Environmental Protection Operations Directorate
Prairie & Northern Region
9250 49 Street
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ECCC File: 4194-10-5/3295

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August 18, 2022

via email at: Wajeeha.Siddiqui@iaac-aeic.gc.ca

Wajeeha Siddiqui
Impact Assessment Agency of Canada
1145-9700 Jasper Avenue
Edmonton, AB. T5J 4C3

Dear Wajeeha Siddiqui,

Re: Lynn Lake - Request for Technical Review of Round 3 Information Request Responses

Environment and Climate Change Canada (ECCC) has reviewed the Round 3 Information Request Responses for the above-noted Project as requested by the Impact Assessment Agency of Canada's August 10, 2022 letter.

Our attached input is based on ECCC's mandate in the context of the *Species at Risk Act* (SARA), the *Migratory Birds Convention Act 1994* (MBCA), the *Canadian Environmental Protection Act 1999* (CEPA) and the pollution prevention provisions s.36(3) the *Fisheries Act* (FA).

Please contact Marcus Edino at 587-338-7051 or marcus.edino@ec.gc.ca if you need more information.

<Original signed by>

Margaret Fairbairn
A/Regional Director, Environmental Protection and Operations Directorate
Prairie Northern Region

cc: Cari-Lyn Epp, A/Head, EA South, EPOD, ECCC
Marcus Edino, Environmental Assessment Officer, EA South, EPOD, ECCC

Attachment 1 – Technical Review of Round 3 Information Request Responses – Lynn Lake Gold Project

Information Request Responses - Technical Review Optional Feedback Form

Objective: Taking into account the information provided in the Round 3 Information Request responses from Alamos Gold Inc., please identify any areas in the responses to the Information Requests that require further information to understand the potential environmental effects of the Project, and the significance of those effects to the components of the environment.

Please provide us with your comments on the Information Request responses by August 17, 2022

IR Number	Context and Rationale	Specific Question / Comment	Expert Group
Identify which Round 3 Information Request response your comments are related to (e.g. IAAC-R3-04 to IAAC-R3-06)	Identify if the concerns raised in technical review Round 3 have been addressed. Provide applicable background or rationale for the comment provided, or information requested, including why it is important for understanding the effects of the Project, particularly as it pertains to Section 5 of CEAA 2012 and potential impacts to rights.	Please provide your comment and/or ask a specific question, request specific additional information, or clarification.	
IAAC-R3-02	In response to IAAC-R3-02, the Proponent states that the proposed sewage treatment plant will discharge to the Keewatin River, be designed to provide secondary treatment, and include a tertiary filtration system for removal of Total Phosphorous. The plant effluent quality will be below the limits specified in the *Manitoba Water Quality Standards, Objectives,*	ECCC does not require further information.	ES-WQ

	and Guidelines for industrial waste under the *Water Protection Act* (Manitoba), specifically TSS of 25 mg/L, Carbonaceous BOD of 25 mg/L, Total phosphorous (TP) of 1 mg/L, and Fecal Coliform Bacteria (FCB) of 200 colony forming units/100 ml. The effluent will also "meet the seasonally variable ammonia water quality objective throughout the year." The system will be modular, allowing for expansion should monitoring indicate that the above-stated objectives are not being met. The system will be located at the MacLellan site and will receive trucked waste from the Gordon site. The Proponent has provided the loadings and information as requested, and discussed the potential effects on primary productivity. The Proponent stated that potential changes in primary productivity due to the daily maximum TP and maximum ammonia loading are expected to be negligible in the Keewatin River once the sewage treatment effluent is fully mixed with water in the Keewatin River. This is because the maximum sewage treatment plant discharge volume during construction (i.e., 100 m^3/day) would constitute <0.05% of the Keewatin River discharge in all months of the year during average flow conditions and during 1:25 dry year conditions.		

IAAC-R3-03	In response to IAAC-R3-03, the Proponent noted that the use of fertilizer amendments could result in elevated nutrient levels in the pit lake at the MacLellan site and in the downstream receiving environment. The Proponent noted that this is a contingency option only and that bench and field testing, along with modeling, would be done prior to use. This would inform the rate of fertilizer application necessary to achieve the desired metal reduction goals while limiting the potential for discharge of excess nutrients or oxygen-depleted water from the pit. The trophic status of receiving waters was discussed, and the potential for nutrient-related effects reviewed. The Proponent stated that the surface water quality assessment, and all dependent effects assessments, do not need to be revised to include the potential for eutrophication of lakes and rivers downstream of the open pits.	ECCC does not require further information.	ES-WQ
IAAC-R3-04	The Proponent generally addressed the concerns raised in the technical review Round 3. The Proponent provided a list of mitigation measures to be undertaken to minimize contaminants from leaching to groundwater. In addition, the Proponent provides, in IAAC-R3-01, an updated sensitivity analysis in which recharge, intermediate bedrock hydraulic conductivity, and deep bedrock hydraulic conductivity are further tested. Justifications for	There is limited detail for the groundwater-monitoring plan regarding vertical hydraulic gradients at the Mine Rock Storage Areas (MRSA) and Tailings Management Facility (TMF) post-closure. There is limited detail regarding alternative mitigation measures	CS-GW

	probable hydraulic conductivities and recharge rates are also provided. Two outstanding concerns remain: 1- The Proponent suggests pit filling will occur over a period of 21 years at the MacLellan site and 11 years at the Gordon site. The Proponent explains that during most of this period the horizontal hydraulic gradient will remain toward the open pits. The Proponent does not discuss how vertical hydraulic gradients will behave once pit filling is complete and how that may affect the potential for groundwater and surface water contamination. 2- Although the monitoring program for surface water and groundwater includes an adaptive management component to alert to changing conditions that would allow the implementation of additional mitigation measures, the Proponent does not provide specific alternative measures.	to limit the seepage of contaminants to groundwater at the MRSAs and TMF post-closure. Infiltration from the MRSAs or TMF into groundwater may still occur. In order to address the uncertainty surrounding the potential for movement of contaminants into groundwater and surface water, the surface water and groundwater monitoring program should include: • monitoring groundwater quality and quantity at multiple locations and depths and, • an adaptive management framework that will identify thresholds that when exceeded will initiate additional management and/or mitigation measures to ensure that the Project does not result in adverse effects.	
IAAC-R3-05	In the response to IAAC-R3-05, the Proponent confirms that a standing pond in the TMF at closure is not required, negating the need for	ECCC does not require further information.	MSC

	consideration of future climate effects on a TMF pond.		
IAAC-R3-06	The Proponent proposes analysis of Total Mercury and Methylmercury at both Gordon and MacLellan sites and acknowledges that Indigenous Nations are concerned that fish tissue concentrations already exceed CCME (2000) guidelines in lakes near the Project. The Proponent confirms that they will analyse and compare Total and Methylmercury concentrations in fish tissue from exposure and reference sites and describes the following two methods for determining significant differences: -Differences greater than the Critical Effect Size of +/- 25% using ANCOVA with fork length as covariate -A trend analysis between slopes of the regression lines. A trend analysis would provide comparison at the exposure sites before, during and after mining, which would be used to define a fish tissue trigger threshold for adaptive management.	ECCC does not require further information.	ES-WQ