



Matthew Reece
Tongass National Forest
NEP SEIS
8510 Mendenhall Loop Road
Juneau, Alaska 99801

May 23, 2023

**Re: Hecla Greens Creek Mining Company, Greens Creek Mine North Extension Project
Draft SEIS Comments**

Dear Mr. Reece:

Hecla Greens Creek Mining Company (HGCMC) would like to submit the attached comments on the draft Supplemental Environmental Impact Statement (SEIS) concerning the Greens Creek Mine North Extension Project.

Completion of the SEIS is critically important to continued mine operations and our ability to contribute to the domestic mineral supply chain. Our significant production of the critical mineral zinc as well as metals essential to the decarbonization of our economy like silver underscore the importance of completing the SEIS in a timely fashion.

Alternative D is HGCMC's preferred alternative. When considering environmental and economic resources, Alternative D is the most feasible and efficient option of the three action alternatives because it maximizes capacity relative to acres disturbed, allows the Forest Service to evaluate up to 40 years of operating life instead of the 15-25 years associated with Alternatives B and C, and minimizes the need for further redundant environmental analyses. This alternative would utilize the tailings and waste rock storage capacity more efficiently with less surface disturbance per unit of extension capacity than Alternative B, which was the original proposed action. If Alternative B is selected, the long-term cumulative disturbance acreage associated with additional expansions will be greater than associated with Alternative D because the B Road would need to be relocated to the west side of the stack, thereby resulting in two new crossings over Canner Creek, rather than one. Additionally, this alternative would not dispose of tailings in any fish-bearing portion of Tributary Creek and would impact less than 1/100th of 1% of the Admiralty Island National Monument.

HGCMC appreciates the hard work that the U.S. Forest Service have put into this project and look forward to working with you to complete the SEIS process.

Please call me at 907-790-8461 or email me at mstearns@hecla-mining.com if you have any questions about these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read "Martin Stearns", is written over a light blue horizontal line.

Martin Stearns
Environmental and Surface Operations Manager
Hecla Greens Creek Mining Company

Greens Creek Mine North Extension Project SEIS - HGCMC Comments on the Draft SEIS

Comment Number	Page(s)	Section	Line(s)	Comment
1	S-1	Summary		Please update this section to state that most of TDF is on Tongass National Forest land, not on the Monument.
2	S-1	Summary		The statement that "the TDF is currently approved to hold approximately 8.5 million cubic yards of tailings and waste rock and cover approximately 127 acres..." is misleading. The total area associated with the tailings stack is 127 acres, but tailings only occur 66.7 acres. Please update to reflect this.
3	S-5	Table ES-2	Air quality and climate, Alternative D, Fugitive dust deposition.	The air quality modeled fugitive dust deposition amounts are provided in Sections 3.2.2.4 through 3.2.2.6, and Figures 3.2-2 through 3.2-5 and Figure 3.2-9. Figures 3.2-2 through 3.2-5 display "cumulative" fugitive dust deposition densities based on a "high" and "low" scale for each alternative. Figure 3.2-9 displays the "cumulative" fugitive deposition amounts by watershed based on a "high", "medium", and "low" scale for each alternative. The figures and text that support the fugitive dust deposition (amount) impact noted in Table ES-2 contain two issues. First, the language in these discussions suggests that the deposition scale from "low" to "high" represents modeled deposition amounts that are normalized against a maximum modeled deposition amount. However, no scientific studies or regulatory standards are provided to explain why the USFS considers a given deposition amount "high", "medium", or "low". These descriptors could be misleading if the deposition amount that is used to normalize the other modeled deposition amounts is small relative to "high" deposition amounts that have been established by scientific studies and/or regulatory standards. In other words, a normalized "high" deposition amount does not necessarily equate to a "high" impact. Second, the fugitive dust modeling results in Section 3.2.2 do not align with the referenced Fugitive Dust Deposition Modeling Report. The modeling analysis as described in the report was designed to evaluate potential particulate matter deposition impacts from the no-action alternative and the action alternative years when tailings construction and B-Road relocation activities would occur concurrently with operations. This modeling approach was reviewed and approved by the USFS for characterizing maximum annual and monthly impacts from all action alternatives for comparison to the no action alternative. The modeling analysis was not designed to provide multi-year cumulative impacts that would occur for the entire duration of each action alternative. For this reason, using the model results to calculate multi-year impacts for each action alternative greatly over-predicts the fugitive dust impacts for each action alternative. For these reasons, HGCMC requests that the fugitive dust deposition (amount) impact for Alternative A, B, C, and D be revised to "low" in Table ES-2.
4	1-4	1.1		Please add a statement that cumulative effects and other analysis in the SEIS is also consistent with CEQ regulations issued in 2020, as further amended in 2022.
5	2-15	2.3.3.3 and 2.3.3.4		The last line in these sections states that the stack would have a surface area of 87.3 acres, but Table 2.3-2 reports 83.9 acres for the stack. Further, this implies an exposed tailings surface, but that is not consistent with the reported exposed surface area discussed in subsequent sections. Please update this section with the correct acreages and language.

Comment Number	Page(s)	Section	Line(s)	Comment
6	2-3	2.3.1.1; 2.3.5.3		HGCMC currently has authorization to cut all trees within the existing FS Lease boundary pursuant to a timber sale executed November 2014 and is currently valid through Oct 2023.
7	2-31	2.3.5.4		The text states the Pond 7/10 embankment would be raised 6 feet. The raise would be 7 feet. Please update the sentence to the correct embankment raise of 7 feet.
8	2-32	2.4.1	Last sentence first paragraph	The last sentence states that "...options and alternatives are not carried forward...as they... did not address the issues associated with the proposed alternative in this SEIS. " Please clarify what is meant by this rational for not addressing additional TDF locations.
9	2-33	2.4.1	Third paragraph of that section last line	The last sentence states "In addition to the evaluation criteria for alternatives described above... " The description of the evaluation criteria is not described in the sections before and after this section nor in this section. Please consider explicitly identifying the TDF location criteria used.
10	2-35	2.4.2.3		Phrase, "the location of Pond D in proximity to Hawk Inlet port facilities would represent a high potential for loss of life in the event of a dam failure at the southern end of the pond..." The word "southern" should be replaced with "northern". Please update the correct direction.
11	2-4	2.3.1.5/Figure 2.3-2		Statement is made that the fresh water collection system would be relocated within the existing lease boundary, but fig 2.3-2 shows it outside the lease boundary. Either is acceptable to HGCMC, but the language needs to be consistent with the figure. Please update either the language or the figure.
12	2-9	2.3.3.1		HGCMC did not definitively say the embankment between Pond 7 and Pond 10 would be raised. Please update to reflect this.
13	2-40	2.4.4.2	Last sentence	In the last statement please remove the phrase "and economically."
14	2-43	Table 2.4.2	POSA Options	No option 2. Please add in Option 2 or renumber the entries.
15	2-50	Table 2.6-1	AQ-1	The DSEIS states the fugitive dust mitigation and monitoring plan must be finalized within six months following approval of the final ROD. It is not clear whether "finalized" means submitted to the Forest Service or approved by the Forest Service. HGCMC requests that at least 6 months to prepare and submit the plan following approval of the final ROD.

Comment Number	Page(s)	Section	Line(s)	Comment
16	2-50	Table 2.6-1	AQ-1	Please edit the first paragraph of Mitigation Measure AQ-1 in Table 2.6-1 as follows. "Develop a Forest Service-approved fugitive dust mitigation and monitoring plan in consultation with ADEC and EPA finalized within 6 months following approval of the final ROD. This plan would improve existing BMPs and mitigation practices listed in Section 3.2.2. Improvements may include <u>or</u> identifying additional measures to prevent the mobilization of fugitive dust from the TDF and to <u>evaluate the monitor effectiveness of the dust monitoring program to achieve near-zero fugitive dust detection at monitoring sites. Near-zero fugitive dust detection at monitoring sites during a typical dusting season (December through February) would be required prior to proceeding with expansion activities under any of the action alternatives."</u> HGCMC is requesting these changes for the following reasons. The term "near-zero" is vague and may be interpreted to mean anything ranging from zero to a value greater than zero and representative of an acceptable dust deposition rate. Rather than establishing a nearly impossible standard, the Forest Service should allow HGCMC to develop an adaptive management approach that allows HGCMC to implement various measures to control fugitive dust emissions from the TDF. If the USFS determines that a measurement threshold is needed to authorize expansion activities under any action alternative, then HGCMC requests that the USFS provide a concise, quantitative value for clarity in addition to the scientific and regulatory basis for the threshold. Additionally, the proposed mitigation measure is overly stringent because the monitoring methodologies are incapable of discerning the exact source, or sources, of the measured fugitive dust levels. As a result, Mitigation Measure AQ-1 could result in HGCMC delaying or canceling expansion activities because of the detection of fugitive dust, or another category of particulate matter, originating from an off-site source or a source with no lead concentrations.
17	2-50	Table 2.6-1	AQ-1 Bullet point 2	Please remove the second bulleted item in its entirety in Table 2.6-1, which contains a proposed element of Mitigation Measure AQ-1. As written, the proposed element is overly stringent and burdensome. The proposed approach requires implementing mitigation measures regardless of the amount of dust that is measured and regardless of identification of the actual source, or sources. This approach could require HGCMC to implement expensive and complex mitigation measures that may not effectively control the actual source of monitored fugitive dust emissions. In other words, the requirement could potentially cost HGCMC considerable time and money for inadequate dust control measures. Furthermore, some mitigation measures would require an engineering and design process that is relatively complex and would likely require much more time than one month to adequately implement.
18	2-50	Table 2.6-1	AQ-1 Bullet Point 3	Please change the sentence to read "additional qualitative deposition and lichen monitoring sampling sites..."
19	2-50	Table 2.6-1	AQ-1 Bullet Point 4	HGCMC requests that "or an approved equivalent" is added to the mitigation measure.

Comment Number	Page(s)	Section	Line(s)	Comment
20	2-50	Table 2.6-1	AQ-1 Bullet points 7 and 8	Please remove the seventh and eighth bulleted items in their entirety from Table 2.6-1. It appears that the USFS is proposing to use the deposition model analysis as a tool to predict the times and locations of actual fugitive dust impacts. However, the USFS acknowledges in Section 3.2.2 of the draft SEIS that there are several limitations inherent to the modeling analysis that result in the over-prediction of fugitive dust impacts. Conducting a new deposition modeling analysis after collecting an additional 5-year meteorological data set will not resolve this issue. Furthermore, even if the new deposition model analysis could accurately characterize actual deposition rates at all model receptors, the analysis would be representative only of the five meteorological model years and any subsequent years with the exact same meteorological conditions. It is unreasonable to expect that deposition modeling can be tuned to accurately predict fugitive dust impacts because of the inherent complexities of the model, including the variable meteorological conditions that can occur from year to year. For these reasons, HCGCM believes that the development of additional mitigation should be based on monitoring actual fugitive dust emissions, in lieu of attempting to develop a predictive model that is severely limited in its predictive capabilities.
21	2-51	Table 2.6-1	SW-1 (1)	Additional water quality and sediment monitoring locations will not bring Tributary Creek "back into compliance..." . Please remove this erroneous correlation. HCGCM does not believe additional sampling locations are needed. If additional monitoring sites are needed to assess Tributary Creek compliance status, please provide rational for why they are needed and why the existing monitoring network is inadequate.
22	2-51	Table 2.6-1	SW-1 (2)	HCGCM requests that Greens Creek be removed from the additional water quality and sediment monitoring locations. Access to Greens Creek within the area is very hard because of terrain and will have limited value added beyond the existing monitoring plan.
23	2-51	Table 2.6.1	AR-2	Please clarify what additional information the risk assessment will provide that the risk characterization completed by HCGCM did not provide. Additionally what is specifically missing that was not addressed in the previously submitted Site Risk Characterization.
24	2-52	Table 2.6-1	AR-3	HCGCM requests that this mitigation be revised to require the development of an approved culvert mitigation plan. HCGCM does not agree with some of the USFS assessments of the crossings. For example, the September 2021 FS Culvert Inspection Report identifies the 8.58 B-road culvert as "red" for gradient (3.9%). The native stream channel of Bruin Creek in that reach is much steeper.
25	2-52	Table 2.6-1	S-1	Please explain the justification for the 36 inch depth requirement.
26	2-53	2.7	Last line first paragraph	Please update the line that references figure 2.3-2 to figure 2.3-5.

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27	2-58	Table 2.9-1	Air quality and climate, Alternative D, Fugitive dust deposition	The air quality modeled fugitive dust deposition amounts are provided in Sections 3.2.2.4 through 3.2.2.6, and Figures 3.2-2 through 3.2-5 and Figure 3.2-9. Figures 3.2-2 through 3.2-5 display "cumulative" fugitive dust deposition densities based on a "high" and "low" scale for each alternative. Figure 3.2-9 displays the "cumulative" fugitive deposition amounts by watershed based on a "high", "medium", and "low" scale for each alternative. The figures and text that support the fugitive dust deposition (amount) impact noted in Table ES-2 contain two issues. First, the language in these discussions suggests that the deposition scale from "low" to "high" represents modeled deposition amounts that are normalized against a maximum modeled deposition amount. However, no scientific studies or regulatory standards are provided to explain why the USFS considers a given deposition amount "high", "medium", or "low". These descriptors could be misleading if the deposition amount that is used to normalize the other modeled deposition amounts is small relative to "high" deposition amounts that have been established by scientific studies and/or regulatory standards. In other words, a normalized "high" deposition amount does not necessarily equate to a quantitative "high" impact. Second, the fugitive dust modeling results in Section 3.2.2 do not align with the referenced Fugitive Dust Deposition Modeling Report. The modeling analysis as described in the report was designed to evaluate potential particulate matter deposition impacts from the no-action alternative and the action alternative years when tailings construction and B-Road relocation activities would occur concurrently with operations. This modeling approach was reviewed and approved by the USFS for characterizing maximum annual and monthly impacts from all action alternatives for comparison to the no action alternative. The modeling analysis was not designed to provide multi-year cumulative impacts that would occur for the entire duration of each action alternative. For this reason, using the model results to calculate multi-year impacts for each action alternative greatly over-predicts the fugitive dust impacts for each action alternative. For these reasons, HGCMC requests that the fugitive dust deposition (amount) impact for Alternative A, B, C, and D be revised to "low" in Table 2.9-1.
28	3-9	3.2.1.3	Table 3.2-1, temperature data listed for the second half of year 2020	Please evaluate whether the statistical monthly ambient temperature values in Table 3.2-1 for the period from July 2020 to December 2020 are correct. It appears that the statistical temperature values for the period from July 2020 through December 2020 are likely in terms of degrees Celsius, instead of degrees Fahrenheit. Regardless, the values appear to be inconsistent in comparison with the monthly statistical temperature values for years 2017 through 2019.
29	3-12	3.2.1.6	Paragraph 1, line 2	Please revise the referenced Title V Operating Permit No. to be consistent with the current permit, Title V Operating Permit No. AQ0302TVP04.
30	3-13	Table 3.2-3	Permitted Stationary Emissions Sources	The emissions listed in the table for Permitted Stationary Emission Sources appear to vary slightly when compared to their respective permits. Please revise these emissions to be consistent with the Statement of Basis for Permit No. AQ0302TVP04 and with Permit No. AQ0853ORL03.
31	3-16	3.2.1	Last paragraph	Please provide context for the concentrations closer to the TDF. Should include more discussion on what the conditions were immediately adjacent to the TDF.

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32	3-17	3.2.2.1	Fugitive Dust Modeling- Paragraph 3, line 1	Please revise the first sentence in Paragraph 3 of Section 3.2.2.1 Fugitive Dust Modeling, on Page 3-17, as follows for consistency with the objective stated in the Fugitive Dust Deposition Modeling Report, which was reviewed and approved by the USFS. "The objective was to quantify potential fugitive dust deposition impacts from fugitive dust emissions assess fugitive dust from tailings to off-site locations associated with two activities at the TDF."
33	3-17	3.2.2.1	Modeling Scenarios-Paragraph 1, line 1, and Paragraph 3, line 1	Please revise as follows to align with the Fugitive Dust Deposition Modeling Report, which was reviewed and approved by the USFS. The Fugitive Dust Deposition Modeling Report provided an analysis of conservative fugitive dust impacts for two conservative scenarios associated with the two large activities; the tailings construction and the B-Road relocation. Routine tailings placement activities were incorporated into these models, but the model analysis did not account for routine operating years after construction activities have finished. As a result, the model analysis was not designed for the assessment of the cumulative fugitive dust impacts across all years of a given action alternative. As written, the model scenario descriptions are inconsistent with the scenarios described in SEIS Table 3.2-5 and the Fugitive Dust Deposition Modeling Report. "The modeling analysis was designed to characterize PM deposition amounts for two activities associated with the proposed alternative and alternatives C and D...The tailings stack construction and B-Road relocation activities were each each major activity was modeled as a separate scenario so that annual and monthly maximum cumulative impacts over multiple years would be addressed for the proposed alternative and alternatives C and D. "
34	3-18	3.2.2.1	Paragraph 2 after table 3.2-5	Please correct reference to figures 3 and 4 of Appendix A of the dust report to figures 2 and 4.
35	3-19	3.2.2.1	Emissions Calculation Methodology- Paragraph 4, line 1	Please revise the first sentence of Paragraph 4 of Section 3.2.2.1, Emissions Calculation Methodology, Page 3-19, as follows. Particulate matter emissions were calculated based on emission factors for total suspended particulate, which is mostly composed of PM30 because of limitations in conventional measurement methodologies. The total suspended particulate emissions were divided into size categories for deposition model input only after calculating the modeled emission rates. "Emission amounts in mass per hour were calculated for particles sized up to 30 micrometers (µm) in diameter, divided into four size categories (i.e., bins). "
36	3-22	3.2.2	Limitations of the Model- Bullet Point 4	Please rewrite this bullet point to clarify that only 1 year of data was used because it was the only year available with all the required EPA requirements for modeling analysis. However this data may not be representative of normal annual wind conditions experienced at the site. Please clarify this point in this section.

Comment Number	Page(s)	Section	Line(s)	Comment
37	3-25, 3-26, and 3-29 through 3-38	Sections 3.2.2.3 through 3.2.2.6, Fugitive Dust Deposition Subsections, and Figures 3.2-2 through 3.2-9	Each of the Fugitive Dust Deposition subsections and Figures 3.2-2 through 3.2-9	Please revise the language in these sections and the figures to clarify that the modeling analysis was designed to evaluate potential particulate matter deposition impacts from the no-action alternative and the action alternative years when tailings construction and B-Road relocation activities would occur concurrently with operations. This modeling approach was reviewed and approved by the USFS for characterizing maximum annual and monthly impacts from all action alternatives for comparison to the no action alternative. The modeling analysis was not designed to provide multi-year cumulative impacts that would occur for the entire duration of each action alternative. For this reason, using the model results to calculate multi-year impacts for each action alternative greatly over-predicts the fugitive dust impacts for each action alternative, especially Alternative D that provides a longer mine life. As an example, the following revisions are recommended from Section 3.2.2.4, Deposition in Watersheds, Paragraph 2, Page 3-35: "The modeling of fugitive dust deposition (see Section 3.2.2.4) suggests that annual cumulative deposition amounts under the proposed alternative during the B-Road construction phase would be greater than with the no-action alternative and <u>greater</u> but less than with alternatives C and D, as illustrated on Figure 3.2-2 through Figure 3.2-5. <u>Cumulative deposition</u> amounts for the life of the mine were not modeled, however, the higher cumulative deposition amounts for the proposed alternative relative to the no-action alternative would be attributed to the extent of open areas and the extended life of the Mine by 12 to 18 years." In addition, Figures 3.2-2 through 3.2-5 indicate that multi-year cumulative deposition amounts were modeled. Please revise these figures to indicate that the model analysis represents a single-year for the no-action, tailings placement, and B-Road construction activities. Figures 3.2-6 through 3.2-9 should also be revised accordingly.
38	3-26 and 3-30 through 3-32	Figures 3.2-2 through 3.2-5	Figures 3.2-2 through 3.2-5	Please revise the deposition density scale in the legends of Figures 3.2-2 through 3.2-5 to go from "lower" to "higher" for consistency with the figure discussions. And for clarity, please provide a discussion of how the scales were established. It appears in the existing discussion and analysis shown in Figures 3.2-6 through 3.2-8 that the scale represents modeled deposition densities that are normalized against a maximum modeled deposition density. However, no scientific studies or regulatory standards are provided to explain why the USFS considers a given deposition density "low" or "high", as currently noted in the figure legends. These descriptors could be misleading if the maximum deposition density that is used to normalize the scale is small relative to "high" deposition amounts that have been established by scientific studies and/or regulatory standards. In other words, a normalized "high" deposition amount does not necessarily equate to a "high" impact.
39	3-29	Table 3.2-8	Permitted Stationary Emissions Sources	The emissions listed in the table for Permitted Stationary Emission Sources appear to vary slightly when compared to their respective permits. Please revise these emissions to be consistent with the Statement of Basis for Permit No. AQ0302TVP04 and with Permit No. AQ0853ORL03.

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40	3-35	3.2.2.4	Figure 3.2-9	For clarity, please provide a discussion of how the descriptors of "high", "medium", and "low" shown in Figure 3.2-9 were established and how they relate to the amount of deposition. It appears that these descriptors represent modeled deposition amounts that are normalized against a maximum modeled deposition amount. However, no scientific studies or regulatory standards are provided to explain why the USFS considers a given deposition rate "high", "medium", or "low". These descriptors could be misleading if the deposition amount that is used to normalize the other modeled deposition amounts is small relative to "high" deposition amounts that have been established by scientific studies and/or regulatory standards. In other words, a normalized "high" deposition amount does not necessarily equate to a "high" impact. If the descriptors are indeed based on normalization to the maximum modeled deposition amount, HGCMC requests that the "high" descriptor be revised to "higher" and "low" to "lower".
41	3-38	3.2.2.7	Mitigation Measure AQ-1 Paragraph 1	Please edit the first paragraph of Mitigation Measure AQ-1 as follows. "The applicant will develop a Forest Service-approved fugitive dust mitigation and monitoring plan in consultation with ADEC and EPA finalized within 6 months following approval of the final ROD. This plan will improve existing BMPs and mitigation practices listed in Section 3.2.2.2. Improvements may include <u>or</u> identifying additional measures to prevent the mobilization of fugitive dust from the TDF and to evaluate the <u>monitor</u> effectiveness of the dust monitoring program. to achieve near-zero fugitive dust detection at monitoring sites. Near-zero fugitive dust detection at monitoring sites during a typical dusting season (December through February) would be required prior to proceeding with expansion activities under any of the action alternatives." HGCMC is requesting these changes for the following reasons. The term "near-zero" is vague and may be interpreted to mean anything ranging from zero to a value greater than zero and representative of an acceptable dust deposition rate. If the USFS determines that a measurement threshold is needed to authorize expansion activities under any action alternative, then HGCMC requests that the USFS provide a concise, quantitative value for clarity in addition to the scientific and regulatory basis for the threshold. Additionally, the proposed mitigation measure is overly stringent because the monitoring methodologies are incapable of discerning the exact source, or sources, of the measured fugitive dust levels. As a result, Mitigation Measure AQ-1 could result in HGCMC delaying or canceling expansion activities because of the detection of fugitive dust, or another category of particulate matter, originating from an off-site source.
42	3-38	Section 3.2.2.7,	Mitigation Measure AQ-1- Bullet point 2	Please remove the second bulleted item in its entirety from Section 3.2.2.7, which contains a proposed element of Mitigation Measure AQ-1. As written, the proposed element is overly stringent and burdensome. The proposed approach requires implementing mitigation measures regardless of the amount of dust that is measured and regardless of identification of the actual source, or sources. This approach could require HGCMC to implement expensive and complex mitigation measures that may not effectively control the actual source of monitored fugitive dust emissions. In other words, the requirement could potentially cost HGCMC considerable time and money for inadequate dust control measures. Furthermore, some mitigation measures would require an engineering and design process that is relatively complex and would likely require much more time than one month to adequately implement.
43	3-39	3.3.1.1		Please update the last sentence to read "No landslide activity has occurred <i>within</i> the study area."

Comment Number	Page(s)	Section	Line(s)	Comment
44	3-39	Section 3.2.2.7	Mitigation Measure AQ-1-Bullet points 7 and 8	Please remove the seventh and eighth bulleted items in their entirety from Section 3.2.2.7. It appears that the USFS is proposing to use the deposition model analysis as a tool to predict the times and locations of actual fugitive dust impacts. However, the USFS acknowledges in Section 3.2.2 of the draft SEIS that there are several limitations inherent to the modeling analysis that result in the over-prediction of fugitive dust impacts. Conducting a new deposition modeling analysis after collecting an additional 5-year meteorological data set will not resolve this issue. Furthermore, even if the new deposition model analysis could accurately characterize actual deposition rates at all model receptors, the analysis would be representative only of the five meteorological model years and any subsequent years with the exact same meteorological conditions. It is unreasonable to expect that deposition modeling can be tuned to accurately predict fugitive dust impacts because of the inherent complexities of the model, including the variable meteorological conditions that can occur from year to year. For these reasons, HCGCM believes that the development of additional mitigation should be based on monitoring actual fugitive dust emissions, in lieu of attempting to develop a predictive model that is severely limited in its predictive capabilities.
45	3-40	Figure 3.3-1		Please clarify or site the origin of this figure. Please also clarify why the MMI 3 zone stops at the monument boundary.
46	3-41	3.3.1.2		Please update this section to include the fact that peat has been removed from beneath most of the TDF footprint.
47	3-41	3.3.1.2		The second paragraph references the HDR audit as the reason for the technical review, which is not correct. The tech review was a requirement of the temporary certificate of approval to operate issued in 2018. Please update the text.
48	3-44	3.3.2.4		Please update the text to specify the 6' raise of the Pond 7/10 embankment would include ~3' of fill and a 3' parapet wall.
49	3-45	3.3.2.5		Please update the text to specify the 7' raise of the Pond 7/10 embankment would include ~3' of fill and a 4' parapet wall.
50	3-51	3.4.2.4		Please update this paragraph to state that the existing capacity is 8.5MCY.
51	3-51	3.5.1.2		First paragraph states that changes to existing conditions occurred because of additional data collection. Please reword this statement or remove the reason that an existing condition changed was because of data collection.
52	3-54	Table 3.5-2	Cannery Creek	Please remove the text from "there is a 9-meter waterfall..." through to "...and spawning habitat." This refers to the creek at the head of Hawk Inlet, not Cannery Creek. See pdf page 19/421 of ADEG 2019 for the correct description of Cannery Creek.
53	3-55	Table 3.5-2		Water is diverted around the TDF to either the Cannery or Tributary watershed. None is diverted to the South Hawk Inlet watershed. Please update the description.
54	3-56	Fig 3.5-1		The Hawk Inlet Facilities watershed is not labeled, and the Middle Hawk Inlet watershed is labeled as "Hawk Inlet Camp." Please update the figures with the correct labels.
55	3-57	3.5.1.4	Line 8	"The FWMP was originally limited to several monitoring sites on Greens Creek". The original FWMP for the 1997 Water Year (10/96 - 9/97) consisted of 7 surface water sites and 11 groundwater wells, and included locations at Site 23 and the TDF. Six of the surface water sites and 3 of the groundwater wells are still monitored under the current FWMP. The other sites have been abandoned (or lost) due to prior expansions of the TDF and Site 23. Please update with this correct information.
56	3-59	Table 3.5-3		Site 61 is not near Hawk Inlet. It is near Site 23. Please update the table.

Comment Number	Page(s)	Section	Line(s)	Comment
57	3-61	3.5.1.4	Line 9	Discussion on Site 60 states "the elevated mercury levels are thought to be attributed to fugitive dust from the TDF". HGCMC requests this statement be removed as it is an erroneous statement or provide a basis for this statement.
58	3-61	3.5.1.4	16	"Site 9 regularly exceeded screening thresholds of alkalinity and pH....". This is the natural condition for a weakly acidic muskeg environment. Please clarify this statement.
59	3-68	Table 3.5-6	Outfall 002	Please remove the Outfall 002 monitoring site description as it is not within the footprint of the TDF. Please also change the description column to "Submarine outfall discharges treated contact water."
60	3-70	3.5.1.6	Top paragraph on page- Line 4	The description of the existing design of inflow volume to Pond 7/10 is confusing. HGCMC suggests revising the sentence to read: The capacity of Pond 7 is 66.9 acre feet which with continuous treatment and discharge to outfall 002 is sufficient to store the 25-year 24-hour event without release of untreated water to the environment.
61	3-77	3.5.2.2	Fugitive Dust	In each of these Fugitive Dust sections please include a brief reference to that fact that the model is an extremely conservative assessment as opposed to a quantitative measure of actual fugitive dust.
62	3-77	3.5.2.2	Fugitive Dust	Please update the sentence: Modeling suggests that most of the fugitive dust from the TDF is potentially deposited on the watersheds overlapping the study area (South Hawk Inlet, Tributary Creek, and Cannery Creek) and is concentrated in the South Hawk Inlet and Tributary Creek watersheds due to their proximity to the tailings stack and the prevailing wind directions. Metals are potentially leached from the fugitive dust and are flushed into nearby creeks during precipitation events.
63	3-77	3.5.2.2	Fugitive Dust	Please update the following sentence: Fugitive dust modeling also supports the premise that Tributary Creek, south of the TDF, would potentially continue to be affected by fugitive dust deposition that could affect water quality from north wind events, which is the predominant wind direction at the site.
64	3-77	3.5.2.2	Fugitive Dust	Please update the following sentence: Fugitive dust modeling results suggests that a small volume of fugitive dust is potentially deposited directly into Hawk Inlet (Figure 3.2-2)
65	3-78	Table 3.5-9		HGCMC would like the text or footnote to clarify the data presented in the table. Specifically in regards to the fact that the data needs to be caveated with the statement that "Metals with very low concentrations (e.g. Hg, Cd and Ag) are sensitive to input concentrations, which for several source waters were estimated using detection limit values. This may lead to an over-estimation of concentrations." This was discussed in the reference text.
66	3-80	3.5.2.3	Fugitive Dust	Please update the sentence: As discussed in Section 3.2, "Air Quality and Climate," the fugitive dust deposition model suggests that cumulative deposition amounts under the proposed alternative would be potentially greater than under the no-action alternative, which would be attributed to the extent of open areas and the extended life of Mine by 12 to 18 years. Consequently, the proposed alternative would lead to potentially greater impacts on surface water and . . .
67	3-81	Sec. 3.5.2.3	Freshwater Source- Paragraph 2	Section states that monitoring under the FWWP would mitigate the effects of additional fugitive dust to freshwater. Monitoring by itself would not mitigate any impacts, but could be used to direct other mitigation measures. HGCMC suggests rewording to indicate such and update throughout document.
68	3-81	3.5.2.3	Water Management- Paragraph 1, line 4	Please revised as follows: "...which would be routed to Pond 7/10 via new and existing pipelines and treated and discharged under the Mine's existing APDES permit."
69	3-81	3.5.2.3	Water Management- Paragraph 2, line 9-10	A spill through the spillway is not a breach. Breach refers to a breach of the dam which could lead to a structural failure. Please revise this statement.

Comment Number	Page(s)	Section	Line(s)	Comment
70	3-81	Table 3.5-11		Please clarify where did the "average water treatment rates" come from. The reference provided for the table does not match the contents of the table.
71	3-83	3.5.2.4	Fugitive Dust	Please update the sentence: Consequently, alternative C would lead to potentially greater impacts on the environment resulting from increased cumulative deposition amounts from the TDF as compared to the proposed alternative. Based on the modeling results, alternative C would potentially have slightly higher deposition impacts on Fowler Creek, Middle Hawk Inlet, and Zinc Creek watersheds and potentially have moderate impacts on Cannery Creek, Hawk Inlet Camp, South Hawk Inlet and Tributary Creek watersheds as compared to the proposed alternative.
72	3-84		Paragraph 1, last sentence	Please revise the last sentence to read: Alternative C would result in 5.5 acres more catchment area reporting to Pond 7/10 than the proposed action which would require treatment of a larger volume of contact water relative to the proposed action
73	3-86	3.5.2.5	Water Management	The reference to 1,490 gpm as a reason for increasing the pond size is incorrect. The pond is being expanded to account for the increased peak runoff volume, not the average runoff volume. Please update to reflect this.
74	3-86	3.5.2.6		Please describe what is the regulatory justification for requiring more rapid compliance than imposed by ADEC?
75	3-88	3.6.2.1	Undifferentiated Glacial Marine Unit	Please change the statement that the unit slopes towards the west at ~4 degrees to 4%.
76	3-98	3.6.2.4	Paragraph 3	Please remove the reference to "one water quality well upgradient of rock area 23." This refers to the Site 23 active waste rock facility and is outside the scope of the NEPA analysis.
77	3-99	Table 3.6-2		Please remove 057FMG as it relates to active waste rock facility Site 23 and is outside the scope of the NEPA analysis.
78	3-102	3.6.3.2	Paragraph 1, line 8	Please add "to the south" after Tributary Creek.
79	3-107	3.7.1.2	Paragraph 2	Please correct the statement that the 1989 fish pass was made of concrete. The 1989 fish pass was made of timber. HGCMC rebuilt it in 2016 out of concrete.
80	3-107	3.7.12	Paragraph 2-last three lines	Please rewrite the last three lines to read: "Prior to any development on Greens Creek, a natural rock chute blocked fish passage from progressing past the 3.6 river mile. Greens Creek installed a weir upstream of this natural blockage at the 920 site. In 1989 the previous Mine operator engineered a timber fish pass in the rock chute at river mile 3.6 (Jacobs et al. 2003) as required per the EIS. Before this fish pass was installed fish did not have access to upper Greens Creek. The fish pass provided miles of additional fish spawning habitat up to the Mine's weir. The original timber structure was damaged and deteriorated and was subsequently replaced in 2016 by the Mine."
81	3-107	3.7.1.2	Last paragraph	Please correct the following sentence: "Aquatic biomonitoring was conducted annually and included two sites on Greens Creek" and one site on Tributary Creek.
82	3-108	3.7.1.2, para 1 (top of page)		References to figure 3.5-3 are incorrect. I believe the reference should be to Fig 3.5-2.
83	3-109	3.7.1.3	Cannery Creek; Paragraph 1	The secondary withdrawal point has not been used but is still authorized by Water Right ADL 43347. It has not been abandoned.
84	3-109	3.7.1.3	Cannery Creek; Paragraph 1	The relic dam is about 350m upstream of tidewater (~1,150 ft), not 1,500 ft
85	3-109	3.7.1.3	Paragraph 2	Please update the following sentence: Tributary Creek has been designated as a category 4b waterbody by ADEC due to exceedance exceedance of the dissolved lead threshold "for toxic and other deleterious organic and inorganic substances standard for the chronic freshwater aquatic life designated use" (ADEC 2020a). The change is requested to match the language in the 4b demonstration.

Comment Number	Page(s)	Section	Line(s)	Comment
86	3-109	3.7.1.3	Paragraph 2	Please correct the information regarding Cannery Creek waterbody. The information appears to be combining information from Cannery Creek and an unnamed stream at the head of Hawk Inlet sampled by ADFG in 2018. The barrier falls is at tidewater, not 300 meters upstream of the mouth.
87	3-109	3.7.1.3	Tributary Creek ; Paragraph 1	Please correct for consistency the Tributary Creek watershed acreage. This paragraph states Tributary Creek watershed is ~482 acres, but Table 3.5-2 says the watershed area is 387 acres.
88	3-110	3.7.1.3	Paragraph 1	Incorrectly states that biomonitoring in Tributary Creek and Greens Creek began in 2001 and 2005, respectively.
89	3-110	3.7.1.3	Greens Creek	Monitoring of both began in 2001. Please update the section.
90	3-110	3.7.1.3	Greens Creek	Please confirm reference to Fig 3.1-1 should likely be to Fig 3.5-1. The text seems to imply there's multiple fish ladders. HGCMC suggests revising and including the river mile reference for the extant fish ladder. Please also use consistent terminology (i.e., fish ladder vs. fish pass")
91	3-110	3.7.1.3, Fowler Creek		Please include a discussion of fugitive dust on Fowler Creek for consistency with other waterbodies in this section
92	3 - 111	Table 3.7-1		Please update the table for Tributary Creek Site 1847 to include the dates for monitoring- 2018-2020.
93	3 - 112	3.7.1.4	Last Sentence	There are multiple factors that can influence benthic macroinvertebrate population and density. HGCMC requests those be listed and also include impacts from beaver activity.
94	3-113	3.7.1.4	Fish, Fish Species & Monitoring in Study Area, Paragraph 3	HGCMC would like it clarified on the statement that coho is on a downward cycle when there was high abundance through 2019. The coho numbers in 2020 were observed to be on a downward trend across southeast Alaska. The drought in 2019 likely led to decreased numbers in 2020.
95	3 - 113	3.7.1.4	Last paragraph on page	"Fish captured at downstream locations registered slightly higher median values for mercury in 2020 compared to long-term values while zinc levels showed greater variability than long-term values". While it is true that mercury at Site 54 in 2020 was elevated compared to long-term values, the min., max., and median concentrations at the upstream reference Site 63 were all higher than those measured at Site 54. To just state that mercury was elevated at the downstream location is misleading. Also zinc levels were within the range of long-term values but lead levels showed greater variability. Did the author mean to state lead instead of zinc?

Comment Number	Page(s)	Section	Line(s)	Comment
96	3 - 114	3.7.1.4	Fish-First full paragraph, top of page	"It should be noted that there is no published information regarding when the elemental threshold values become detrimental to fish health (Legere and Timothy 2016). However, median values for most elements in Dolly Varden char were both statistically different from and higher than those reported for other large mine monitoring projects (Legere and Timothy 2016)." This paragraph appears to be paraphrase from a Technical Report prepared by ADFG on the Tulsequah Chief Mine. The actual text from the report is as follows: "Since the literature does not provide reference levels above which whole body metals concentrations become a liability for salmonids, we compared the pooled mean ranks of juvenile Dolly Varden char whole body metals concentrations among UTR, TRM, and TRB with a 15-year data set collected upstream of the Greens Creek Mine about 92 km southwest of the Tulsequah Chief Mine. The Greens Creek Mine mean rank for each analyte is statistically different and higher than any from UTR, TRM, and TRB." While the referenced report includes data from other large mines in Alaska, the statistical evaluation was only done between data from sites associated with the Tulsequah Chief Mine and the upgradient reference site on Greens Creek. The paraphrased statement in the DSEIS would appear to be inaccurate and is misleading. The paragraph should be deleted.
97	3-114	3.7.1.4	Fish, Fish Species & Monitoring in Study Area, Last Paragraph	The text compares metals concentration to other large mines. However, a justifiable comparison between metals concentrations in fish near the Greens Creek mine and other large mines can only be made if the ore body and regional geology is similar. HGCMC requests this comparison be removed or additional information provided with the above information; otherwise, this is not a reasonable comparison.
98	3 - 128	3.7.3	Bullet Point 1	Please correct the statement that the 1989 fish pass was made of concrete. The 1989 fish pass was made of timber. HGCMC rebuilt it in 2016 out of concrete.
99	3-131	3.7.4.1	Paragraph 4	Please clarify if the discussion on "minor potential impacts from the return of groundwater to Tributary Creek" is referring to the closure period or the operational period. No increase in groundwater would occur under the no-action alternative until closure.
100	3 - 133	3.7.4.1	EFH Middle of Page Paragraph	Please add the following information to the sentence for clarity: "...an unintentional release of effluent into the wetlands at the head of Tributary Creek Hawk-Hole nearly occurred during a December 2020 storm event, when Pond 7/10 neared capacity and effluent was released from above a liner drain at the TDF due to an operator error".
101	3 - 133	3.7.4.1	Last sentence	"...EPT percent composition at both Tributary Creek sites was among the lowest since monitoring began, perhaps indicating a reduction in overall stream water quality conditions in Tributary Creek". HGCMC believes this is attributable to many factors including decreased flow in Tributary Creek as a result of the S3P1 expansion that started in 2015, the tremendous growth of the beaver ponds upstream of the monitoring locations, and the prolonged drought period that SE Alaska experienced, particularly in 2019. Please add in this additional context to prevent misleading information.
102	3-135	3.7.4.2	Stream Flow & Water Quality - Freshwater, Paragraph 1	The reference to Table 3.5-10 appears to be incorrect as that table includes acreages, not % impacts. Please correct the reference.

Comment Number	Page(s)	Section	Line(s)	Comment
103	3 - 135	3.7.4.2	Stream Flow & Water Quality - Freshwater, Paragraph 1 last sentence	Fish only occur at tidewater due to the "bedrock falls near the upper extent of tidal influence" (ADF&G 2020; Tech report 19-01). Please remove relic cannery dam reference as that is not relevant to this area.
104	3-135	3.7.4.2	Stream Flow & Water Quality - Freshwater, Paragraph 2	The assumption that the extended tailings stack would result in a greater exposed surface area is not consistent (except during construction) with the Dust model prepared in support of the Project. Operational parameters, including exposed tailings, are consistent between all alternatives - including the No Action alternative. Please update this inconsistency across the entire DEIS.
105	3-135	3.7.4.2	Stream Flow & Water Quality - Fugitive Dust	Fugitive dust from road construction does not contain tailings, and thereby does not contain lead. Please update this section to be clear that it refers to only lead-free road dust. HGCMC purchases select road rock from off-island sources that are tested to confirm little or no lead content.
106	3-138	3.7.4.2	Fugitive Dust- Marine- Last sentence	This section contradicts a statement earlier that fugitive dust landing in Hawk Inlet would be carried to the shore and accumulated there. Please correct for clarity what the mechanism would be or state that it is unknown.
107	3-138	3.7.4.2	Unintentional Releases-Marine- First sentence	Please correct that concentrate is loaded onto marine ships not barges.
108	3-138	3.7.4.2	Unintentional Releases - Marine	Please correct the second sentence to: "As a result of the incident and subsequent corrective action by HGCMC, the root cause of the incident has been eliminated and that failure mechanism no longer exists, reducing the possibility to none." The discussion implies a similar event could happen again when in fact it can not.
109	3-140	3.7.4.2	EFH, Freshwater EFH, Paragraph 3	Please clarify the statement: "An analysis of spills for the Mine indicates that most spills are water based, to land, and infrequent."
110	3-141	3.7.4.3	Fugitive Dust - Freshwater	The assumption that the extended tailings stack would result in a greater exposed surface area is not consistent (except during construction) with the Dust model prepared in support of the Project. Operational parameters, including exposed tailings, are consistent between all alternatives - including the No Action alternative. Please update this inconsistency across the entire DEIS.
111	3-142	3.7.4.3	APDES Discharge - Marine	Please correct the acreage of catchment as it does not match Table 3.5-12.
112	3-144	3.7.4.3	EFH, Freshwater EFH; 3rd full paragraph on page	Also, please remove the word "likely" in the phrase "...larger volume of contact water would likely need to be treated." The larger footprint would result in the treatment of more contact water.
113	3-145	3.7.4.4	Stream Flow & Water Quality - Freshwater; Last sentence	Please clarify the statement: "An analysis of spills for the Mine indicates that most spills are water based to land and infrequent." Please remove or clarify the statement about returning treated waters upstream of the salmonid locations as needed. This is not an option for HGCMC because the treatment plant doesn't produce water that is freshwater compliant. Further, the statement "additional mitigation requirements may be needed" is not quantitatively supported by the preceding sentence which states that "impacts on stream flow and function from a reduction in runoff could be greater in Tributary Creek where salmonids are present". The DSEIS does not quantify the reduction in runoff, therefore the statement that "additional mitigation requirements may be needed" likewise cannot be quantified.
114	3-146	3.7.4.4	Fugitive Dust - Freshwater	The assumption that the extended tailings stack would result in a greater exposed surface area is not consistent with the Dust model prepared in support of the Project. Operational parameters, including exposed tailings, are consistent between all alternatives - including the No Action alternative. Please update this inconsistency across the entire DEIS.

Comment Number	Page(s)	Section	Line(s)	Comment
115	3-147	3.7.4.4	Fugitive Dust - Marine, line 7	Please change reference to Alt C to Alt D.
116	3-149	3.7.4.4	EFH, Marine EFH	The assumption that the extended tailings stack would result in a greater exposed surface area is not consistent (except during construction) with the Dust model prepared in support of the Project. Operational parameters, including exposed tailings, are consistent between all alternatives - including the No Action alternative. Please update this inconsistency across the entire DEIS.
117	3-149	3.7.4.5	Paragraph 1	Please note that the determination of "may adversely affect" is no different than determined in the 2013 FEIS (Tetra Tech 2012).
118	3-150	3.7.4.5	Paragraph 2 on page	Please note that the determination of "may adversely affect" is no different than determined in the 2013 FEIS (Tetra Tech 2012).
119	3-150	3.7.4.6	Mitigation Measure AR-1	As noted previously, AQ-1 mitigation measure is not consistent with the potential effects identified in the analysis. Please correct this mitigation measure to monitoring measure.
120	3-150	3.7.4.6	Expected Effectiveness	For all alternatives the analysis stated that the risk of fugitive dust to the marine environment would be minimal because of the flushing due to tide cycles. Requiring a mitigation measure to address a non-issue is not appropriate. Please remove this mitigation measure from this section.
121	3-151	3.7.4.6	Mitigation AR-3	As a general rule culverts on the Road system do not transport "contact water", which is defined as: "Contact water includes, but is not limited to, water withdrawn from Greens Creek, and Cannery Creek; water from mine dewatering; runoff from waste rock facilities, the 920 mine area, the TDF and port facility; and groundwater from underdrain systems."
				Please revise this statement as appropriate to reflect that the culverts in question do not transport "contact water"
122	3-159	3.8.1.3	Line 1 of first full paragraph	Please clarify what is the "project expansion area" referred to in this paragraph. Is it the Project Study area that extends all the way out the A Road, or is this the area immediately impacted by the Project? Without references to figures, the discussions of wetlands in certain areas are somewhat hard to follow.
123	3-161	3.8.2.1, last 2 bullets		HGCMC does not believe it is appropriate to suggest potential in-lieu fee programs. Please remove these options.
124	3-165	3.8.2.3	Paragraph 4	The assumption that the extended tailings stack would result in a greater exposed surface area is not consistent (except during construction) with the Dust model prepared in support of the Project. Operational parameters, including exposed tailings, are consistent between all alternatives - including the No Action alternative. Please update this inconsistency across the entire DEIS.
125	3-166	3.8.2.4	Paragraph 4	The assumption that the extended tailings stack would result in a greater exposed surface area is not consistent (except during construction) with the Dust model prepared in support of the Project. Operational parameters, including exposed tailings, are consistent between all alternatives - including the No Action alternative. Please update this inconsistency across the entire DEIS.
126	3-170	3.8.2.5	Second full paragraph on page	The assumption that the extended tailings stack would result in a greater exposed surface area is not consistent (except during construction) with the Dust model prepared in support of the Project. Operational parameters, including exposed tailings, are consistent between all alternatives - including the No Action alternative. Please update this inconsistency across the entire DEIS.

Comment Number	Page(s)	Section	Line(s)	Comment
127	3-170	3.8.2.6		Please clarify how AQ-1 will mitigate effects on the wetland environment. The potential effects to wetlands do not justify the proposed AQ-1 mitigation measure.
128	3-193	3.10.2.3		The assumption that the extended tailings stack would result in a greater exposed surface area is not consistent (except during construction) with the Dust model prepared in support of the Project. Operational parameters, including exposed tailings, are consistent between all alternatives - including the No Action alternative. Please update this inconsistency across the entire DEIS.
129	3-197	3.10.2.5		The assumption that the extended tailings stack would result in a greater exposed surface area is not consistent (except during construction) with the Dust model prepared in support of the Project. Operational parameters, including exposed tailings, are consistent between all alternatives - including the No Action alternative. Please update this inconsistency across the entire DEIS.
130	3-209	3.11.2.1		Employees are not prohibited from hunting. Employees are prevented from hunting while on work or from using mine resources to support a hunting activity. They are allowed to hunt on Admiralty Island and around the mine area if they use their own resources, including transportation, to do so. Please update the statement here and across the document.
131	3-209	3.11.2.1		The 1,000-ft buffer between the shore and the facility was not maintained in the 2003 FEIS/ROD. Areas previously approved have encroached on the 1,000-ft buffer. Please remove this statement.
132	3-210	3.11.2.2	Third full paragraph	Please change the word "implemented" to be "unimplemented."
133	3-213	3.11.2.6		Please clarify how AQ-1 will mitigate effects on the wildlife. The potential effects to wildlife do not justify the proposed AQ-1 mitigation measure.
134	3-229	3.13.1.2	Paragraph 2	Please update the text to include the fact that Young Bay road is leased not privately owned.
135	3-249	3.14.2.4	Line 5	Please update the references as the ones specified are for the no-action alternative.
136	3-264	3.15.2.6		Please clarify how AQ-1 will mitigate effects on recreation. The potential effects to recreation do not justify the proposed AQ-1 mitigation measure.
137	3-271	3.16.2.6		Please clarify how AQ-1 will mitigate effects on subsistence. The potential effects to subsistence do not justify the proposed AQ-1 mitigation measure.
138	3-285	3.18.1.2	Mine operations- Paragraph 3	Please update the statement that "most workers employed at the Mine reside in Juneau and commute daily to the Mine..." That is an incorrect statement. Most workers commute from elsewhere in Alaska and the lower 48.
139	3-290	3.18.2	Footnote 69	Please update the reference from HGCMC 2021j to HGCMC 2021k.
140	3-300	3.19.2.3	Paragraph 4	The last sentence states that "...options and alternatives are not carried forward...as they... did not address the issues associated with the proposed alternative in this SEIS. " Please clarify what is meant by this rational for not addressing additional TDF locations.
141	3-302	3.19.2.6		Please clarify how AQ-1 will mitigate effects on Monument resources. The potential effects to Monument resources do not justify the proposed AQ-1 mitigation measure.
142	3-303	3.20.1.2	Background	The final rule repealing the 2020 Alaska Roadless Rule for the Tongass National Forest was published on January 27, 2023. Please update this section to reference this Final Rule.
143	3-312	3.21.4.3	Paragraph 2- Second sentence	The Applicant prohibits its employees from hunting and fishing while working at the site; therefore, continued operation of the Mine past 2031 would not affect competition for subsistence resources.
144	3-317	3.22.2.1	Workforce	Please update the statement to include that the workforce "would remain consistent or increase...."
145	3-320	3.22.3.1	Climate Change	Please update the design storm. HGCMC uses the 50-yr, 48-hr event, not the 50-yr 24hr event. Please verify throughout document.

Comment Number	Page(s)	Section	Line(s)	Comment
146	3-322	3.22.3.4	Bullet Point 1	These numbers in this bullet are inconsistent with the 322 acres reported in the 2nd paragraph in this section. Please update or clarify why they are different.
147	3-323	3.22.3.4	Bullet Point 2	Please update the design storm. HGC MC uses the 50-yr, 48-hr event, not the 50-yr 24hr event. Please verify throughout document.
148	3-324	3.22.3.5	Bullet Point 4	The statement that "Alternatives with greater surface disturbance could contribute more to temporary increases in cumulative dust emissions" is incorrect. The required operational area is independent of alternatives. Please clarify this in the text.
149	3-326	3.22.3.6	Bullet Point 4	Please update the design storm. HGC MC uses the 50-yr, 48-hr event, not the 50-yr 24hr event. Please verify throughout document.
150	3-330	3.22.3.7	Bullet Point 1 on page	The statement that "Alternatives with greater surface disturbance could contribute more to temporary increases in cumulative dust emissions" is incorrect. The required operational area is independent of alternatives. Please clarify this in the text.
151	3-330	3.22.3.7	Bullet Point 2 on page	Please update the design storm. HGC MC uses the 50-yr, 48-hr event, not the 50-yr 24hr event. Please verify throughout document.
152	3-330	3.22.3.7	Bullet Point 2 on page	The "design storm" does not exceed Pond 7/10's storage capacity. This sentence should read " ...likelihood of a storm exceeding..." Please update here and throughout the document.
153	3-331	3.22.3.8,	Paragraph 3- Second to last line	The statement references "aquatic resources" but please clarify if this should be updated to "soils resources."
154	3-332	3.22.3.9	Bullet Point 2	The statement that "Alternatives with greater surface disturbance could contribute more to temporary increases in cumulative dust emissions" is incorrect. The required operational area is independent of alternatives. Please clarify this in the text.
155	3-333	3.22.3.10	Bullet Point 2	The statement that "Alternatives with greater surface disturbance could contribute more to temporary increases in cumulative dust emissions" is incorrect. The required operational area is independent of alternatives. Please clarify this in the text.
156	3-335	3.22.3.11	Bullet Point 2	The statement that "Alternatives with greater surface disturbance could contribute more to temporary increases in cumulative dust emissions" is incorrect. The required operational area is independent of alternatives. Please clarify this in the text.
157	3-336	3.22.3.12		Suggesting that construction-related marine traffic could impact access to Admiralty Island is an unreasonable conclusion. Access to Hawk Inlet would not be limited as there isn't anything that prevents small - or even large boats from entering the area and working, visiting, or site-seeing in the inlet with or without construction-related marine traffic. Please update this statement and others throughout the document.
158	3-346	Table 3.23-1	Surface Water Resources	Please clarify how the surface disturbances were attributed to each watershed. No surface disturbances are proposed in Fowler Creek, N. Hawk Inlet, Middle Hawk Inlet, or South Hawk Inlet for any of the alternatives. Please also clarify why there are surface disturbances in the no-action alternative.
159	3-346	Table 3.23-1	Aquatic Resources & Wetlands	Alternatives C and D take less wetlands than Alternative B (which takes 5.7 acres per Section 3.8.2.3). Section 3.8.2.3 states 5.7 acres of permanent loss of wetlands for Alternative B, and Section 3.8.2.4 states 4.9 acres of permanent loss of wetlands and Section 3.8.2.5 states that Alt D is equivalent to Alt C. Please clarify the actual wetland impacts for each alternative and ensure it is consistent throughout the entire document.
160	5-1	ADFG Reference	2019 Technical Report	Please update the report date to 2020. Ensure references in text are update as well.
161	6-1	Contact Water		Please revise definition of "Contact Water" "Contact water includes, but is not limited to, water withdrawn from Greens Creek, and Cannery Creek; water from mine dewatering; runoff from waste rock facilities, the TDF, 920 area, and port facility; and groundwater from above liner underdrain systems."

Comment Number	Page(s)	Section	Line(s)	Comment
162	6-1	Degritt Basin		This definition is incomplete. Suggest revising as follows: "Structure used to collect and settle out sediment. May or may not store water."
163	6-1	Drill pad		A drill pad may be made of timber. HGCMC suggests removing the word "earthen."
164	6-1	Haul Road		Please remove this phrase as none of our haul trucks are rated for 50 tons or more. The highest capacity truck ("Max Haul") is 45 tons.
165	6-1	Tailings Stack		Please replace "just the tailings stack" with "the limits of containment within which tailings are stored" in the sentence.
166	6-1	Waste Rock		Pleaser revise second sentence: "It may contain metals(s)..."
167	General			The discussion on active mining operations ceasing in 2025 is not consistent with HGCMC's waste management permit no. 2020DB0001. Section 1.1.1.2 of this permit states, "At closure or before, to the extent technical practicable, Site 23 waste rock will either be relocated to the TDF or the underground mine workings for final disposal." If the Site 23 waste rock is relocated to the TDF, the functional capacity of the facility will be exhausted in 2025, representing a worst-case scenario; however, if the waste rock is relocated to the underground mine workings then the TDF is anticipated to have functional capacity until approximately 2031.