectivity potential, existing disturbance, predator and alternative-prey documented, etc. Tie in details found in other sections such as:	Requesting a more robust contextual analysis of the SSA and LSA based on desktop analysis and fieldwork results.

	Species at Risk	Woodland Caribou Page 57	<ul style="list-style-type: none"> • the text in 5.1.3 about the abundance of reindeer lichen (<i>Cladonia spp.</i>) in the SSA and the opinion that the SSA may be suitable winter habitat; • pockets of old growth conifer forest stands within the LSA/SSA, including the size (in ha) • predator and alternative prey presence (e.g. trail camera evidence in section 6.4 – abundance of wolves, bears, and moose). • intra-range connectivity that the proposed Project area may currently provide for mainland caribou within the LSCR. • 	
SAR-26	N/A	Terrestrial Environment Baseline Update Report (November 13, 2020); Appendix 3	The text above the table indicates the table is sorted by Class first, but Class is not included in the table.	No action required.
SAR-27	N/A	Terrestrial Environment Baseline Update Report (November 13, 2020); Appendix 4	It is unclear how this table is organized/sorted. It is time-consuming for the reader to review the table and get a sense of how many observations for a particular species were observed in a particular year.	No action requested.
SAR-28	N/A	Terrestrial Environment Baseline Update Report (November 13, 2020); Appendix 14	The paragraphs and spreadsheet do not include 2020 EWPW field survey information that is described in the methods section and results section for EWPW, etc.	Update sections accordingly.

SAR-29	N/A	Terrestrial Environment Baseline Update Report (November 13, 2020); Appendix 14	Methods of the EWPW survey were included in the appendices but not for the other surveys undertaken (i.e., 2020 songbird point counts, etc.).	Please include all survey methods used in the Appendix.
SAR-30	N/A	Aquatic Environment Baseline Update Report (November 13, 2020); General	MECP SARB is not aware of being provided an opportunity to comment/input on the 2020 fieldwork plans in support of the EIS addendum. As a result, there is a risk that MECP SARB may deem aspects of the 2020 fieldwork insufficient in support of the determination of project impacts on SAR and/or their habitat that may be present in the SSA, LSA, or RSA. This may also have implications for potential ESA permitting, if applicable, and the proponent may be requested to conduct more field surveys.	No actions are requested at this time. However, please note that further surveys may be requested subsequent to the EA in support of an ESA authorization, should an authorization be required.
SAR-31	2.3.4 Valued Ecosystem Components 2.6.1.8 Wildlife: Species at Risk	Aquatic Environment Baseline Update Report (November 13, 2020); General MARATHON PGM-Cu Project Site – Aquatic Resources Baseline Report, prepared by EcoMetrix	The 2020 terrestrial baseline report points its readers to the 2020 aquatic baseline report for information related to aquatic species at risk including Lake Sturgeon. However, having reviewed the 2020 aquatic baseline report, SAR Lake Sturgeon are only briefly mentioned, and the reader is directed to the original baseline report from 2012 for any further detail. The detail provided in the 2020 report related to the baseline conditions of potential SAR or their habitat in the vicinity of the Project is insufficient. The field surveys, and much of the data provided in the 2012 report in relation to aquatic SAR is considered dated. Lake Sturgeon (Great Lakes – Upper St. Lawrence populations) are now listed as Endangered (they were Threatened when the 2012 baseline report was received) and are known to use the Pic River system	Requesting that all applicable SAR species are discussed as part of the aquatic baseline assessment.

		<p>Inc. for Stillwater Canada Inc., July 2012.</p>	<p>with suitable spawning and/or foraging habitat in locations such as:</p> <ul style="list-style-type: none"> • “lower rapids” of the Pic River within the Project boundary • Lower Falls on the Kagiano River • Manitou Falls on the Pic River • Kama River <p>See the following links as possible information sources:</p> <ul style="list-style-type: none"> • Ecclestone, A. 2012. Movement patterns, habitat utilization, and spawning habitat of Lake Sturgeon (<i>Acipenser fulvenscens</i>) in the Pic River, a northeastern Lake Superior tributary in Ontario, Canada. Master’s Thesis. Trent University. • Ecclestone, A. 2020. Seasonal use of two unregulated Lake Superior tributaries by Lake Sturgeon. <i>Journal of Great Lakes Research</i>, 46, 1369-1381. • COSSARO. 2017. Ontario Species at Risk Evaluation Report for Lake Sturgeon: <u>COSSARO Candidate V, T, E Species Evaluation Form - Oct (cossaroagency.ca)</u> • <u>https://www.fws.gov/midwest/sturgeon/omnrils-02assmts.htm#Pic%20River</u> • Schloesser, Joshua & Quinlan, Henry & Pratt, Tom & Baker, Ed & Adams, Jean & Mattes, William & Greenwood, Susan & Chong, Steve 	
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SAR-32	N/A	General comment for EIS Addendum	For consistency with up-to-date nomenclature, the EIS Addendum should reference Caribou, Boreal population (<i>Rangifer tarandus</i>) as it is listed on the Species at Risk in Ontario (SARO) List (O. Reg. 230/08 under the ESA).	Replace references to 'woodland caribou' with 'caribou (boreal population)' or 'caribou'.
SAR-33	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	General comment for EIS Addendum Species at Risk Chapter and Appendix D9	<p>A description of where caribou have been observed within the LSCR and in relation to the Project has not been adequately provided. This would include a map of all available caribou observations from MECP, MNRF, and other available sources. This is a requirement of the EIS Guidelines (page 39). This information provides important context of the historical occupancy as well as more recent and current occupancy and potential trends of the population.</p> <p>Comment is also described in MECP SARB's comments on the Baseline Reports.</p>	Requesting a detailed description of caribou observations within the LSCR and a map as outlined in the EIS Guidelines (page 39).
SAR-34	EIS Guidelines	General comment for EIS	A description of all historical caribou survey efforts within the LSCR including all MNRF surveys and any other surveys that the Proponent is aware of	Requesting an updated description of caribou historical survey efforts

	2.6.1.8 Wildlife: Species at Risk	Addendum Species at Risk Chapter and Appendix D9	<p>has not been provided. This would include map figures depicting the survey areas.</p> <p>Please see comment described above in MECP SARB's comments on the Baseline Reports for more details outlining what SARB is seeking.</p>	<p>within the LSCR and a map.</p>
SAR-35	EIS Guidelines 2.1.2 Legal Framework and Role of Government	1.3.4 Regulatory Approvals Table 1.3-3 Page 1.20	<p>The table currently lists the MNRF as the responsible agency for the <i>Endangered Species Act, 2007</i>, which is no longer correct.</p> <p>Caribou are listed as the only species that may require an ESA permit. This is not necessarily accurate as there are other SAR species that may be impacted by the Project and may require an ESA permit following the EA process.</p>	<p>Please update the table to reflect that the MECP is the responsible Ministry for the administration of the ESA.</p> <p>Please update the table to reflect that other SAR may require an ESA permit or that caribou is singled out just as an example.</p>
SAR-36	EIS Guidelines 2.6.1 Physical and Biological Environment	6.2.6.6.1 Change to Forest Cover Figure 6.2.4-4 Page 6.263	<p>Figure 6.2.4-4 contains a number of legend items that are written in code/jargon; the figure is not adequately described within the body of the section.</p>	<p>Requesting modification to the legend on Figure 6.2.4-4 to provide clarity on what vegetation or landcover types will be present on the mine site following closure. Also, please describe Figure 6.2.4-4 in the body of the section and provide a citation to the Figure (e.g. see Figure 6.2.4-4). This is standard practice that is applicable to all figures and tables.</p>

SAR-37	EIS Guidelines 2.7.1.5 Determination of the Significance of Residual Effects	6.2.8.1.1 Assessment of Residual Effects of Original EIS Page 6.329	Incomplete sentence in the 4 th bullet: “...during operations and after c” MECP SARB seeks clarity on this sentence/statement fragment to understand the context.	Requesting that the sentence/statement be completed.
SAR-38	EIS Guidelines 2.7.1.5 Determination of the Significance of Residual Effects	6.2.8.1.2 Determinatio n of Significance in Original EIS Page 6.330	While this Section is a high-level summary of the original results of the SAR assessment (including caribou), the sentence: <i>There are ample ways for caribou to by-pass or traverse the site and loss of potential connectivity is reversible at decommissioning; proposed off-site mitigation will create an overall benefit to woodland caribou.</i> is not substantiated by a reference or an assessment within this Chapter.	Requesting clarity on how this conclusion was determined. A reference to supporting documentation or further clarification within this Section is needed.
SAR-39	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.3 Regulatory and Policy Setting Page 6.331	MECP SARB is seeking elaboration and substantiation of the Proponent’s suggestion that: <i>“... in the absence of specific management direction for woodland caribou in the coastal and discontinuous range (e.g., MNR 2018), the FMP [Pic Forest Management Plan] represents the most important provincially- approved habitat management direction for woodland caribou [in the LSCR], as well as other SAR.</i>	Requesting details that substantiate the statement that the FMP is “the most important provincially approved habitat management direction for caribou” in the LSCR.
SAR-40	EIS Guidelines	6.2.8.1.6 Assessment Boundaries	MECP SARB is of the opinion that the EIS Addendum SSA and LSA were appropriately scaled	Requesting further clarity of the text “based on federal

	2.3.5 Spatial Boundaries	Page 6.335	<p>for the study and assessment of impacts on caribou in the vicinity of the Marathon Palladium Project. However, the rationale supporting the change of the revised EIS Addendum RSA for caribou (as compared to the original EIS RSA) is insufficient:</p> <p><i>Based on federal direction, the RSA for woodland caribou is the Lake Superior Coast Range (LSCR) plus a 10 km buffer into the zone of discontinuous distribution (Lake Superior Uplands Linkage).</i></p> <p>The new RSA in comparison to the previous RSA is substantially different and much smaller. Without further explanation regarding the RSA sizing change, MECP SARB is not supportive of the RSA change. MECP SARB prefers the former RSA that included the LSCR and full DD. An RSA that encompasses the LSCR and DD is an appropriate scale to assess habitat connectivity through the DD to the northern Ranges, as per the CCP.</p>	<p><i>direction</i>” so that MECP SARB can better understand the rationale supporting this significant reduction in the RSA size.</p> <p>Note that MECP SARB strongly prefers the original RSA that includes the LSCR and full DD.</p>
SAR-41	EIS Guidelines 2.7.1 Approach to the Effects Prediction, Mitigation Measures and Significance of Residual Effects	Table 6.2.8-2 Characterization of Residual Effects on Species at Risk Page 6.339	Regarding the first row under the “Description” column, what temporal scale is defined as “long-term” as it relates to caribou? Might there be a different temporal scale assigned to the use of the term “long-term” depending on the SAR?	Requesting clarity on the definition of “long-term” in this context for MECP SARB to understand the evaluative parameters.
SAR-42	EIS Guidelines	6.2.8.4 Existing Conditions for	Section excerpt:	See MECP SARB’s comment table related for the Terrestrial Baseline

	2.6.1.8 Wildlife: Species at Risk	Species at Risk Page 6.340	<i>Existing conditions are described in Chapter 4 of the EIS Addendum (Vol 1) (CIAR #727). The updated terrestrial baseline report (Northern Bioscience, 2020) (CIAR #722)</i> See MECP SARB's comment table above for the Terrestrial Baseline Addendum Report.	Addendum Report for requests.
SAR-43	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.9 Woodland Caribou Page 6.346	The direction surrounding the applicability of a cumulative disturbance analysis in the LSCR provided by MECP SARB staff to the Proponent in 2020 remains unchanged: <i>"While it is well understood that both anthropogenic and natural disturbance are important considerations when assessing impact to caribou and their habitat, the Range Management Policy [MNR 2014c] does not apply to the LSCR [Lake Superior Coast Range]. As such, the application of Principle 1 – Cumulative Disturbance (i.e., natural and anthropogenic disturbances + 500 metre buffer) also does not apply to this Range under Ontario's caribou policy framework (i.e., Caribou Conservation Plan)." (Green pers. comm. 2020)</i>	No action requested.
SAR-44	N/A	6.2.8.1.9 Woodland Caribou: Project Pathways Page 6.348	Section references a news article on the local media website (SooToday 2021) indicating that caribou have been sighted in 2020. MECP SARB has reviewed the article referenced and cannot find reference to sightings in 2020.	Requesting that the reference be updated to reflect the correct article.
SAR-45	N/A	6.2.8.1.9 Woodland Caribou	The numbering for this particular Section seems to be out of sync with the rest of the document.	Suggest updating the section number for consistency.

		Mitigation and Enhancement Measures Page 6.348-349		
SAR-46	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p> <p>2.7.1.2 Mitigation Measures</p> <p>2.7.1.3 Compensation</p>	<p>6.2.8.1.9 Woodland Caribou</p> <p>Mitigation and Enhancement Measures</p> <p>Page 6.348-349</p>	<p>The following comments are related to the list of Mitigation and Enhancements Measures provided in this section:</p> <ol style="list-style-type: none"> 1) It is not clear what constitutes “<i>appropriate locations</i>” of slash piles that will be used to disrupt predator line-of-sight and efficiency of movement. 2) Clarity is needed on whether all areas that <u>can</u> be rehabilitated to conifer forest <u>will</u> be and in accordance with the following recommendations: <ul style="list-style-type: none"> (a) site preparation and planting of jack pine or spruce at a minimum density of 1000 stems per hectare; or, (b) site preparation and aerial seeding of jack pine at 20,000 viable seeds per hectare; or (c) implement alternate site renewal treatments to return it to a forested condition that reflects the original stand. 3) A map depicting the site mitigation/rehabilitation locations for caribou should be included. 4) With respect to the hydro line, MECP SARB suggests including line-of-site breaks within the right-of-way to discourage potential predator-prey encounters. 5) Lacking references to specific best management practices (BMPs) that will be applied for the Project from Ontario’s <i>Best Management Practices for Mineral Exploration and Development Activities and Woodland Caribou</i> 	<p>Requesting the following:</p> <ol style="list-style-type: none"> 1) More clarity is needed on what constitutes “<i>appropriate locations</i>” of slash piles such as distance between slash piles, expected height of piles, etc. 2) Clarity is needed on whether all areas that can be rehabilitated to conifer forest will be. 3) Provide a map depicting the locations of site mitigation/rehabilitation actions. 4) Confirm if this mitigative action will be taken and if yes, describe the details of how.

			<p><i>in Ontario</i> document: https://www.ontario.ca/page/best-management-practices-mineral-exploration-and-development-activities-and-woodland-caribou</p> <p>6) An estimate of the hectares within the SSA that will be rehabilitated to future caribou habitat is needed.</p> <p>7) It does not appear from this Section that the Proponent will seek to minimize sensory disturbance during the sensitive time periods associated with the nearby eastern lobe of the Caribou Category 1 High Use Area: May 1 to Sept 15 and Dec 1 to Mar 31. If the Proponent will be seeking to minimize sensory disturbance, please describe how sensory disturbance will be minimized – see BMPs for possible examples. At a minimum, MECP SARB recommends that Project commencement (i.e., clearing vegetation, grubbing, stripping, blasting, etc.) occur at a time of year outside of these sensitive time periods in an effort to allow caribou to either disperse away from the Project area or to habituate to the added sensory disturbance.</p>	<p>5) Reference all BMPs that will be employed for this Project.</p> <p>6) Provide an estimate on the hectares within the SSA that will be rehabilitated to future caribou habitat.</p> <p>7) Confirm whether the Proponent will abide by sensitive timing windows and if so, describe exactly how.</p>
SAR-47	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p> <p>2.7.1.2 Mitigation Measures</p>	<p>6.2.8.1.9 Woodland Caribou</p> <p>Off-Site Mitigation</p> <p>Page 6.350</p> <p>&</p>	<p>This section describes how the Proponent intends to implement their 2014 proposed off-site mitigation plan for caribou habitat rehabilitation in areas of the LSCR as well as within the Discontinuous Distribution (DD) in order to focus efforts on maintaining/creating connectivity linkages between the LSCR and more northerly Ranges in the Continuous Distribution (CD) as per direction in Ontario’s Caribou Conservation Plan (CCP).</p> <p><i>“To address potential cumulative effects on woodland caribou in the RSA, off-site mitigation</i></p>	<p>The following requests are documented in the joint MECP-MNRF Information Request dated June 25, 2021 (attached):</p> <p>(1) For broad context, in 2019, the responsibility for administering the <i>Endangered Species Act, 2007</i> was</p>

	<p>2.7.1.3 Compensation</p>	<p>CIAR#671</p>	<p><i>opportunities elsewhere in the LSCR and adjacent zone of discontinuous distribution were identified for woodland caribou following MNRF (2013) guidance. Options were developed in cooperation with MNRF Nipigon District and were presented in Northern Bioscience (2014). These mitigation opportunities were compared to the 2021-2031 Pic Forest FMU FMP to ensure that they remain consistent with current management direction, particularly with respect to road decommissioning objectives. Opportunities were identified in the Northern Bioscience (2014) remain valid and may be suitable to achieve overall benefit for woodland caribou in the LSCR.”</i></p> <p>It is suggested that the off-site mitigation may constitute overall benefit, which is a reference to legislative requirements associated with overall benefit permits under s. 17(2)(c) of the <i>Endangered Species Act, 2007</i> (ESA), which may be required to carry out the Project. It is premature for MECP SARB to comment at this stage about any future potential ESA authorization that may be required. Therefore, SARB has not evaluated the Project in relation to legislative requirements under the ESA in this review. If an ESA authorization is required following the environmental assessment process, actions proposed within an off-site mitigation plan may inform conditions of the ESA authorization. In addition, actions beyond the proposed off-site mitigation may be required.</p> <p>(1) It is noted that the Proponent chose to compare their off-site mitigation opportunities with the 2021-2031 Pic Forest FMP as a way of determining whether their proposed off-site mitigation from 2014 may be relevant in today’s</p>	<p>transferred from MNRF to MECP. As such, the MECP will be providing comments on the project’s potential impacts to SAR and/or their habitat, as well as any proposed mitigative actions. However, any habitat management actions that will occur on Crown land must be informed by MNRF. MECP SARB and MNRF request that the Proponent communicate directly with MECP SARB (from a policy perspective) and MNRF (from an implementation/operational perspective) on this matter in an effort to determine whether the proposed off-site mitigation plan will be effective in mitigating impacts to the caribou population and that</p>
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			<p>context. It is currently understood that Generation PGM has not engaged MECP SARB or MNRF in relation to previous concerns expressed for caribou and associated impacts/mitigation for this project. While MECP SARB supports the overarching concept of habitat restoration to enhance connectivity between the LSCR and northerly Ranges in the Continuous Distribution (CD), there are concerns that the Proponent has not done due diligence to ensure that their proposed off-site mitigation plan initially created in a 2014 context is achievable in today's context (i.e., significant declines in the caribou LSCR population state).</p> <p>(2) In addition, it is unclear to MNRF if the proposed mitigation is achievable recognizing current stakeholder interests in maintaining access roads and Indigenous communities' interests in the landbase. Further to this, although it is mentioned that the proposed mitigation appears to be consistent with the current FMP, it does not appear that discussions have occurred with the Sustainable Forest License (SFL) holder, nor have discussions occurred with MNRF regarding the implementation of the off-site mitigation plan.</p> <p>(3) MECP SARB notes that the Project footprint described in EIS Addendum Chapter 1, Section 1.6 Project Design Changes (page 1.65) has increased approximately 200 ha in size from 900 ha in the previous iteration of the EIS to 1,100 ha in the current EIS Addendum. The off-site mitigation plan has not been updated to reflect this increase in project footprint, and</p>	<p>it remains implementable.</p> <p>(2) Should the proposed off-site mitigation no longer suffice, and alternate measures need to be considered off-site and on Crown land, it is recommended that this be evaluated in the EIS Addendum because alternative mitigation on Crown land may trigger further <i>Environmental Assessment Act</i> (EAA) requirements.</p> <p>(3) MECP SARB is also seeking rationale as to why the 2014 proposed off-site mitigation has not been updated to reflect changes with respect to the LSCR caribou population and state of the range. Alternatively, MECP is requesting that the Proponent</p>
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			<p>corresponding impacts to caribou and their habitat, along with actions to mitigate.</p> <p>(4) MECP SARB has concerns that two of the four candidate locations selected in the 2014 proposed off-site mitigation plan for habitat restoration are not within the revised 2021 caribou Regional Study Area (RSA) – specifically portions of the “Vein Lake West” candidate location and the “Nama Creek” candidate location (see Figure 19 of the proposed off-site mitigation plan).</p>	<p>prepare an updated off-site mitigation plan that is reflective of the current LSCR caribou population and state of the range, in addition to project adjustments (i.e., increase footprint).</p> <p>(4) MECP SARB requires rationale to support the application of mitigative actions outside of the current RSA that can be reasonably considered mitigation for this Project.</p>
SAR-48	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p> <p>2.7.1.2 Mitigation Measures</p>	<p>6.2.8.1.9 Woodland Caribou</p> <p>Caribou Transfers and Penning</p> <p>Page 6.351</p>	<p>This section outlines possible local caribou translocations as well as penning, but the Proponent expresses that these approaches to population management are not being considered as mitigation.</p> <p>MECP SARB questions why these population management actions are outlined in the mitigation Section if they are not being considered as potential mitigation.</p>	<p>Suggest removing this section if these population management actions are not being proposed as mitigation for the Project.</p> <p>Note: Should an ESA authorization for caribou be required following the EA process, MECP SARB welcomes discussions with the</p>

				Proponent on potential overall benefit actions.
SAR-49	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk 2.7.1.2 Mitigation Measures	6.2.8.1.9 Woodland Caribou Predator/Prey Control Page 6.352	Similar to the previous comment, this section outlines possible wildlife population management actions that focus on predators and alternative prey species, but the Proponent expresses that these approaches are not being considered as mitigation. MECP SARB questions why these management actions are outlined in the mitigation Section if they are not being considered as potential mitigation.	Suggest removing this section if these wildlife population management actions are not being proposed as mitigation for the Project. Note: Should an ESA authorization for caribou be required following the EA process, MECP SARB welcomes discussions with the Proponent on potential overall benefit actions.
SAR-50	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.9 Woodland Caribou Project Residual Effect: Habitat Quality and Quantity Page 6/353	This Section says that there is: <i>“...no known calving areas... within 10km of the Project”</i> This statement is not accurate. A Category 1 Caribou High Use Area, as defined by Ontario’s General Habitat Description (GHD) for the Forest-dwelling Woodland Caribou (2013), is located less than 390 m from the Project site and is within the Project’s LSA. It consists of both a Nursery and Winter Use Area. This indicates that the area is used during both the summer and winter sensitive time periods. It is located immediately adjacent to the Project and is within 10 km defined by the GHD as being sensitive to certain activities or developments.	Requesting an analysis of the Project’s potential impacts on the adjacent Category 1 High Use Area. If impacts are identified, appropriate mitigation and enhancement measures should be described.

			GHD: https://www.ontario.ca/page/general-habitat-description-forest-dwelling-woodland-caribou	
SAR-51	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p> <p>2.7.1.2 Mitigation Measures</p>	<p>6.2.8.1.9 Woodland Caribou</p> <p>Project Residual Effect: Habitat Quality and Quantity</p> <p>Page 6/353</p>	<p>There are no definitions of what the Proponent considers caribou “<i>winter habitat (preferred/usable)</i>” as well as “<i>refuge habitat (preferred/used)</i>”.</p> <p>It is likely that this terminology originates from Ontario’s <i>Caribou Science and Information Package</i> (https://www.sdc.gov.on.ca/sites/mnrf-olt/en/SitePages/Home.aspx). However, this is not made clear in the Section. If this is the case, the term “used” should be updated to “useable” as these words are not interchangeable. The same word “used” was also used on Appendix Figure D9.1-1 and should be clarified/changed.</p>	<p>Request definitions of the terms caribou “winter habitat (preferred/ usable)” and “refuge habitat (preferred/used).</p> <p>Suggest updating Appendix Figure D9.1-1 and changing the word “used”.</p>
SAR-52	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p>	<p>6.2.8.1.9 Woodland Caribou</p> <p>Project Residual Effect: Habitat Categorization</p> <p>Page 6/354</p>	<p>Similar to comment 50, this Section does not adequately describe the Project in relation to the nearest Category 1 Caribou High Use Area – which as mentioned above, is both a Nursery and Winter Use Area. This geographic relationship is illustrated on Appendix figure D9.3-1 but is not fully described in the text.</p> <p>As per Ontario’s General Habitat Description (GHD) for caribou:</p> <p>Activities or development that is considered by the GHD as ‘generally not compatible’ include:</p> <ul style="list-style-type: none"> • Development activities that increase the cumulative disturbance* and loss of habitat within a Range, and negatively affect Range condition 	<p>The Proponent has not provided adequate justification as to why or how the Project will <u>not</u> impact the adjacent Category 1 High Use Area, particularly given the guidance set out in the GHD provided in the previous column. Therefore, MECP SARB is requesting an assessment of the Project as it relates to the adjacent Category 1 High Use Area.</p>

			<ul style="list-style-type: none"> • Development activities that result in sensory disturbance within 10 km of Category 1 High Use Areas, potentially displace caribou during sensitive periods: <ul style="list-style-type: none"> ○ Nursery Areas (May 1 to July 14 - very low tolerance, July 15 to September 15 - low tolerance) ○ Winter Use Areas (December 1 to March 31) <p>* Not applicable in the LSCR</p> <p>See the GHD for definitions and details about Category 1 High Use Areas – particularly Nursery Areas and Winter Use Areas.</p> <p>Based on the material above from the GHD, it is questionable on whether the Project is a compatible activity within the LSCR and the proximity to the nearest Category 1 High Use Area from a sensory disturbance perspective. The Proponent should provide justification on how this has been considered.</p> <p>MECP notes that caribou and the Project’s proximity to this Category 1 High Use Area with respect to sensory disturbance were not specifically assessed in the Acoustic Environment Chapter (6.2.2) or Acoustic Appendix (D2).</p>	
SAR-53	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.9 Woodland Caribou Project Residual Effect: Caribou	MECP SARB reiterates that previous direction surrounding the applicability of a habitat disturbance analysis in the LSCR provided by MECP SARB staff to the Proponent in 2020 remains unchanged. <i>“While it is well understood that both anthropogenic and natural disturbance are important considerations when assessing impact to caribou and their habitat, the Range</i>	No action requested.

		Habitat Disturbance Model Page 6/354	<p><i>Management Policy [MNR 2014c] does not apply to the LSCR [Lake Superior Coast Range]. As such, the application of Principle 1 – Cumulative Disturbance (i.e., natural and anthropogenic disturbances + 500 metre buffer) also does not apply to this Range under Ontario’s caribou policy framework (i.e., Caribou Conservation Plan).” (Green pers. comm. 2020)</i></p> <p>For this reason, MECP SARB will not be commenting on the ‘Caribou Habitat Disturbance Model’ analysis presented in this Section.</p>	
SAR-54	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p> <p>2.7.1 Approach to the Effects Prediction, Mitigation Measures and Significance of Residual Effects</p>	<p>6.2.8.1.9 Woodland Caribou</p> <p>Project Residual Effect: Caribou Survival</p> <p>Page 6/355</p>	<p>Full Section reads:</p> <p><i>“With appropriate mitigation, no adverse effects on woodland caribou survival are anticipated from the Project given the lack of documented historical or current use of the SSA by woodland caribou and the very low numbers of woodland caribou estimated to remain in the mainland LSCR.”</i></p> <p>This Section does not provide enough information to substantiate the opinion that the Project will have “no adverse effects” on caribou survival.</p>	<p>Requesting elaboration on this statement. Please provide any information available to substantiate this position.</p>
SAR-55	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife:</p>	<p>6.2.8.1.9 Woodland Caribou</p> <p>Project</p>	<p>This Section does not provide sufficient analysis of the impacts of the Project on connectivity for caribou movement and habitat use within the LSCR.</p>	<p>Requesting a more thorough assessment of effects to connectivity within the LSCR and the</p>

	<p>Species at Risk</p> <p>2.7.1 Approach to the Effects Prediction, Mitigation Measures and Significance of Residual Effects</p>	<p>Residual Effect: Caribou Movement</p> <p>Page 6/355</p>	<p>As per the EIS Guidelines (2011) for this Project, the EIS should be evaluating “the implications of Ontario’s CCP in relation to baseline data collection” in the context of the Project.</p> <p>Ontario’s CCP outlines the province’s policy intent for caribou within the LSCR which is: <i>‘The Lake Superior coastal population will be managed for population security and persistence. The focus will be to protect and manage habitat and encourage connectivity to caribou populations to the north’.</i> This connectivity is intended to improve persistence of the LSCR population. Above all, the CCP’s goal which applies to all caribou populations within Ontario is: <i>‘To maintain self-sustaining, genetically connected local populations of caribou (boreal population) where they currently exist, improve security and connections among isolated mainland local populations, and facilitate the return of caribou to strategic areas near their current extent of occurrence.’</i></p> <p>Furthermore, this Section indicates that the barrier to caribou movement caused by the Project will be reduced after the operation of the mine ceases (15 years after initial work commences) and site rehabilitation begins. This would be an inappropriate conclusion to draw as caribou generally avoid cleared land, recently planted land, and young forest. These types of habitats are much better suited to moose, deer, and their predators - wolves and black bears.</p>	<p>connectivity between the LSCR with Ranges to the north. This analysis would focus on connectivity (1) as it currently exists as well as (2) predicted connectivity with the addition of the Project on the landscape and (3) following mitigative actions taken on the Project site after the operational life of the mine.</p>
SAR-56	EIS Guidelines	6.2.8.1.9 Woodland Caribou	<p>This figure, taken from the Pic Forest Management Plan (FMP), should be more clearly explained within the Section given that the audience reading the EIS</p>	<p>Requesting clarity as to what Figure 6.2.8-5 is intended to illustrate</p>

	<p>2.6.1.8 Wildlife: Species at Risk</p> <p>2.7.1 Approach to the Effects Prediction, Mitigation Measures and Significance of Residual Effects</p>	<p>Project Residual Effect: Caribou Movement</p> <p>Figure 6.2.8-5: Pic Forest (2019-2029) Caribou Management Map, Including the Northern Continuous Range, Central Discontinuous Zone, and the Southern Coastal Range</p> <p>Page 6/357</p>	<p>may not be familiar with acronyms, codes, and terminology from FMPs that are used on the map.</p>	<p>relative to caribou in the LSCR and connectivity.</p>
SAR-57	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p> <p>2.7.1 Approach to the Effects</p>	<p>6.2.8.1.9 Woodland Caribou</p> <p>Project Residual Effect: Determination of Significance</p>	<p>The residual effects from the perspective of connectivity within the Range is not fully assessed.</p> <p>The impacts of sensory disturbance in the LSA were not clearly explored in the previous sections to substantiate the Proponent's opinion that there are so few caribou in the LSA and no documented recent use that sensory disturbances will not be significant. MECP SARB suggests there is a risk for potential functional impairment of the eastern lobe of the nearby Category 1 High Use Area caused by</p>	<p>Requesting additional information to substantiate the Proponent's determination that the Project's residual effects are 'not significant' to caribou.</p>

	<p>Prediction, Mitigation Measures and Significance of Residual Effects</p>	<p>Page 6.358</p>	<p>sustained sensory disturbance of the Project that has not been fully evaluated.</p> <p>In MECP SARB's view, the EIS Addendum and updated Terrestrial Background Report are lacking a comprehensive summary of historical caribou use and survey effort in the SSA, LSA, and RSA up until present day. Furthermore, MECP SARB notes that the scope of recent fieldwork undertaken to inform this EIS Addendum was limited geographically and temporally with respect to caribou.</p> <p>Without a broader understanding of (1) caribou use within the SSA/LSA/RSA through either more survey effort (i.e., aerial surveys, winter track counts by air/ground, GPS collaring) <u>or</u> a more in-depth chronology of previous survey efforts (as per comments for the updated Terrestrial Background Report) and existing caribou observations from surveys and incidental, as well as (2) a detailed connectivity analysis within the LSCR as well as between the LSCR and Ranges further north, MECP is unable to comment on whether the Project will have residual effects on caribou that are considered '<i>not significant</i>', like the EIS Addendum surmises.</p> <p>The caribou assessment presented in this EIS Addendum makes an argument that there are very few caribou in the LSCR at present to be effected by the Project and that the Project footprint (SSA) is not ideal caribou habitat (due to being largely previously disturbed) so the impact is likely insignificant. MECP SARB's view is that these issues signal that a serious effort is needed to mitigate and offset the Project in the context of the</p>	
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			<p>LSCR's current fragile state in both the short-term and the long-term. This approach aligns with goal of Ontario's CCP to:</p> <p><i>To maintain self-sustaining, genetically connected local populations of caribou (boreal population) where they currently exist, improve security and connections among isolated mainland local populations, and facilitate the return of caribou to strategic areas near their current extent of occurrence.</i></p> <p>Consider the following excerpt from Shuter <i>et al.</i> (2017) following their 2016 aerial survey: <i>With "Low densities at which caribou generally occur (Cumming et al. 1996; Environment Canada 2012), it's clear that the absence of caribou observations from any given area within the surveyed portions of the study area cannot be interpreted as proof that caribou were actually absent from these areas.</i></p> <p><i>Most of the caribou sign observations recorded on the mainland during the 2016 aerial survey were located very close (i.e., <1 km) to the Lake Superior shoreline, but tracks from one group of caribou were detected 4-7 km from the Lake Superior shoreline, in the low density stratum. This indicates that while caribou may occur at higher densities close to the Lake Superior coast, there is evidence for caribou presence in areas farther inland."</i></p>	
SAR-58	EIS Guidelines	6.2.8.1.9 Woodland Caribou	MECP SARB would prefer if this Section tied the conclusions of determinization of significance back to Tables 6.2.8-1 (pg. 6.332) and 6.2.8-2 (pg. 6.339-340) as well as to the bullets in Section 6.2.8.1	Requesting tables that present the evaluation criteria along side the assessment findings to

	<p>2.6.1.8 Wildlife: Species at Risk</p> <p>2.7.1 Approach to the Effects Prediction, Mitigation Measures and Significance of Residual Effects</p>	<p>Project Residual Effect: Determinatio n of Significance</p> <p>Page 6.358</p>	<p>‘Significance Definition’ to demonstrate clearer ties to the evaluation process laid out in the tables and Section 6.2.8.1. Aspects of these tables and Section 6.2.8.1, such as magnitude, timing, frequency, duration, ecological and socio-economic context, were not sufficiently evaluated.</p>	<p>clearly illustrate the full path to the final determination of significance.</p>
SAR-59	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p> <p>2.7.1 Approach to the Effects Prediction, Mitigation Measures and Significance of Residual Effects</p>	<p>6.2.8.1.17 Lake Sturgeon Project Residual Effect: Changes in Water Quantity Page 6.381 &</p> <p>Changes in Water Quality Page 6.382</p>	<p>Between these two Sections, it is not clear whether all three subwatersheds described (101,102,103) that report/flow to the Pic River will be restored from the water management pond (WMP) in the Mine Rock Storage Area (MRSA):</p> <ul style="list-style-type: none"> - The ‘Changes in Water Quantity’” Section described restoring flow to the Pic River by way of subwatershed 101 from the WMP during the closure phase. - The ‘Changes to Water Quality’” Section describes restoring flow from subwatersheds 102 and 103 from the MRSA (which includes the WMP) to the Pic River during the closure phase. 	<p>Requesting clarity on whether all three subwatersheds will be restored at closure.</p>

SAR-60	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p>	<p>6.2.8.1.10 Little Brown Myotis and Northern Myotis</p> <p>Page 6.358</p>	<p>Tri-coloured Bat (<i>Perimyotis subflavus</i>) is listed on the SARO List (O. Reg. 230/08 under the ESA) as an endangered species and as such, it receives species and habitat protection under the Act.</p> <p>Please consider Tri-colored Bat and its habitat, as per Layng et al. 2019, as possibly being present in the SSA, LSA, and RSA. Recent literature suggests that Tri-coloured Bat may be found at more northern latitudes than previously thought and therefore should be considered.</p> <p>Citation:</p> <p>Amanda M Layng, Amanda M Adams, Derek E Goertz, Kyle W Morrison, Bruce A Pond, R Dean Pheonix. (2019). Bat species distribution and habitat associations in northern Ontario, Canada. <i>Journal of Mammalogy</i>, Volume 100, Issue 1, 28 February 2019, Pages 249–260, https://doi.org/10.1093/jmammal/qyz006</p>	<p>Requesting that Tri-coloured Bat be considered as having the potential to occur within the project area.</p>
SAR-61	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p>	<p>6.2.8.1.10 - Roosting Habitat</p> <p>Page 6.359</p>	<p>The EIS Addendum 2 references that bat maternity colonies are found in the following treed ecosites: B015-019, B023-028, B039-043, B054-059, B069-076, B087-092, B103-108, and B118-125. Reference to code “B130-133” has not been included. Please see below for the entire list of ecosite codes.</p> <p>The following nine (9) codes apply for determining potential maternity sites for Little Brown Myotis, Tri-coloured Bat and Northern Myotis within the boreal forest ecozone:</p> <ul style="list-style-type: none"> • G/B015-019 Very Shallow: Dry to Fresh: Mixedwood/hardwood 	<p>Requesting a table outlining the amount of habitat per ecosite in the SSA, LSA and RSA.</p> <p>Provide a figure illustrating the distribution of these ecosites across the SSA and LSA.</p>

			<ul style="list-style-type: none"> • G/B023-028 Very Shallow: Humid: Conifer/Mixedwood • G/B039-043 Dry, Sandy: Hardwood/Mixedwood • G/B054-059 Dry to Fresh: Coarse: Mixedwood/Hardwood • G/B069-076 Moist, Coarse: Mixedwood/Hardwood • G/B087-092 Fresh, Clayey: Mixedwood/hardwood • B103-108 Fresh, Silty to Fine Loamy: Mixedwood/Hardwood • B118-125 Moist. Fine: Mixedwood/Hardwood • B130-133: Swamps 	
SAR-62	<p>EIS Guidelines</p> <p>2.6.1.8 Wildlife: Species at Risk</p>	<p>6.2.8.1.10 – Roosting Habitat</p> <p>Page 6.359</p>	<p>“All known myotis maternity roosts in boreal Ontario have been in anthropogenic structures such as buildings; no natural maternity roosts in trees have been documented. Many of the tree species used in studies in central and southern Ontario are not present at the Project site, i.e., pine, ash, oak, maple, large-toothed aspen”. While studies related to maternity roosting in treed landscapes in the boreal ecozone of Ontario are limited, there is no information to suggest that bats are not using these habitats for maternity roosting. Studies have been conducted outside of Ontario in similar boreal landscapes, and found large maternity networks utilizing treed landscapes in the boreal ecozone.</p> <p>Citation:</p> <p>Cory R. Olson and Robert M.R. Barclay. (2013). Concurrent changes in group size and roost use by reproductive female little brown bats (<i>Myotis lucifugus</i>). Canadian Journal of Zoology. Volume 91, Pages 141-155, Hyperlink.</p>	<p>Requesting more information on potential maternity roosting habitat for SAR bats</p>

SAR-63	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.10 – Roosting Habitat Page 6.360	<p>More information is required regarding the modelling for potentially suitable maternity roosting sites for SAR bats. The modelling used a minimum of 80 years of age and at least 10% cover of trembling aspen were considered potentially suitable maternity roost habitat.</p> <p>Potentially suitable maternity roosting sites should be classified using appropriate ecosite codes, and all appropriate ecosites should be considered as potential maternity roosting sites. Tree age and the percent of trembling aspen are not limiting factors for determining potential SAR bat maternity roosts. More recent guidance (MNRF, 2017) on determining potential maternity roosts for bats does not limit areas based on tree age class.</p>	<p>Requesting more information that considers <u>all</u> potential SAR bat maternity roosting habitat within the project area</p>
SAR-64	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.10 – Roosting Habitat Page 6.361	<p>The active window for SAR bats in northern Ontario has been identified as May 15 through August 31 in the EIS Addendum 2.</p> <p>The active window for SAR bats in northern Ontario is May 1 through August 31.</p>	<p>Requesting that the timing window be updated with the appropriate dates for SAR bats.</p>
SAR-65	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.10 - Habitat Loss Page 6.363	<p>The EIS Addendum 2 notes: “If limited clearing must be done during this window, bat maternity surveys using the current MECP protocol would be used to confirm bat presence/absence in suitable trees (e.g., large diameter cavity trees) and appropriate protection measures applied.”</p> <p>MECP SARB has concerns with this approach. More information is needed regarding the definition of “limited clearing”. Any tree clearing within appropriate habitat for SAR bats (i.e., ecosites listed above) within the active window for bats may have the potential for adverse impacts on SAR bats.</p>	<p>Requesting more information on tree clearing (timing, scale, etc.), as well as more information on how MECP SARB may be consulted.</p>

			It is recommended that MECP SARB be consulted prior to undertaking tree removals within that active timing window for SAR bats to determine if an authorization under the ESA may be required.	
SAR-66	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.10 – Habitat Loss Page 6.363	<p>Installation of bat boxes should also consider factors such as: height above the ground (higher bat boxes may reduce predation (Bat Conservation International, 2021)), clearing branches below the bat box to provide an appropriate landing spot, potentially trimming nearby branches to limit predation risk by raptors, and installing guano trays for monitoring purposes.</p> <p>How will other SAR bat species, that do not utilize bat box habitat as readily like Little Brown Myotis, be considered? Forest dwelling bats, like Northern Myotis, may utilize artificial structures such as bark poles. Bark poles are artificial bark that mimic the exfoliating bark that are often selected as maternity roost sites by tree roosting bats.</p> <p>An authorization under the ESA may be required despite adding bat boxes to the landscape. The Project may still contravene the species (Section 9) and habitat (Section 10) of the ESA, and therefore it may be prudent to consult with MECP to determine if an authorization under the ESA may be required.</p>	Requesting more information related to bat boxes, as they may be ineffective if not designed or installed properly.
SAR-67	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.10– Disturbance – Page 6.364	The EIS Addendum 2 states: “If potentially suitable maternity roost trees are observed in the LSA during operations, exit surveys following approved MECP / MNRF protocols will be used to verify use”. Conducting exit surveys in a forested context is not appropriate. Please see the <i>Survey protocol for species at risk bats within treed habitats: Little Brown Myotis, Northern Myotis & Tri-colored Bat. Guelph District. Draft. (MNRF, 2017)</i>, for determining	Requesting information on how impacts to SAR bat maternity roosts will be avoided/minimized.

			<p>maternity roosts in treed landscapes. In order to avoid impacts to potential maternity roosts, tree removals should take place outside the active bat window from May 1 through August 31.</p> <p>The proposed approach is not effective for determining/minimizing impacts to maternity roosts in a treed landscape. Updating this information is important to minimizing impacts to maternity roosting SAR bats.</p>	
SAR-68	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.10 – Roosting Habitat Page 6.365	<p>Was the 378,000 ha of potential maternity roost habitat within the RSA (Pic Forest FMU) determined using the same modelling as proposed within the EIS Addendum 2 (i.e., minimum of 80 years of age and at least 10% cover of trembling aspen)? Looking for clarification that the 0.01% of “higher quality maternity roost habitat” in the SSA was calculated in the same way as the RSA. If the RSA was calculated in a different way, the percentage of maternity roosting habitat within the SSA compared to the RSA would likely be much higher. This information is important for determining the scope of impacts to SAR bat maternity roosts across the SSA, LSA and RSA.</p>	Requesting more detail on how this information was calculated.
SAR-69	N/A	6.2.8.1.10 – Roosting Habitat Page 6.365	<p>As mentioned in Comment 66 the use of bat boxes can provide supplemental roosting habitat for SAR bats. However, MECP SARB would still need to assess the Project for potential impacts to protected species and their habitat under the ESA.</p>	Requesting more details on the intent of bat boxes, while considering impacts to SAR bats and SAR bat habitat.
SAR-70	EIS Guidelines 2.6.1.8 Wildlife: Species at Risk	6.2.8.1.15– Project Residual Effects Page 6.376	<p>The EIS identifies Eastern Whip-poor-will habitat based on boreal ecosite codes. In addition to the surveys, it is recommended that habitat be mapped through an aerial imagery review to inform the evaluation of Project for suitable habitat. Suitable (breeding and foraging) habitat typically includes some combination of:</p>	Requesting more information related to suitable breeding and foraging habitat for Eastern Whip-poor-will.

			<ul style="list-style-type: none"> - Sparse (<25%) to moderate (25-75%) tree cover (e.g., deciduous, mixedwood, coniferous, treed wetlands) and open habitat (e.g., shrublands, fallow fields, regeneration following fires or clearcuts, rock and sand outcrops, shrubby wetlands) - Sparse to moderate shrub and herbaceous cover; - Well-drained soils (e.g., sand, sandy-loam) <p>The EIS has only considered habitat for Eastern Whip-poor-will on an ecosite scale. Structural attributes, such as tree cover, must also be considered so that all potential habitat is understood.</p>	
SAR-71	N/A	<p>Appendix D6 7.2.2.5 Pic River Page 7.11</p>	<p>This section briefly outlines potential efforts to stabilize the Pic River riverbank (western side) immediately adjacent to a known sturgeon foraging area. The stabilization is proposed because Camp 19 Road (access road) is immediately adjacent to the bank and there are signs of erosion.</p> <p>The Pic River banks are known to be highly active in this area. MECP has concerns about the washout potential of Camp 19 Road in relation to the adjacent sturgeon foraging habitat as well as any impacts to the sturgeon foraging habitat in relation to construction of armour stone or similar fortification.</p>	<p>Please provide further information about the washout potential of Camp 19 Road and how this might impact the sturgeon foraging area; also provide a more detailed assessment of the construction of potential bank fortification/stabilization with respect to the sturgeon foraging habitat and any impacts that might be associated with the construction.</p>
SAR-72	N/A	<p>2.4 – Spatial Boundaries p. 2.6</p>	<p>During the Marathon Palladium Water Management meeting on May 26th, 2021, it was noted that Camp 19 Road will be used for equipment to access the site and will require additional vegetation removal. This information was not communicated in the EIS</p>	<p>Please update the Site Study Area (SSA) with this information. Furthermore, please update the total loss of</p>

			Addendums or the Baseline Report, 2020. MECP may have concerns with vegetation clearing and its potential impacts to species at risk.	vegetation (Table 6.2.6-4 of EIS Addendum 2) to include the total size of vegetation removal along Camp 19 Road and any other areas not captured.
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June 25, 2021

Carolyn Lee
Project Officer
Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks

Re: Information Request regarding proposed boreal caribou Off-Site Mitigation Plan for the Environmental Impact Statement Addendum for Proposed Marathon Palladium Mine by Marathon PGM

The Ministry of Environment, Conservation, and Parks' Species at Risk Branch (MECP SARB) is currently reviewing the Environmental Impact Statement (EIS) Addendum for the Marathon Palladium Project (the 'Project') to assess impacts of the Project on species at risk. Through the reviewing process, MECP SARB is providing technical review comments and requesting more information on specific topics from the Proponent (Marathon PGM) by way of the Joint Review Panel (JRP).

Through this review, it appears that the Proponent is seeking to implement their proposed caribou "off-site mitigation plan" developed in 2014.

We are aware of an Information Request (IR) submitted to the Proponent from the JRP on May 31, 2021, seeking further detail about the off-site mitigation plan as follows:

To address potential cumulative effects on woodland caribou in the Regional Study Area, the Proponent (formerly Stillwater Canada Inc.) proposed off-site mitigation opportunities in the Lake Superior Coastal Range (LSCR) and adjacent zone of discontinuous distribution. Generation PGM Inc. (GenPGM) states that the off-site opportunities identified in 2014 remain valid and may be suitable to achieve overall benefit for woodland caribou in the LSCR. The Caribou Habitat Off-site Mitigation report (2014) built upon existing forest management activities and initiatives and approved Forest Management Plans (FMPs) that overlap the Coastal Range. More specifically, the report proposes decommissioning, rehabilitation and planting of already disturbed areas to improve future potential caribou habitat. Retired road networks, such as forest access roads that have been identified for potential decommissioning, and old slash piles from previous forest management activities FMPs are some of the features identified in the

report, based on engagement with various groups. In Table 8.1 of the EIS Addendum, GenPGM states that details regarding off-site mitigation for woodland caribou will be defined in the Updated Caribou Offset Mitigation Report. This report was not submitted as part of the EIS Addendum. As such, the Panel is not aware if FMP objectives used to develop the 2014 report have changed, particularly if a new FMP has been approved, or if other activities and initiatives, and in particular Traditional Ecological Knowledge, have been considered that would in turn alter GenPGM's off-site mitigation measures and/or priorities. In order to facilitate a timely review and meaningful public participation, GenPGM is required to make all documents related to the environmental assessment of the Project available to the Panel prior to it determining sufficiency on the EIS and EIS Addendum.

Information Request: Provide the Updated Caribou Habitat Off-site Mitigation report and a discussion on how Traditional Ecological Knowledge was or will be considered in the development and implementation of off-site mitigation measures

References: EIS Addendum, Chapter 6, Section 6.2.8. - Species at Risk EIS Addendum, Chapter 8 - Table of Commitments Proposed Caribou Habitat Off-site Mitigation, 2014 (CIAR# 671)

MECP SARB and the Ministry of Natural Resources and Forestry (MNRF) have performed a preliminary review of the Caribou Habitat Off-site Mitigation plan received as part of the Marathon Palladium Project (CIAR File No. 54755) prepared on June 16, 2021 as part of the Generation PGM Response to the Joint Review Panel's Request for Information #2 Received May 31, 2021.

Given the complicated nature and cross-jurisdictional scope of caribou habitat management actions, MECP SARB and the MNRF are collaborating to submit our IR, distinct from the JRP's IR and with consideration of our preliminary review of the updated mitigation plan, we are seeking further information from the Proponent.

Attached is a collaborative IR from MECP SARB and MNRF seeking clarity and engagement, which has not occurred since reinitiating the Project in 2020, from the Proponent on matters related to the proposed caribou off-site mitigation plan.

Should you have any questions please do not hesitate to contact

<email address removed>

Sincerely,

<Original signed by>

Kristina Hubert
Species at Risk Specialist

Permissions and Compliance, Species at Risk Branch
Ministry of the Environment, Conservation and Parks

Marathon Palladium Project: Information Request Table

**Ontario Ministry of the Environment, Conservation and Parks
Species at Risk Branch
&
Ontario Ministry Natural Resources and Forestry**

Issue #	Reference to EIS Guidelines or Panel Terms of Reference	Reference to EIS 2012, EIS Addendum 2021 and Previous IR	Rationale	Information Request
47.		6.2.8.1.9 Woodland Caribou Off-Site Mitigation Page 6.350 & CIAR#671	<p>This section describes how the Proponent intends to implement their 2014 proposed off-site mitigation plan for caribou habitat rehabilitation in areas of the Lake Superior Coast Range (LSCR) as well as within the Discontinuous Distribution (DD) in order to focus efforts on maintaining/creating connectivity linkages between the LSCR and more northerly Ranges in the Continuous Distribution (CD) as per direction in Ontario’s Caribou Conservation Plan (CCP).</p> <p><i>“To address potential cumulative effects on woodland caribou in the RSA, off-site mitigation opportunities elsewhere in the LSCR and adjacent zone of discontinuous distribution were identified for woodland caribou following MNRF (2013) guidance. Options were developed in cooperation with MNRF Nipigon District and were presented in Northern Bioscience (2014). These mitigation</i></p>	<p>(1) For broad context, in 2019, the responsibility for administering the <i>Endangered Species Act</i> was transferred from MNRF to MECP. As such, the MECP will be providing comments on the project’s potential impacts to SAR and/or their habitat, as well as any proposed mitigative actions. However, any habitat management actions that will occur on Crown land must be informed by MNRF. MECP SARB and MNRF request that the Proponent communicate directly with MECP SARB (from a species conservation and recovery policy perspective) and MNRF (from a crown land management implementation/ operational perspective) on this matter in an effort to determine whether the proposed off-site mitigation plan will be effective in mitigating impacts to the caribou population and that it remains implementable.</p>

			<p><i>opportunities were compared to the 2021-2031 Pic Forest FMU FMP to ensure that they remain consistent with current management direction, particularly with respect to road decommissioning objectives. Opportunities were identified in the Northern Bioscience (2014) remain valid and may be suitable to achieve overall benefit for woodland caribou in the LSCR.”</i></p> <p>It is suggested that the off-site mitigation may constitute overall benefit, which is a reference to legislative requirements associated with overall benefit permits under s. 17(2)(c) of the <i>Endangered Species Act</i> (ESA), which may be required to carry out the Project. It is premature for MECP SARB to comment at this stage about any potential ESA authorization that may be required. Therefore, SARB has not evaluated the Project in relation to legislative requirements under the ESA in this review. If an ESA authorization is required following the environmental assessment process, actions proposed within an off-site mitigation plan may inform conditions of the ESA authorization. In addition, actions beyond the proposed off-site mitigation may be required.</p> <p>(1) It is noted that the Proponent chose to compare their off-site mitigation opportunities with the 2021-2031 Pic Forest FMP as a way of determining whether their proposed off-site mitigation from 2014 may be relevant in today’s context. It is currently understood that Generation PGM has not engaged MECP SARB</p>	<p>(2) Should the proposed off-site mitigation no longer suffice, and alternate measures need to be considered off-site and on Crown land, it is recommended that this be evaluated in the EIS Addendum because alternative mitigation on Crown land may trigger further <i>Environmental Assessment Act</i> (EAA) requirements.</p> <p>(3) MECP SARB is also seeking rationale as to why the 2014 proposed off-site mitigation has not been updated to reflect changes with respect to the LSCR caribou population and state of the range. Alternatively, MECP is requesting that the Proponent prepare an updated off-site mitigation plan that is reflective of the current LSCR caribou population and state of the range, in addition to project adjustments (i.e. increase footprint).</p> <p>(4) MECP SARB requires rationale to support the application of mitigative actions outside of the current RSA that can be reasonably considered mitigation for this Project.</p>
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			<p>or MNRF in relation to previous concerns expressed during the initial review of the original EIS (2012) for caribou and associated impacts/mitigation for this project. While MECP SARB supports the overarching concept of habitat restoration to enhance connectivity between the LSCR and northerly Ranges in the Continuous Distribution (CD), there are concerns that the Proponent has not done due diligence to ensure that their proposed off-site mitigation plan initially created in a 2014 context is achievable in today's context (i.e. significant declines in the caribou LSCR population state).</p> <p>(2) In addition, it is unclear to MNRF if the proposed mitigation is achievable recognizing current stakeholder interests in maintaining access roads and Indigenous communities' interests in the landbase. Further to this, although it is mentioned that the proposed mitigation appears to be consistent with the current FMP, it does not appear that discussions have occurred with the Sustainable Forest License (SFL) holder, nor have discussions occurred with MNRF regarding the implementation of the off-site mitigation plan.</p> <p>(3) MECP SARB notes that the Project footprint described in EIS Addendum Chapter 1, Section 1.6 Project Design Changes (page 1.65) has increased approximately 200 ha in size from 900 ha in the previous iteration of the EIS to 1,100 ha in the current EIS Addendum. The off-</p>	
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			<p>site mitigation plan has not been updated to reflect this increase in project footprint, and corresponding impacts to caribou and their habitat, along with actions to mitigate.</p> <p>(4) MECP SARB has concerns that two of the four candidate locations selected in the 2014 proposed off-site mitigation plan for habitat restoration are not within the revised 2021 caribou Regional Study Area (RSA) – specifically portions of the “Vein Lake West” candidate location and the “Nama Creek” candidate location (see Figure 19 of the proposed off-site mitigation plan).</p>	
		<p>Marathon Palladium Project (CIAR File No. 54755) Prepared on June 16, 2021 Generation PGM Response to the Joint Review Panel’s Request for Information #2 Received May 31, 2021; DRAFT Marathon Palladium Project Proposed Caribou Habitat Off-site Mitigation (June 8, 2021)</p>	<p>In the interest of time and a thorough review of all changes/updates to the off-site mitigation plan, a document with tracked changes would be helpful.</p>	<p>Provide a tracked changes version of the off-site mitigation plan in order to better understand all updates.</p>

		<p>Marathon Palladium Project (CIAR File No. 54755) Prepared on June 16, 2021 Generation PGM Response to the Joint Review Panel’s Request for Information #2 Received May 31, 2021; DRAFT Marathon Palladium Project Proposed Caribou Habitat Off-site Mitigation (June 8, 2021)</p>	<p>The DRAFT Marathon Palladium Project Proposed Caribou Habitat Off-site Mitigation plan states:</p> <p>“At this time, GenPGM intends to pursue approval under section 23.13 (newly-listed and transition species development) of Ontario Regulation 242/08 under the Endangered Species Act, 2007. However, the proposed off-site mitigation will incorporate the principles for overall benefit, described in the Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefits Permits document (OMNR, February 2012a) now administered by MECP.”</p>	<p>Please note GenPGM is no longer eligible for the exemption under s. 23.13 (Transition - development ongoing when species first listed, etc.) of Ontario Regulation 242/08 under the ESA as the proposed activity does not meet the timing requirements under this section.</p>
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