From:	Jones, Dave F (DEC)
To:	Fernandez, Enric; Kevin Lewis
Cc:	Ejaz Memon; Renovatio, James J (DEC); Simpson, Aaron J (DEC); Klina, Joshua J (DEC); Heroy, Catherine A (DNR)
Subject:	3rd Information Request for Donlin Gold Project"s Construction Permit AQ0934CPT02 Application
Date:	Friday, April 15, 2022 4:44:00 PM

Enric and Kevin,

As discussed earlier on the phone, I have finished my review of the BACT analyses included in the initial application for the Donlin Gold Project's Construction Permit AQ0934CPT02 dated October 29, 2021, as well as the additional two information request responses received on March 9th and 24th, and have identified several emissions unit types that still require additional information. Based upon this review, the Department is requesting additional information under AS 46.14.160(c) in order to prepare a preliminary permit decision.

The Department will continue to process Donlin Gold LLC's (Donlin's) application while the requested information is being prepared and will subsequently notify Donlin if unable to proceed due to inadequate information. The Department is requesting that Donlin prepare a response to this request by Friday, May 6th, 2022, or provide a request for additional time as needed.

Autoclaves EUs 77 and 81

The Department verified that there are no autoclaves in the RBLC other than the pitch Impregnation source identified by Donlin in their application (RBLC Source SC-0142). However, the Department notes that this source is employing a thermal oxidizer for CO and VOC controls. Donlin's autoclaves EUs 77 and 81 have potential combined CO emissions of 771 tpy and VOC emissions of 0.4 tpy. Regarding possible CO and VOC controls for the autoclave, Donlin's application states the following:

> Possible add-on control options for CO include thermal and catalytic oxidation. The level of control that may be achieved by thermal and catalytic oxidation systems is unknown as there are no applications of these controls on ore autoclaves. In addition, because there are no commercial installations of these controls on this source type, they are not considered viable control options.

1. Please verify that thermal and catalytic oxidation is not a technologically feasible control option for the autoclaves, or submit economic analyses demonstrating that potential emissions reductions for these control types are not economically feasible, or propose controls for these EUs.

Airport Generators EUs 13 and 14

Donlin has proposed EPA Nonroad Tier 4 generators to power the airport (non-emergency generators). The application states a proposed emission rate of 4.38 g/kWh (EPA Tier 4 with 1.25 not to exceed factor of safety) which equates to 8.4 tpy for each generator.

2. Please verify that these Tier 4 engines are already equipped with a catalyst control system for CO and obtain actual CO emission rates from the engine vendor/manufacturer if they are in fact lower than the EPA Tier 4 standard with a not to exceed factor safety, or provide an economic analysis demonstrating that potential emissions reductions for an oxidation catalyst is not economically feasible, or propose controls for these EUs.

Carbon Regeneration Kiln EU 88

The carbon regeneration kiln has potential CO emissions of 3.8 tpy and VOC emissions of 1.9 tpy (5.8 tpy combined) and potential particulate emissions of 1.9 tpy.

3. Please provide economic analyses demonstrating that potential emissions reductions for thermal and catalytic oxidation control types are not economically feasible, or propose controls for these EUs.

The Department notes that a wet-off gas cooler was proposed to control particulate emissions. However, a dust collector, ESP, or wet scrubber could provide potentially higher levels of control.

4. Please provide economic analyses demonstrating that potential emissions reductions from a dust collector, ESP, or wet scrubber is not economically feasible, or propose the top level control.

Particulate Controls (Various EUs)

The application has numerous emissions units with particulate emissions that have technologically feasible controls available and no economic analyses to prove that they would be cost ineffective. These include the pressure oxidation hot cure EUs 85 -87 (1.8 tpy), electrowinning cells EUs 91-94 (0.8 tpy), and mercury retort EU 97 (0.13 tpy).

5. Please provide economic analyses demonstrating that potential emissions reductions from a dust collector (when technologically feasible), ESP, or wet scrubber is not economically feasible, or propose the top level control for each EU type. Note that an analysis showing a control to be economically infeasible on the higher emitting EUs could be extrapolated for the lower emitting mercury retort.

Fuel Tanks EUs 126-142, 150 – 152, and 156

These fuel tanks have combined potential VOC emissions of 1.7 tpy and no economic analyses were performed to demonstrate that the top level controls would be economically infeasible.

6. Please provide economic analyses demonstrating that vapor combustion units would be economically infeasible for the tanks and that a floating roof design would be economically infeasible for the large diesel tanks EUs 126 - 140, or propose the top level control.

Incinerators EUs 27 – 28

The larger waste camp incinerator EU 27 has potential CO emissions of 0.35 tpy, NOx emissions of 0.8 tpy, and particulate emissions of 0.32 tpy. The smaller sewage sludge incinerator EU 28 has potential CO emissions of 0.1 tpy, NOx emissions of 0.06 tpy, and particulate emissions of 0.009 tpy. The application includes no controls for the incinerators other than good combustion practices. The RBLC has at least one example each of incinerators using the following controls: SCR, SNCR, low NOx burners, and flue gas recirculation to control NOx emissions, an oxidation catalyst to control CO emissions, and a dust collector/fabric filter to control particulate emissions.

7. Please provide economic analyses demonstrating that potential emissions reductions from the controls listed above are not economically feasible or propose the top level control. Note that an economic analysis showing a control to be economically infeasible on the higher emitting camp waste incinerator could be extrapolated for the lower emitting sewage sludge incinerator.

Feel free to contact me by email or telephone if you have questions or concerns regarding this request or any associated matters regarding the new construction permit.

Regards,

Dave Jones

Environmental Engineering Associate I
ADEC – Air Quality – Juneau
dave.jones2@alaska.gov
907.465.5122