RFI 055a
Pebble Project EIS

Request for Information

Title/Subject:	**Follow-up to response to RFI 055 PAG/Pyritic TSF**
Requestor:	**AECOM**
Date Transmitted:	**8/24/18**
Recipient:	**Pebble Limited Partnership**
Response Requested by:	**9/4/2018**
Rationale:	**The following information is requested to evaluate the overall constructability of the PAG/Pyritic TSF, potential water quality impacts, spill risk, and maintenance during closure.**
Describe the Information Requested and Level of Detail:	**1. Regarding response to Item 1) from RFI 055:** **a) What is the estimated maximum particle size and thickness of the processed material for protecting the geomembrane?** **b) What will be the placement sequence of the processed material over the geomembrane?** **c) How will the processed material be placed to ensure that its placement does not damage the geomembrane?** **d) What is the estimated maximum particle size of PAG rock?** **e) Will extra handling/crushing be required to use the PAG rock as a truck traffic surface?** **f) What would be the specified heights of the staged lifts of the PAG rock?** **2. Regarding response to Item 2) from RFI 055:** **a) Is laboratory testing planned using the specimens of the specified geomembrane and samples of the Pyritic TSF liquid that will be generated in order to confirm the geomembrane life expectancy for the specific site and operating conditions?** **b) Is laboratory testing completed on the ARD/NMD characteristics of the pyritic tails? If so, please provide results summary.** **3. Regarding response to Item 3) from RFI 055:** **a) Is the "minimum" water cover (depth of water) to be maintained in the pit throughout long-term closure consistent with the planned final managed pit lake level?** **b) What is the final estimated elevation of pyritic tailings and PAG in the pit?** **c) What is the water depth above the final estimated elevation of pyritic tailings and PAG in the pit?** **4. Regarding response to Item 4) from RFI 055:** **a) What is the ultimate disposal plan for the actual geomembrane material?** **b) What is the ultimate disposal plan for piping, pumps, and other non-earth materials?** **5. Confirm that the Pyritic TSF embankment would be downstream construction. What is the construction sequence and height of the starter dam and successive lifts?**

Recipient Response Form

Date Received from USACE:	Click here to enter text.
Response from Recipient (Describe	Click here to enter text.

Information Requested to the Level of Detail Requested; Provide Attachments as Needed):	
List Number and Type of Response Attachments:	**RFI 055a – PAG Pyritic TSF Responses.pdf**
Date Returned to USACE:	Click here to enter text.

AECOM Intake Form

Date Response was Received:	**9/7/2018**
Received by:	**AECOM**
Describe any Follow-up Related to this RFI:	**None at this time.**

From: James Fueg, Pebble Limited Partnership

To: Shane McCoy, US Army Corps of Engineers

Date: September 7th, 2018

The questions presented in RFI 055a on the PAG/Pyritic TSF are addressed below:

1) *Regarding response to Item 1) from RFI 055:*
    a. The design of the Pyritic TSF and PAG Waste Rock Tailing Storage Facility (Pyritic TSF) liner and protective zone will be completed in accordance with standard industry practice for similar facilities, such as heap leach pads. The details of the material zone to protect the geomembrane will be completed as a component of the design of the Pyritic TSF during the Alaska Dam Safety Program (ADSP) process. This includes details on the gradation limits for the zone of protective materials. The criteria for that design will include matching the protective material specifications to the geomembrane specification and overlying material properties. The thickness of the zone will be defined by a number of criteria, including stability, placement method and equipment, and the static and dynamic loads from which the geomembrane must be protected.
    b. Each lift of the processed material zone will be placed against the liner in advance of the PAG rock that will be placed against it, with each year's construction advancing sufficiently to enable placement of the year's forecast waste rock. The final design of the protective material zone may include an additional buffer zone of pit-run PAG waste rock.
    c. The construction of the liner will be completed in accordance with standard industry practice for similar facilities, such as heap leach pads. Materials overlying the geomembrane will be selectively placed to limit disturbance to the geomembrane and any previous placed materials.
    d. The PAG waste rock will be run-of mine waste rock. The maximum particle size is expected to be approximately 3 ft.
    e. No. The run-of-mine waste rock is expected to have a particle size distribution with acceptable gravel and sand content for use as a trafficable surface.
    f. The height of the staged lifts of the PAG rock will be defined by the mine production forecast and the design, particularly related to the stability design criteria.

2) *Regarding response to Item 2) from RFI 055:*
    a. Site specific laboratory testing will not be completed on the geomembrane. Estimates of the water quality will be completed to support the design and specification of the geomembrane. The water quality of the pyritic tailings will be monitored throughout operations.

b. Please see Tables 11-29 and 11-30 of the Supplemental Environmental Baseline Data Report, Chapter 11, Geochemical Characterization for available data on the pyritic tailings (1st Cleaner Scavenger Tails). Also see the response to RFI045 Data Concentrate Containers.

3) *Regarding response to Item 3) from RFI 055:*
   a. Yes, the management level of the Pit Lake will be maintained throughout long-term closure.
   b. The estimated final elevation of the Pyritic Tailings and PAG Waste Rock in the pit are 355 ft. and 645 ft., respectively.
   c. The maximum water level elevation within the Open Pit in long term closure is 890 ft. The depth of water above the Pyritic Tailings and PAG Waste Rock, assuming the management level, is approximately 515 ft. and 225 ft., respectively.

4) *Regarding response to Item 4) from RFI 055:*

   This response addresses both question a and question b. The geomembrane material will be rinsed if needed, piping, pumps, and other materials will be drained of fluids and cleaned as appropriate. These types of inert materials will be placed into a facility that will be permitted within the submerged waste rock dump in the pit or within the footprint of the reclaimed pyritic tailings facility in accordance with Alaska Department of Environmental Regulations and past practise. Material that has residual value or is not suitable for onsite disposal will be hauled offsite for disposal.

5) *Confirm that the Pyritic TSF embankment would be downstream construction. What is the construction sequence and height of the starter dam and successive lifts?*

   The Pyritic TSF embankments will be downstream construction. The initial lift will be constructed during the preproduction period and will provide sufficient volume for the initial two years of production, including allowances for flood events, wave run up, etc. Starter embankment heights are currently estimated at 180, 40, and 65 feet for the north, east, and south embankments respectively. Successive lifts will be constructed, in general, continually. The lift heights may vary depending on the volume of waste rock to be placed in each lift and required crest elevation as determined on the facility filling schedule. The maximum lift height will be defined by the criteria developed during the design process.