Impact Assessment Agency of Canada | Agence d'évaluation d'impact du Canada

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June 24, 2020 Agency File No.: 005591

Paolo Toscano
Director, Projects
Alamos Gold Inc.
Brookfield Place,181 Bay Street, Suite 3910
Toronto, Ontario, M5J 2T3

Sent via Email: PToscano@alamosgold.com

SUBJECT: Conformity Review Outcome for the Lynn Lake Gold Environmental Impact Statement

Dear Mr. Toscano:

On May 25, 2020 the Impact Assessment Agency of Canada (the Agency) received the Environmental Impact Statement (EIS) submitted by Alamos Gold Inc. (Alamos) for the Lynn Lake Gold Project.

The Agency has reviewed the EIS and determined that it does not conform to the requirements of the November 6, 2017 *Guidelines for the Preparation of an Environmental Impact Statement pursuant to the Canadian Environmental Assessment Act, 2012 for the Lynn Lake Gold Project* (EIS Guidelines). The Agency received advice on the conformity of the EIS from federal authorities.

Annex 1 (attached) identifies the areas where information and/or clarity are needed in order for the EIS to meet the requirements of the EIS Guidelines. For ease of reference, the Agency has included a reference to the corresponding section of the EIS Guidelines for each area of required information or clarity.

Alamos is required to address the EIS deficiencies identified in Annex 1 before the federal environmental assessment can proceed to the technical review and public comment period. The timeline for the federal environmental assessment process will be paused while Alamos completes this work. Based on the nature of the deficiencies, the Agency has determined that Alamos must submit a fully revised EIS that includes insertions or changes made throughout the EIS main text, supporting documents and EIS Summary. The Agency anticipates sending an additional Annex in the near future, for your consideration, that will contain (but may not be limited to) early indications of technical deficiencies that would lead to information requests following the technical review of the EIS.

The outcome of this conformity review, including this letter and annexes, will be posted on the Canadian Impact Assessment Registry Internet Site, found at: https://iaac-aeic.gc.ca/050/evaluations/document/132480.

Upon receipt of a revised EIS, the Agency will conduct a conformity review in accordance with its *"Operational Policy Statement: Information Requests and Timelines, February 2016"* (http://publications.gc.ca/collections/collection_2016/acee-ceaa/En106-147-2016-eng.pdf). If the deficiencies are not addressed, the Agency will identify to Alamos the information that remains outstanding.

Once the Agency determines the EIS conforms with the EIS Guidelines, the federal environmental assessment can proceed to the technical review and public comment period. This involves posting the EIS documents on the Agency's website for public comment. The Agency would consider comments received and request additional information, as required, until it has sufficient information to prepare the Environmental Assessment Report to inform the Minister of Environment and Climate Change's decisions under the *Canadian Environmental Assessment Act, 2012*.

Annex 2 (attached) is advice to Alamos from federal authorities based on their reviews of the EIS. This advice applies more broadly than to information requirements associated with the conformity of the EIS and should be considered throughout the preparation of the revised EIS, the remainder of the environmental assessment process, and the regulatory processes that follow, as applicable. Please contact the Agency should you wish to obtain a copy of the original comments from federal authorities to the Agency.

The Agency welcomes the opportunity to discuss the outcome of this review with you, to provide further advice on how to best address the outstanding information required to move forward with the assessment process, and to provide the original advice received from federal authorities to the Agency. If you have any questions, please contact me at 587-338-7191 or via email at Melissa.Pinto@canada.ca.

Sincerely,

<original signed by>

Melissa Pinto
Project Manager
Prairie and Northern Region
Impact Assessment Agency of Canada

Cc: Karen Mathers, Principal, Environmental Services, Stantec Inc.
Colin Webster, VP, Sustainability and External Affairs
Michael Raess, Senior Environmental and Community Relations Coordinator

Annex 1 – Detailed Conformity Gaps

No.	Requirement of the EIS Guidelines	Section of the EIS	Information Requirement
	General Comments		
CR-01	Missing Information	Master Table of Contents	Update the master table of contents in Volume 1 to include Chapter 16.0, which is missing, and include appropriate page numbers for Chapter 20.0, which currently state "error! Bookmark not defined".
CR-02	Missing Information	Table of Contents (General)	Ensure all maps are listed in the table of contents for each Chapter.
CR-03	Missing Information	13.3	Ensure Table 13-15 is complete (i.e., indicate whether there will be interactions between the environment and Emissions, Discharges, and Wastes for the construction phase).
CR-04	Missing Information	14.5.3.1	Complete all sentences and ensure there is no missing information in this section.
CR-05	Missing Information	Appendix 20A	Ensure information in Table 20A-1 is complete (i.e., pg. 20A-22 under Residual Effects may be missing information).
CR-06	Incorrect Reference(s)	13.5.1	Ensure the correct table is referenced in this section (i.e., Table 13-22 instead of Table 13-23).
	PART 1		
	3. Project Description		
CR-07	*3.2.1 Changes to the environment*	All VCs	For tables indicating project-environment interactions, describe the information in the tables, including descriptions of the project activities listed and information on how the potential interactions are considered further in the assessment. Provide rationale for why it was determined that certain project activities will not interact with the environment.
CR-08	*3.2.2 Valued components to be examined*	All VCs	For each impacted VC, include a discussion of the effects of the environment on federal lands for each VC whose RAA encompasses federal lands, including on the environment on First Nations reserve lands.

CR-09	*3.2.3 Spatial and temporal boundaries* *(8.2 Monitoring)*	All VCs	Describe how and ensure temporal boundaries for each VC considered whether potential effects are predicted to continue after project decommissioning. Describe how community and Aboriginal traditional knowledge were considered in the spatial and temporal boundaries for each VC. Describe criteria and conditions considered in the determination of permanent closure for the project. Specify the monitoring that will occur to ascertain that the site is stable, and the conditions that will be required for each VC before the site may enter permanent closure.
CR-10	*3.2.3 Spatial and temporal boundaries*	6.0 7.0	Provide a description (e.g., modelled concentrations, contour maps) of the project's potential atmospheric effects along PR-391, including adjacent land use areas (i.e., receptor sites along the roadway) identified in the EIS. Provide a description (e.g., predicted changes in ambient day-time and night-time noise and vibration levels) of the project's potential noise effects along PR-391, including adjacent land use areas (i.e., receptor sites along the roadway) identified in the EIS.
	4. Preparation and Presentation of the Environmental Impact Statement		
CR-11	*4.2.2 Community knowledge and Aboriginal traditional knowledge*	All VCs	Update the EIS with any additional community or Aboriginal knowledge obtained during engagement to inform the assessment of impacts to VCs. Describe the process to obtain community or Aboriginal knowledge relevant to a given VC and specify when no knowledge for a given VC could be obtained.
CR-12	*4.2.3 Existing information*	10.2.1.1	Provide all sources of data used in baseline reports and reference them in the EIS.
CR-13	*4.3 Study strategy and methodology*	10.2.1.1	Provide the data related to ground-truthing during high flow conditions to support the high flow modelling results.
CR-14	*4.4 Presentation and organization of the environmental impact statement*	Concordance Table	Ensure the concordance table between the EIS and the EIS guidelines references the correct sections of the EIS.

			For example: - the concordance table references incorrect sections (i.e., Chapter 5.0 instead of Chapters 6.0 and 7.0) of the EIS summary for the requirement of how factors under paragraph 19(1) of CEAA 2012 were considered. - the concordance table reference from Chapter 5.0 to address the first point in the EIS guidelines under 6.1.3 Topography and Soil does not correlate. It appears that 5.2.5 is the correct reference. - include Maps 5-1 and 5-2 as references addressing the last bullet under 6.1.3 Topography and Soil in the EIS guidelines. - Section 11.5 discusses cumulative effects on vegetation and wetlands. This is missing as a reference where cumulative effects are assessed by comparing the future scenario with the project. - Section 11.8 discusses follow-up and monitoring and is not included as a reference discussing follow-up to verify the accuracy of the assessment for cumulative effects. - include references to supporting information that address the EIS guideline requirements.
CR-15	*4.5 Summary of the environmental impact statement*	EIS Summary – 3.0	Where no alternative to a project component was identified, identify an alternative and assess whether it is technically and economically feasible or provide a rationale for not assessing an alternative.
CR-16	*4.5 Summary of the environmental impact statement*	EIS Summary – 4.0	Summarize the proponent's responses to concerns raised during engagement. The EIS summary must be a stand-alone document.

CR-17	*4.5 Summary of the environmental impact statement*	EIS Summary – 6.0 and 7.0	Include a summary of the analysis for accidents and malfunctions, and effects of the environment on the project to provide context and rationale for the conclusions made in these sections.
	PART 2		
	1. INTRODUCTION & OVERVIEW		
CR-18	*1.4 Regulatory framework and the role of government*	Entire EIS	Update all direct or indirect references relating to the previous version of the *Fisheries Act* (2012) to the current, newly amended *Fisheries Act* (2019). Update the information in the EIS related to the current *Fisheries Act* authorization application that was submitted to Fisheries and Oceans Canada.
	3. PROJECT DESCRIPTION		
CR-19	*3.2.2 Operation* *(6.2.2 Changes to Groundwater and Surface Water)*	2.8.2.1, 2.3.2.2, 2.9.3.8 and 9.4	Provide details on the intended treatment processes to be used to treat effluent to acceptable water quality guidelines for contact water and sewage. Indicate how nutrient removal will be addressed and clarify whether modelling included sewage effluent as a source term.
	4. PUBLIC PARTICIPATION AND CONCERNS		
CR-20		3.4	Describe the ongoing and proposed public engagement activities that will be or are currently being undertaken, including on the distribution of information, the methods of engagement used, where the consultation was held, the persons and organizations consulted and the concerns voiced. Describe the thresholds/events that would trigger public consultation on an “as needed” basis during project operations.
CR-21		3.0	Describe the extent to which information collected during public engagement is considered in the design of the project and in the EIS. Provide information on how outstanding issues were and will be addressed and/or incorporated into the EIS.

	5. ENGAGEMENT WITH INDIGENOUS GROUPS AND CONCERNS RAISED		
CR-22		3.0	Describe the steps that will be taken to solicit and confirm community information from each of the communities being engaged on the project. For communities that indicate they do not exercise their potential or established Aboriginal or treaty rights protected under section 35 of the *Constitution Act, 1982* (section 35) in the RAA, provide documentation of community verification.
CR-23		3.3.6	Provide a tracking table of key issues raised by each group, including the concerns raised related to the project, proposed mitigation measures, and where and how the concern was considered in the EIS.
CR-24		3.3.7	Provide any concerns raised by communities on the spatial and temporal boundaries, as well as proposed mitigation or accommodation measures, and discuss how they were addressed. Describe whether the concerns brought forward at the February 2020 open houses were shared by communities that did not attend these open houses and whether these concerns were addressed. Provide details of on-going and future Indigenous engagement for community specific mitigation or accommodation measures.
CR-25		19.0	Identify the potential adverse impacts of each of the project components and physical activities, in all phases, on potential or established section 35 rights, including title and related interests. Using updated information that incorporates any changes or revisions made to the effects assessment of biophysical VCs: - Provide an assessment of the project's potential impacts on potential or established Aboriginal or treaty rights for each of the project components and physical activities for all project phases.

			- Include the potential adverse impacts on potential or established Aboriginal or treaty rights that may result from the residual and cumulative environmental effects caused by the project. - Include the perspectives of Indigenous groups on the assessment of impacts on potential or established Aboriginal and treaty rights that may result from the residual and cumulative environmental effects caused by the project and a description of how the assessment considered Indigenous comments. Describe measures to mitigate or accommodate potential adverse impacts of the project on potential or established Aboriginal or treaty rights for each Indigenous group. Review all measures identified to mitigate potential adverse impacts to potential or established Aboriginal or treaty rights and ensure that the mitigation measures are written as specific commitments that clearly describe how the proponent intends to implement them. Describe the views of Indigenous groups on the effectiveness of the mitigation or accommodation measures. Clarify whether the measures identified by Indigenous groups that may mitigate or accommodate changes to the quantity of Crown lands available to practice their Aboriginal or treaty rights will be implemented, and if so, how the proponent intends to implement them. Describe potential adverse impacts on Aboriginal or treaty rights that have not been fully mitigated or accommodated as part of the assessment process and associated engagement with Indigenous groups, including the perspectives of potentially impacted Indigenous groups.

			Provide a rationale for conclusions presented in the EIS with respect to potential residual effects to Aboriginal or treaty rights. Describe how conclusions presented with respect to potential effects to Aboriginal or treaty rights were validated with Indigenous groups. Describe and assess potential cumulative impacts to Aboriginal and treaty rights. Describe how information provided by Indigenous groups, including Traditional Knowledge studies, or information obtained from a third party source about groups was or will be used (e.g., what information was provided by Indigenous groups and how was it used to inform the information presented in the EIS).
CR-26		19.9	Include mitigation measures as specific commitments that clearly describe how the proponent intends to implement them.
CR-27	*5.1 Indigenous groups and engagement activities*	3.3 and 19.7	Describe efforts undertaken to provide each Indigenous group with the opportunity to review and provide comments on information used to describe and assess effects on Aboriginal peoples, including impacts to Aboriginal or treaty rights.
CR-28	*5.1 Indigenous groups and engagement activities*	3.3	Provide details on any future planned engagement activities. Describe all engagement activities to date involving identification of key issues, concerns and recommendations shared by each Indigenous group, as well as the follow-up responses and outcomes. Provide these records to the Agency, respecting any confidentiality commitments made. Clarify whether there has been any contact with Indigenous groups not identified in Section 5.1 of the EIS guidelines.

	6. EFFECTS ASSESSMENT		
CR-29	*6.1 Project setting and baseline conditions*	6.2, 11.2 and 12.2 6.2	Describe how historical mine tailings and contamination, its management, and contribution as a source of environmental impacts were considered in the determination of baseline conditions. Provide a baseline survey of ambient air quality data for contaminants of potential concern (diesel particulate matter, hydrogen cyanide, metals, volatile organic compounds, and polycyclic aromatic hydrocarbons) in the project areas, and in the airshed, that are likely to be affected by the project, with corresponding updates to the relevant sections of the EIS.
CR-30	*6.1.1 Atmospheric Environment*	5.2.4 and Volume 4 Appendix B	Provide information on the variation in night-time light levels during different weather conditions or seasons at the project site and at any other areas where project activities could have an effect on light levels.
CR-31	*6.1.3 Topography and Soil*	5.2.5	Describe the processes for rating soil suitability within access roads given that the access road to the MacLellan site has not been included in the PDA or LAA baseline mapping and description for landforms and soils (as per Volume 4, Appendix E, Appendix A, Map 3B and Map 4). Considering the MacLellan access road has not been included, describe the implications on the depiction of permafrost conditions within the LAA and RAA, and the potential for thaw settlement and terrain instability associated with ground thawing.
CR-32	*6.1.3 Topography and Soil*	5.2.5.4	Provide information on the suitability of overburden for use in the rehabilitation of disturbed areas.
CR-33	*6.1.5 Groundwater and Surface Water*	8.2.2.4	Characterize groundwater-surface water interactions, including temperature of groundwater discharge to surface water and vice versa. Provide graphs or tables with the seasonal variations in groundwater levels and flow regime.

CR-34	*6.1.6 Fish and fish habitat*	10.0	Specify if any intermittent streams or wetlands are present which may constitute fish habitat or contribute indirectly to fish habitat.
CR-35	*6.1.6 Fish and fish habitat*	10.2.2	Indicate the surface area of potential or confirmed fish habitat for spawning, rearing, nursery, feeding, overwintering, migration routes, etc. in the maps that show littoral zones and water depths (bathymetry).
CR-36	*6.1.7 Migratory Birds and their Habitat*	12.2.2.1	Provide information on the year-round use of the area by migratory bird species (e.g., winter, spring migration, breeding season, fall migration).
CR-37	*6.1.8 Species at Risk*	11.2.2	Update applicable sections of the EIS to reflect the current *Species at Risk Act* status of Evening Grosbeak, including any changes to important habitat. Information is available at https://species-registry.canada.ca/index-en.html#/consultations/3394
CR-38	*6.1.8 Species at Risk*	11.2.2.1	Provide the Technical Data Report that describes the nature and location(s) of the 2019 Woodland Caribou observations as well as a summary of the camera trap effort since the completion of the referenced Technical Data Report in Volume 4, Appendix M.
CR-39	*6.1.9 Indigenous peoples*	19.0	Describe for each Indigenous group: - the location(s) in which rights are being practiced or exercised; - the context in which the right is practiced or exercised, including information about which groups (i.e., women, elders, youth, etc.) practice the right, and how the right was practiced historically; - how the group's cultural traditions, laws and governance systems inform the manner in which they exercise their rights (who, what, when, how, where, and why); - the group's perspectives on the importance of the land on which the project is located and how it intersects with any land management uses and/or plans they may have; and - how often the right is practiced or exercised and timing or seasonality of the practice or exercise of the right, including any maps and data sets (e.g., fish catch numbers).

CR-40	*6.2.1 Changes to the Atmospheric Environment*	6.0	Provide an estimate of direct greenhouse gas emissions associated with the decommissioning phase of the project.
CR-41	*6.2.1 Changes to the Atmospheric Environment*	6.1.2.3	Provide the relevant input and output files for the air quality modelling.
CR-42	*6.2.1 Changes to the Atmospheric Environment*	6.4.1.4	Clarify whether reported pollutant concentrations are presented using the same statistical metric as the Canadian Ambient Air Quality Standards. Clarify if pollutant concentrations were calculated using the statistical metric described in the Canadian Council of Ministers of the Environment Guidance Document on Achievement Determination for Canadian Ambient Air Quality Standards. If pollutant concentrations were calculated using another method, recalculate concentrations using the appropriate statistical metric to be able to compare data to the Canadian Ambient Air Quality Standards, and revise data in the EIS as required (i.e., reporting exceedances for discrete receptors and concentration contour maps for pollutants).
CR-43	*6.3.1 Fish and fish habitat*	10.4.1, 10.4.2 and 10.4.3.1	Calculate the amount of fish habitat being offset/compensated, as well as the spatial location of the offsetting/compensation habitat.
CR-44	*6.3.2 Migratory Birds*	12.4.2	Provide specific information on losses or changes in migratory bird habitat, considering the critical breeding and migration periods for the birds.
CR-45	*6.3.5 Other valued components that may be affected as a result of a federal decision or due to effects on federal lands, another province or outside of Canada*	6.0	Identify the potential changes to ambient air quality, including any greenhouse gas estimates, changes in the concentration of specified contaminants and mitigation measures proposed, on federal lands (including the Black Sturgeon Reserve Lands) that may be affected by the project.
CR-46	*6.4 Mitigation measures*	All VCs	For the mitigation measures and commitments proposed, identify who is responsible for the implementation of the measures and the system of accountability, including a discussion of the mechanisms to be used to require contractors and subcontractors to comply with commitments, policies, auditing and enforcement programs.
CR-47	*6.4 Mitigation measures*	All VCs	Provide an assessment of the effectiveness of the mitigation measures presented in the EIS.

CR-48	*6.4 Mitigation measures*	12.0	As wildlife mitigation is generalized, identify and describe specific mitigation measures to avoid or lessen potential adverse effects on species and/or critical habitat listed under the *Species at Risk Act*, listed COSEWIC species, and species harvested by Indigenous groups.
CR-49	*6.6.1 Effects of potential accidents and malfunctions*	22.0	Provide the preliminary emergency response measures and capacities for accidents and malfunctions identified in the EIS.
CR-50	*6.6.1 Effects of potential accidents and malfunctions*	22.0	Identify the magnitude of accidents and/or malfunctions, including the quantity, mechanism, rate, form and characteristics of the contaminants and other materials likely to be released into the environment during the event. Describe all plausible worst-case scenarios for each type of accident/malfunction identified and the effects of those scenarios.
CR-51	*6.6.2 Effects of the environment on the project*	21.0	Describe how potential effects of the environment on the project (i.e., local conditions and natural hazards) could result in effects to the environment. Include information on the effects pathways and describe the nature of potential effects on the environment, focusing on VCs. Provide a supported rationale if no effects are anticipated.
CR-52	*6.6.3 Cumulative effects assessment*	4.3.2.2 and all VCs	Identify and justify the temporal boundaries for the cumulative effects assessment for each VC.
CR-53	*6.6.3 Cumulative effects assessment*	4.3.4.4 and all VCs	For the cumulative effects assessment, ensure each VC is considered in relation to conditions prior to historic mining. Identify and describe changes/alterations in the interim, relevant to the consideration of cumulative effects.
	8. FOLLOW-UP AND MONITORING		
CR-54		23.0	Provide: - an Avian Monitoring Plan addressing project effects and mitigation measures specific to migratory birds (including waterfowl and species at risk); and - a Tailings Management Facility Monitoring Plan describing the specific monitoring strategy that will identify concerns regarding wildlife use in the areas adjacent to the Tailings

			Management Facility and allow for the timely application of additional mitigation measures
CR-55		13.8	For Labour and Economy, provide a clear rationale as to why a follow-up and monitoring program is not proposed.
CR-56	*8.1 Follow-up program*	All VCs	Identify intervention mechanisms to be used in the event that an unexpected deterioration of the environment is observed and include them in the follow-up and monitoring programs for all VCs.

ANNEX 2: Advice to the proponent

Federal Department	Reference to EIS	Context and Rationale	Advice to the Proponent
Fisheries and Oceans Canada	The entire EIS should be assessed to identify any of these discrepancies.	As per a DFO decision issued on May 21, 2020, the project's potential effects on fish and fish habitat will be assessed under the current, newly amended (2019) *Fisheries Act*.	It is advised that the proponent update all direct or indirect references relating to the previous version of the *Fisheries Act* (2012) to the current, newly amended (2019) *Fisheries Act*.
Fisheries and Oceans Canada	Chapter 10 - Assessment of Potential Effects on Fish and Fish Habitat Section 10.2.1.1 - Information Sources - "Previous studies conducted for earlier iterations of the Project"	Previous studies were identified as potentially contributing to baseline reports, however were not included in the appendices of the EIS.	All sources of data which were utilized in the formation of baseline reports and referenced as such should be provided within the appendices of the EIS.
Fisheries and Oceans Canada	Chapter 10 -Assessment of Potential Effects on Fish and Fish Habitat Section 10.2.1.2 - Fish Habitat - Streams - "Ground-truthing during high flow conditions will be conducted in spring 2020."	It is unclear if at the time of the submission of the EIS this data set had been completed and compiled to support the modelling analyses presented in the EIS.	If this data set has been completed and compiled, it should be provided within the appendices of the EIS to support validation of the flow modeling results.
Environment and Climate Change Canada	Chapter 12, Section 12.4.2.3; Section 12.4.3.3; Section 12.4.4.3 Chapter 23	Proponents planning to develop Project-specific Wildlife Monitoring and Management Plans or related compensation or offsetting plans are encouraged to engage with the department through the environmental/impact assessment to provide detail regarding proposed mitigation measures to address effects to migratory birds, species at risk, and wetland function. Without this information, this department cannot advise on the significance of residual effects to migratory birds or the satisfaction with compliance section 79 of SARA.	Please refer to guidance information on the SARA Registry regarding *Addressing Species at Risk Act Considerations Under the Canadian Environmental Assessment Act for Species Under the Responsibility of the Minister responsible for Environment Canada and Parks Canada* available at https://species-registry.canada.ca/index-en.html#/documents/2100

Environment and Climate Change Canada	Section 22.5.3.2 Emergency Response Measures. An ERSPCP will be prepared to facilitate response to emergency situations that occurs at the Project sites which will include spills and the releases of hazardous substances, including petroleum products, accidents involving hazardous substances	Given that the proponent has only described the potential fate and effects of hydrocarbons (22.5.3.3), it is advised to err on the side of caution by taking into account the reactivity of sodium cyanide with water and exposure to heat in order to take the appropriate measures. For this reason, the Proponent is encouraged to develop emergency response procedures in the spill contingency plan for sodium cyanide and ammonium nitrate.	Please ensure that spills of sodium cyanide and ammonium nitrates are included in the ERSPCP.
Environment and Climate Change Canada	2.9.3.6 Power Supply	As fossil-fueled electricity generation is planned at the Gordon site, the Proponent should be aware of the following new federal regulations for diesel-fueled electricity generation, which may impact the project. In particular, and assuming the Gordon site is not connected to the electricity grid or a natural gas distribution network, the Gordon site would be considered as a remote location, and the two 300kW diesel generators installed to provide electricity would need to meet Tier 3 emission standards. If the Gordon site is connected to either the electricity grid or a natural gas distribution network, the generator sets would need to meet Tier 4 standards. In either case, the engines would need to conform to the standards in force when their manufacture is completed. Notwithstanding the proposed regulations, ECCC may also recommend Tier 4 engines as a condition of approval on the project, hence the proponent needs to be made aware of the proposed regulations now.	In considering the environmental impacts of electricity generation at the Gordon site, the proponent should be aware of the planned publication of the ***Off-Road Compression-Ignition (Mobile and Stationary) and Large Spark Ignition Engine Emissions Regulations*** which are expected to come into force in early 2021. For further information: https://www.canada.ca/en/environment-climate-change/corporate/transparency/acts-regulations/forward-regulatory-plan/2019-2021/air-emissions-greenhouse-gases.html.
Health Canada	Volume 5 – Appendix A (Air Quality Impact Assessment Technical Modeling Report), Section 1 – Introduction Volume 5 – Appendix H (Human Health & Ecological	Health Canada (HC) guidance advises that all potential routes of exposure be considered – or a clear rationale provided for their exclusion in a human health risk assessment (HHRA). These include inhalation of dust, and both uptake of dust deposited on soils by plants growing in that soil, and deposition of dust directly upon the plants and splashing or resuspension of	Refer to Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment, 20191: Section 7.1.4—Identification of Exposure Pathways Table 7.1, which outlines the exposure pathways to be considered in an

	Risk Assessment Technical Modelling Report), Sections: 3.3—Receptor Locations; 4.3—Terrestrial Plants; and, Table and Figure 5.4.	impacted soils (e.g., due to rain or wind, respectively) upon plants ingested by humans or by animals that humans eat. The pathways to be considered also include indoor exposure to dusts and to re-suspended dusts in air (even where deposition is anticipated to occur on aggregate, which may not initially be soil-like but may be reasonably anticipated to become compacted and less porous over time, especially if subjected to heavy vehicle traffic that may also re-suspend deposited dusts).	HHRA for a proposed project.
Health Canada	Volume 5 – Appendix A (Air Quality Impact Assessment Technical Modeling Report), Section 1.1.1 — Substances of Interest for the Air Quality Assessment	HC guidance recommends that all substances emitted by the project for which there are no applicable guidelines/standards/criteria available for screening an environmental medium be carried forward into a quantitative risk assessment to determine whether there may be potential health risks associated with the predicted concentrations. In addition, the composition of complex emissions (such as dust, which may for example contain various metals and/or polycyclic aromatic hydrocarbons (PAHs), depending on the source) should be fully characterized and considered for all phases of the project (noting, suspended and deposited dust exposures appear to consider only metals in most sections of the HHRA and it is unclear whether PAHs are considered in dusts, although vehicle and/or generator emissions will occur in all phases of the project).	Refer to Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment, 20191: Section 7.1.2 – Identification of Contaminants of Concern
Health Canada	Volume 5 – Appendix A (Air Quality Impact Assessment Technical Modeling Report), Section 2.8 — Interpretation of Predicted Concentrations and Depositions	HC guidance indicates that the representativeness of statistical manipulation (such as the use of a geometric mean value) of the estimated or measured concentrations of chemicals of potential concern (COPCs) be considered in the HHRA.	Refer to Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment, 20191: Section 7.5 – Uncertainty and Sensitivity Assessment
Health Canada	Volume 5 – Appendix A (Air Quality Impact Assessment Technical Modeling Report), Appendix E – CALPUFF	HC guidance stipulates that receptor characteristics and locations be identified clearly. (Noting Map A-3, on which the discrete receptor locations were to have been	Refer to Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment, 2019:

	Volume 5 – Appendix H (Human Health & Ecological Risk Assessment Technical Modelling Report), Sections: 3.2 – Environmental Setting; and, 3.3—Receptor Locations	identified, appears to be missing possible recreational uses, such as swimming).	Section 7.2.4 – Characterization of Receptors
Health Canada	Volume 5 – Appendix H (Human Health & Ecological Risk Assessment Technical Modelling Report), Sections: 5.2.2—Calculation of Average Daily Dose; and, 5.4.1—Non-Carcinogenic Chemicals	HC recommends that dose averaging not be the default approach in the HHRA, rather be applied to make the best use of a limited number of available toxicological reference values. Dose averaging should be applied only as needed in a chemical-specific fashion that remains protective of human health.	Refer to Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment, 20191: Appendix G – Evaluating Human Health Risks for Chronic and Less-than-Chronic Exposures to Chemicals
Health Canada	Volume 5 – Appendix H (Human Health & Ecological Risk Assessment Technical Modelling Report), Sections 5.4.3—Human Health Risk by Inhalation;	There are specific circumstances when it may be appropriate for an HHRA to limit its assessment to a single route of exposure (e.g. when inhalation is the only likely route of exposure, as it can be for certain highly volatile chemicals with limited water solubility). Generally, a multi-media HHRA, that evaluates human exposure to contaminants in more than one environmental medium (e.g., air, soil, water, and foods), is considered appropriate for chemicals, such as metals and PAHs, that may be present in several media, and are most effective when they consider the potential for additive toxicity due to chemicals that act on the same target organ(s) and/or share common mechanisms of action.	Refer to Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment, 20191: Section 7.4.3 — Chemical Mixtures Appendix A — Glossary; and, Appendix C — Additional Information About Screening Chemicals of Concern, Select COPCs to be Included in an HHRA

[1] Health Canada (2019), ***Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment: Human Health Risk Assessment***. (https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-evaluating-human-health-impacts-risk-assessment.html)