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
IAAC-R3-01	The description of the hydrogeological context of the project should include the delineation of stratigraphic and hydrogeological boundaries and the physical properties of the hydrogeological units. Hydraulic conductivity tests have not been completed within the deep bedrock at the Gordon Site, nor within the lower 100 m of the deep bedrock at the MacLellan Site. With limited information, the assessment of groundwater should quantify the uncertainty related to these units, and conform to available data to support the assessment of surface water, fish and fish habitat. As demonstrated in the previous round of IRs, the results of the Impact Assessment for the Gordon Site are not sensitive (i.e. are effected to a limited degree) to the parametrization of the intermediate and deep bedrock. Given these results, the modelling and assessment for the Gordon Site is considered adequate. For the MacLellan Site, the sensitivity analysis presented in response to IAAC-R2-62 demonstrates that the groundwater assessment is sensitive to the hydraulic conductivity assigned to the intermediate and deep bedrock within the numerical model. In response to those results additional data was requested to support the conceptualization of the intermediate and deep bedrock for the MacLellan Site.	Confirm that IAAC-R3-1-1 is showing RQD for MacLellan (points are labelled as Gordon Site) In the absence of data to support the 40% decrease in hydraulic conductivity between the intermediate and deep bedrock model layers, provide the results for a calibrated model with a reasonable and uniform hydraulic conductivity for all bedrock more than 50 m below the top of rock. Provide assessment results for this model configuration, and compare those the base case model presented in the Impact Assessment. Should results differ, include the new base case as a potential outcome for impacts to groundwater and other valued components.

	Data and sensitivity analysis results were presented in IAAC-R3-01 to support the conceptualization presented as the base case in the Impact Assessment; however, the data presented is not adequate to support this conceptualization. As presented in IAAC-R3-01, RQD is expected to increase with depth based on literature and conceptual modelling. As noted in relation to the example of borehole GTM-15-05, low RQD values can be present at depth, and in low hydraulic conductivity intervals, such as the cause for fault gauge materials; however, 50^{th} percentile values indicate consistent increases in RQD with increasing depth. The discussion of RQD is valid and reasonable; however the data shown on figure IAAC-R3-1-1 does not support a differentiation between the intermediate and deep bedrock. As shown on the figure the 50^{th} percentile of the RQD within the upper bedrock is approximately 88% increasing to approximately 95% within the intermediate bedrock, and only increasing a further 1% to 2% for the remaining depth. Given the range in RQD, and the stated weak coupling between RQD and hydraulic conductivity, this data does not support distinctly different hydrostratigraphic units below 50 m below the top of bedrock. Furthermore figure IAAC-R3-1-2 shows the measured hydraulic conductivity as a function of depth below top of bedrock. The data on this figure is the same as that presented in the Hydrogeology Technical Modelling Report, as part of the original Impact Assessment, albeit with a log vertical scale. This data shows that the measured hydraulic conductivity within the intermediate bedrock ranges from 2.5×10^{-9} m/s to 1×10^{-7} m/s, while the range is 9×10^{-9} m/s to 6×10^{-8} m/s in the deep bedrock, based on limited data. Given the limited data overall, the lack of data for the majority of the deep bedrock unit, and the similarity in RQD and hydraulic conductivity between the intermediate and deep bedrock, there is no data to support the distinction of the bedrock at these depths into separate hydrostratigraphic units within the numerical model.	