



WOLFDEN

September 1, 2021

VIA Email

Stacie R. Beyer
Planning Manager
Land Use Planning Commission
22 State House Station,
Augusta, Maine 04333-0022

Re: Responses to State agency and third party review questions related to petition ZP 779, to Rezone Portion of Township 6, Range 6 Penobscot County, Maine for Development of an Underground Metallic Mineral Deposit

Dear Ms. Beyer:

Wolfden is pleased to submit a series of responses to State agency and third party review questions submitted on February 4/2021 regarding Wolfden Mt Chase, LLC's petition (ZP 779). The responses formatted as a series of references to specific Exhibits in the updated Sept 1 Petition that address questions posed. We hope that this helps clarify the location of the responses and please reach out when convenient for any follow up requests or comments.

Project Scope

1. Has Wolfden decided to change the scope of the proposal to include importation of material from a similar deposit? If yes, show that onsite facilities are sized to accommodate additional volume of materials from offsite. How will this impact other parts of the proposal- traffic projections and access travel routes, water use, waste disposal, socioeconomic impacts, etc.? Pickett Mountain Water Management Plan, 11/26/2020, p.1. **There is no planned change in scope of the project. Please consider the Sept 1 updated Petition as the most current and accurate.**

2. The Preliminary Economic Assessment (PEA) lists several surface uses and structures that are not included in the Petition: backfill plant, mine rescue station, and compressor station. Sec. 16.6, p. 112. Also, it includes a cold storage building and a surface water pump house. Sec. 16.14.2, p. 134. And, it includes a waste oil depot and change house. Sec. 18.9, p. 145. These additional uses and structures need to be added to the Petition's project description, Exhibit D-2 Preliminary Site Plan (Site Plan), and Exhibit D-2 table. Provide the maximum height of the backfill plant. **A complete list of structures is shown in Exhibit 7 of the updated Petition. This includes components identified in the PEA.**

3. The PEA lists underground facilities that are not included in the Petition: a breakdown maintenance shop with wash bay area, fuel stations, explosives and detonator magazines, water transfer stations and tanks, dirty water and clean water sumps, and electrical substations. Sec. 16.6, p. 112, p. 115, p. 116. These additional uses and structures need to be added to the

Petition's project description. Figures in the PEA that show these underground facilities are too small and unclear. Larger scale conceptual drawings of all underground facilities are needed to better understand the scope, intensity and conceptual layout of these facilities. **A series of figures have been included in Exhibit 2 of the updated Petition to try and clarify and expand upon the underground facilities.**

4. The PEA indicates a possibility that an onsite quarry may be developed. Please clarify if Wolfden intends to develop a quarry to supply backfill materials for the mine. Sec. 16.14.2, p. 144. If yes, will it be located within the tailings management facility (TMF) or an alternative location within or outside of the proposed D-PD? For a quarry to be an allowed use in the proposed D-PD (i.e. not require a zoning amendment in the future), it will need to be located on the Site Plan described in the Petition and included in the development plan for the subdistrict. Outside of the proposed D-PD subdistrict, in a General Management Subdistrict, a quarry less than 30 acres in size is an allowed use with a permit (less than 5 acres is allowed subject to standards). However, if a quarry greater than 30 acres is needed, the General Management Subdistrict would have to be rezoned to a development subdistrict for a quarry to be an allowed use. A proposed quarry within the TMF raises questions regarding compliance with Chapter 200. Consultation with the Maine Department of Environmental Protection (MDEP) would be needed for such a proposal. **There is currently no intention to develop an onsite quarry. Instead, a small offsite quarry is proposed and described in Exhibit 2 of the updated Petition.**

5. If backfill material will be imported from offsite, describe generally where this material could come from, what impact that would have on traffic generated by the facility (Petition Attachment J), and where the materials would be stored onsite. Demonstrate that there will be sufficient area for storage onsite. **A description of cost and storage of the proposed offsite quarry is described in Exhibit 2 of the updated Petition.**

6. A diagram of how mined out stopes will be backfilled with cemented and uncemented rockfill would be helpful. According to the PEA, primary stopes will be backfilled with cemented rockfill and secondary stopes will be backfilled with uncemented rockfill. PEA, Sec. 16.7, p. 120. **A diagram of the envisioned primary and secondary backfilling sequences are included in Exhibit 2 of the updated Petition.**

7. The PEA indicates 103 employees for the mine. Sec. 16.16, p. 135. The current version of the Petition indicates approximately 60 employees. The list of positions in the Petition includes some roles that are not included in the PEA, such as concentrator and wastewater treatment plant operators, and health and safety, human resources, and IT staff. Appendix A, Section B(3)a, PDF p. 185-186. Please update the Petition regarding the total estimated number of employees, including a revised Traffic Increases section and Impacts section for Attachment J. Confirm that the proposed size for the employee parking area will be sufficient. Also, the socioeconomic assessment prepared in response to this letter should be based on the current projection of the total number of employees for the mine. **The number and position of employees has been updated in Exhibit 10 of the updated Petition. In addition, parking for the employees has been addressed in Exhibit 15 of the updated Petition.**

Soil Suitability

8. Based on the current record for this matter, the Land Use Planning Commission has significant concerns related to soil suitability for the proposed uses. Of particular concern are the proposals to construct wastewater storage ponds in soils that are shallow to groundwater and/or bedrock, particularly if blasting will be required for pond construction, proposals to store waste rock and low value ore on soils that have been classified in the Soil Suitability Evaluation as unsuitable for development due to the soil conditions, and proposals to construct ditches for surface water management in soils that the Soil Suitability Evaluation indicates as challenging. Given that the proposal involves a risk for potential impact to surface and groundwater resources and that the soils, particularly those in Areas 4,5, and 6, appear to pose significant challenges to manage appropriately over time, please provide an analysis of available alternatives for locating waste storage and disposal in areas with soils that are more suitable for those uses. (See comments from the State Soil Scientist, dated 12/08/2020). Additional soils evaluation may be necessary to address the soil suitability concerns for any on-site alternatives. **An update to the soils suitability report is included in Exhibit 22 of the updated Petition. In addition, further discussion and a toolbox approach has been applied to our updated Preliminary site plan, tailings, ponds, pads and considerations to ensure that there is no requirement to blast any rock shelf for the construction of onsite facilities (other than the mine access portal).**

Financial Practicability

9. The Soil Suitability Evaluation for the project indicates significant limitations to overcome. It appears that the evaluation was not considered in drafting the PEA. How does the cost of overcoming soil limitations, including the needs to i. blast ledge, ii. potentially bring in a significant amount of additional fill, and iii. reclaim the site to match natural topography post operation, impact project costs? Demonstrate the cost is sufficiently covered in the PEA. **An update to the soils suitability report is included in Exhibit 22 of the updated Petition. In addition, further discussion and a toolbox approach has been applied to our updated Preliminary site plan, tailings, ponds, pads and considerations to ensure that there is no requirement to blast rock shelf for construction of onsite facilities (other than the mine access portal). In addition, there is discussion in the updated Petition related to volume estimates of imported fill relative to the PEA to explain why this will not impact the overall economics of the project. In fact, the PEA estimated a higher volume of imported fill than currently anticipated and the economics of course, where robust.**

10. It appears that assay figures for gold and silver are used inconsistently in the PEA. Generally, where discussed in the text, the figure for gold is 0.79 grams/ton, and silver is 88.80 grams/ton. In Tables 1.6, p. 5 and 22.2, p. 183, these figures are reversed. Please confirm whether the tables are incorrect. Since these tables represent the inputs to the cashflow model, what are the implications of the errors for the output from the model? **There was an incorrect title switch in the PEA. The values and how they were used though, or the calculations, was correct and therefore there is no change to the economics in the PEA. This has been clarified in Exhibit 2 of the updated Petition.**

11. The PEA uses a figure of \$13.7 million for the Financial Assurance Trust. This figure appears low. Please provide more information on how this figure was calculated and whether the

amount is sufficient to cover the financial assurance requirements under the MDEP's Chapter 200 Rules. Exhibit 2 of the updated Petition describes potential worst case scenario failures and the anticipated costs related to them. Wolfden and its independent consultants believe this figure to be accurate and defensible as explained in the updated Petition.

Reclamation and Benefits

12. If water storage ponds will be constructed by blasting ledge, how will they be restored to match natural topography following closure of the facility? Blasting of surface topography is not anticipated. However, upon closure, any significant depressions that are a result of the construction or demolition of the facilities would be backfilled with clean fill and contoured to match the existing topography.

13. In addition, provide a response to MDEP comments, Section M, Closure/ Reclamation.

To clarify, all demolition materials from site will be either sold or disposed of to a qualified landfill site upon closure. Disposal of acceptable concrete foundations to underground workings is typical. Disposal of foundations and other materials during closure is also discussed in Exhibit 18 of the updated Petition.

Within the PEA (Submitted post Petition Feb 2020) the contours of the tailings facility are clear and anticlinal. This ensures that no pooling or wet covers will be applied to the tailings facility. However, the composite cap that will be installed will be impermeable and deter any deep rooted tree growth. The TMF composite cap cover details are described in Exhibit 2 of the updated Petition.

An updated schedule is included in Exhibit 2 of the updated Petition.

There is a leachate collection layer designed into the current TMF and will also be designed into those pads that require sealed liners. Upon closure, the only remaining liners will be under and over the TMF. The tailings will be completely enclosed and sealed by the under and over liners. Operating and post operation (monitoring) tailings management is discussed in Exhibit 2 of the updated Petition.

Waste Disposal

14. Please provide a response to MDEP comments, particularly Sections G and H regarding Water Treatment. In that response, demonstrate that it is possible to discharge wastewater onsite, either in subsurface treatment units as currently proposed or using other available technology, in a manner that would not result in the functional equivalent of a direct discharge to surface waters. Additional information may be required including more detailed information on soil type, depth to bedrock, distance to nearest surface water bodies, and discharge volume. Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.

15. Additional information is needed to demonstrate that it is possible to treat and dispose of wastewater generated at the proposed Pickett Mountain Mine in compliance with applicable State rules, particularly the requirement to treat wastewater to background levels. **Water treatment and management are discussed at length in Exhibit 10 of the updated Petition.**

16. Given the change in the water management plan, with some wastewater from the concentrator/ TMF being treated in WTP 2 and released to the environment, it appears that the wastewater treatment plant for the Halfmile Mine is not a good comparison, because the Half-mile Mine has not concentrated mineral resources onsite (and it is our understanding that the mine only operated on a trial basis and has not operated since 2012). Please provide performance data from an existing, operating wastewater treatment plant similar to the one proposed for Pickett Mountain or other credible evidence that demonstrates that wastewater from the proposed process can be treated to achieve background levels. **Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.**

17. In providing that demonstration, please address all potential contaminants in the wastewater and whether the treatment plant will be able to remove all those contaminants to background levels. With mining and processing onsite, the record indicates numerous potential contaminants that could be present in the wastewater: **Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.**

- The letter from SUEZ dated June 20, 2020, does not address two analytes found above background levels at the Half-mile Mine: manganese and molybdenum. **Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.**

- The potential for antimony, arsenic, bismuth, cadmium, cyanide, lead, and mercury to be in the wastewater. SWCA report, pg. 4 & 5; Att. E, pg. 42. Note, according Suez, "Non-metal species, that carry net negative charges, such as antimony and selenium, do not respond well to MetClear products." Wolfden letter dated 11/10/2020, Wastewater Treatment Submission, MetClear_EN, Heavy Metals Removed with MetClear Technology, PDF p. 115, report p. 9. **Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.**

- The chemicals that could potentially be used in the water and wastewater treatment plants including, Metclear, sodium hydroxide, coagulants, and flocculants, (Wolfden letter dated 11/10/2020, Wastewater Treatment Submission, Picket MT Mine WTP Block Diagram-01-Layout1, PDF p. 128); and in the mill,

including Na_2SO_4 , NaCN , Na_2CO_3 , A325, $\text{Ca}(\text{OH})_2$, ZnSO_4 , SO_2 , CuSO_4 , M200, Lime, MIBC, CuSO_4 , and A343 (PEA, Sec. 13.1.3.1 -3, pp. 71 -73) and Aero 5100, SIPX/Aero 3418A, and PAX/AP404 (PEA, Sec. 13.3.3, p. 77).

Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.

- The SWCA report referencing "toxic surfactants used in concentrator". SWCA report, pg. 5. Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.
- The below ground, breakdown maintenance shop and wash bay represent significant potential for fuel/oil/grease discharges to mine water. PEA, Sec. 16.6.6, p. 115. Water treatment and management are discussed in length at Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.

18. What is the basis for the WTP 2 design flow of 120 gpm? Demonstrate that the plant will be sized sufficiently to handle the anticipated process flow, as well as rain events. SWCA Report, Att. B, Linkan Memorandum dated 11/24/2020, Comment #14, p. 7. Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.

19. A supporting memorandum for the SWCA report indicates that sludge levels could be high and recommends additional consideration for sludge handling. Given that sludge levels could be high and that the sludge will need to be characterized as a mine waste prior to disposal, show there is sufficient space for sludge handling and provide an alternative for disposal, if disposal as cemented backfill is not approved by the MDEP. SWCA report, Att. B, Linkan Memorandum, PDF p. 18, memo p. 2. Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.

20. The SWCA report indicates that the conceptual wastewater treatment process needs some measure of additional treatment for RO concentrate (brine) to precipitate, "[t]his is not included and not trivial." SWCA report, Att. B, Linkan Memorandum dated December 2, 2020, Comment #23, p. 2. See also SWCA Report, Att. B, Linkan Memorandum dated 11/24/2020, Comment #14, p. 4. Please include what additional treatment could be proposed for precipitating RO concentrate, including any chemicals typically used in that treatment process. Show that the wastewater treatment process can remove those types of chemicals to background levels. Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.

21. Explain what "byproduct water (reject water)" from the wastewater treatment plant is and how it is generated. Given that the byproduct water will need to be characterized as a mine waste prior to disposal, provide an alternative for disposal, if disposal as cemented backfill is not approved by the MDEP. Pickett Mountain Water Management Plan, Overall Water Balance, p. 4. See also SWCA Report, Att. B, Linkan Memorandum dated 11/24/2020, Comment #16, p. 7.

Water treatment and management are discussed at length in Exhibit 10 of the updated Petition. The content includes confirmation that Wolfden can operate and discharge treated water onsite in a manner that would not result in the functional equivalent of a direct discharge to surface waters.

22. The clarified water pond is missing from the Site Plan and Figure 3 of the Water Management Plan. Please add this pond to the plan and figure. What is the estimated size and depth of this pond? Please explain what measures Wolfden could take if the pond is at capacity and test results show the pond is not meeting background water quality levels. The clarified water pond (or cleaned water pond) has been renamed the Post Treatment Water Storage Pond and is now included in the site plans.

23. What sources of waste will be generated by operation of a backfill plant onsite and how will those wastes be treated and/or disposed of in compliance with State rules? How much water will be used in that process? How does that impact the overall water balance for the site? Are there any other potential sources of contaminants from the backfill plant operation, and how will potential adverse impacts be avoided or minimized? PEA, Sec. 16.11, p. 128. The backfill process is discussed in Exhibit 2 of the updated Petition.

24. Where will collected sediments dredged from both underground sumps and surface collection ponds be stored and disposed of? PEA, Sec. 16.6.5, p. 115. Also, the PEA indicates that the clear water sumps in the mine will be used to treat and store clear water. PEA, Sec. 16.6.5, p. 126. What water treatment is planned in the clear water sumps? Underground sumps and sludge management are discussed in Exhibit 2 of the updated Petition.

25. The PEA indicates that recycled, first phase, treated wastewater will be used in the mine for drilling and ancillary activities. In terms of a ratio, how much of the partially treated wastewater will be used for process water in the mine versus how much will be discharged to the environment? Given that the wastewater will only be partially treated and seepage from the tailings management facility, that could include process chemicals, will be a component of that wastewater, what is the safety risk for employees working in the mine? A comprehensive full site water balance is included in Exhibit 10 of the updated Petition as well as all expected chemicals to be used and any risks related to the reuse/recirculation of process water.

26. Provide a description and conceptual layout for WTP 1. Will any chemicals be used? Will any sludge be generated? How will any waste products of that process be treated, stored and disposed of? Where would WTP 1 fit in Figure 4 of the Water Management Plan? WTP 1 has been renamed the Process Water Conditioner and is discussed in Exhibit 10 of the updated Petition.

27. Respond to MDEP comments regarding disposal of land clearing debris. In particular, provide an estimate on the amount of biomass to be generated from stump grinding and provide evidence that there is an alternative available for exporting and use of any excess biomass. MDEP memo, Sec. A, p. 2 **An estimate of produced biomass and description of how it can be managed are described in Exhibit 18 of the updated Petition.**

28. Also, please respond to MDEP comments regarding disposal of demolition debris. Describe the options that are available for disposal of demolition debris and provide a commitment that this material will be disposed of at a licensed facility in compliance with State environmental laws, rules, and permits. MDEP memo, Sec. M, p. 9 **Demolition debris is discussed in Exhibit 18 of the updated Petition.**

Tailings Management Facility (TMF)

29. It appears that there is an error in the revised Exhibit D-2 table submitted on 11/25/2020 for the size of the TMF. Given that the throughput for the concentrator has increased to as much as 1,300 tonnes/day, the discussion of having room for expansion in the TMF, and the plan to limit the TMF height, how can the TMF now be only 50 acres in size? Please provide a corrected Exhibit D-2 table. Alternately, if the size of the TMF has been reduced to 50 acres, provide evidence that 50 acres will be sufficient to handle the volume of tailings that will be generated. **The calculation has been checked and is correct. The tailings facility and management of the tailings facility are discussed in Exhibit 2 of the updated Petition.**

30. Table 1 of The Pickett Mountain Water Management Plan, differentiates between “pyrite tails” and other “tailings.” Explain the difference between the two categories, including discussion of any differences in management and disposal. Pickett Mountain Water Management Plan, Table 1, p. 4 **The tailings facility and management of the tailings facility are discussed in Exhibit 2 of the updated Petition.**

31. Provide a report including a comparative analysis that addresses the recommendations of the Maine Geological Survey in their memo dated 10/15/2020 to demonstrate that the proposed approach for development, operation, and closure of the site can be done with no undue adverse impact to Maine's ground and surface waters, particularly given the climate in northern Maine. **The tailings facility and management of the tailings facility are discussed in Exhibit 2 of the updated Petition.**

32. Include in the above report evidence that the tailings can be stable over the long-term in climates similar to northern Maine. In particular, demonstrate that vacuum filtration of 14 µm materials is possible (SWCA Report, Att. B, Linkan Memorandum dated 11/24/2020, Comment #08, p. 6), confirm the design moisture content for the tailings, demonstrate that other northern mines have been able to achieve that moisture content, explain the long-term stability implications from infiltration of rainwater and snowmelt into the tailings before each TMF cell is closed, describe any provisions for temporary or intermediate cover over the TMF, and describe what measures will be considered to monitor stability of the TMF. Note that the Petition indicates that once compacted, tailings will not be subject to infiltration of water and intrusion of atmospheric oxygen (Petition Sec. B(3)(d), Tailings Treatment and Management Strategy, PDF

p. 203); however, the PEA indicates that infiltration will occur (for example, Sec. 18.22.6, p. 152). The fact that infiltration will occur is also supported by the Greens Creek Mine Tailing Disposal Facility Expansion [Final Environmental Impact Statement](#) and Record of Decision Volume 1, published by the United States Department of Agriculture, September 2013 (EIS). Volume I, p. 3-75. [The tailings facility and management of the tailings facility are discussed in Exhibit 2 of the updated Petition.](#)

33. The PEA states that “[t]he design dry density [of tailings] may not be achievable during the winter months and may require temporary storage until spring when the thawed tailings may be compacted.” Where will the temporary storage location be? Will that storage location be lined? How will runoff and spring melt-off from uncompacted tailings be managed/treated? What additional processing will be needed to achieve the design dry density in the spring, prior to disposal in the TMF? What would be the implications for TMF stability and decant water in the long run if the moisture content of a portion of the tailings is too high for any reason? Are Alaska’s Greens Creek mine and other mines in northern climates able to meet tailings dry density requirements during the winter? How consistent are their results? If not, how do they handle winter conditions, runoff, and spring melt-off? How are the conditions at those mines similar to and different from Maine’s climate? Sec. 18.22, p. 149. [The tailings facility and management of the tailings facility are discussed in Exhibit 2 of the updated Petition.](#)

34. The PEA states that “If adequate and consistent filtering [of tailings] cannot be achieved, the system may not work.” Sec. 18.22.3, p. 151. What factors could result in inadequate or inconsistent filtering of tailings? What mitigation measures can be used to overcome those factors, and what is the risk of failure?

Include in the comparative analysis report requested above, information on the performance of liners and cover materials used for the TMF at other similar mines, particularly those in northern climates. The Greens Creek Mine Tailings Disposal Facility (TDF) Expansion EIS indicates that water draining from the TDF under all alternatives, including construction of a new TDF, would exceed water quality standards and therefore would require water treatment for at least 100 years after closure. Given that the MDEP’s Chapter 200 rules require that affected areas meet water quality standards without requiring active treatment as soon as practicable, but in no case greater than 10 years post-closure, what measures are reasonably available to Wolfden to achieve better results than those reported in the Greens Creek Mine TDF Expansion EIS in terms of the quality and quantity of post-closure leachate or to provide for long-term passive treatment of the leachate from the TMF? EIS, Volume I, p. 3-38. See also SWCA Report, Att. B, Linkan Memorandum dated 11/24/2020, Comment #16, p. 4. [The tailings facility and management of the tailings facility are discussed in Exhibit 2 of the updated Petition.](#)

35. The petition proposes disposal of waste chemicals and chemical spills in the tailings management facility. Appendix A, Sec. B(3)(d), PDF p. 201. The LUPC is concerned about this proposal given that the tailings management facility is intended to be a dry stack facility and recommends alternative disposal provisions be submitted such as use of a contracted special or hazardous waste disposal contractor. If Wolfden does not propose an alternative disposal method, consultation with MDEP is recommended to determine if that disposal method complies

with applicable MDEP rules. **Waste chemicals and chemical spills are discussed in Exhibit 2 of the updated Petition.**

36. The TMF collection pond is sized for 43,000 m³ (151,831 ft³). PEA, Sec. 18.22.6, p. 152 and 153. The updated table from Exhibit D-2 indicates a collection pond size of 172,946 ft². That will require an average pond depth of 8.8 feet. The nearest test pit to the collection pond, RTB-8, indicates a depth to bedrock of 22 inches. How will the necessary pond depth be achieved? If only fill and berms will be used, provide typical construction specifications and cross-sections. If blasting is required, provide evidence that the pond can be adequately lined after blasting to prevent leakage and groundwater contamination. What measures can be used to ensure that groundwater intrusion is prevented and for long-term leak detection? **The tailings water collection ponds are discussed in Exhibit 2 of the updated Petition.**

37. Please describe what measures are reasonably available to minimize dust emissions from the TMF and water quality impacts from deposition on nearby vegetation. SWCA Report, Att. B, Linkan Memorandum dated 11/24/2020, Comment #12, p. 4, and Comment #19, p. 7. **Dusts emissions from the TMF are discussed in Exhibit's 2 and 9 of the updated Petition.**

Best Reasonably Available Site

38. The LUPC's Chapter 10 Rules state in the purpose of a D-PD subdistrict that "[a] petition to establish a D-PD subdistrict will be granted when the Commission concludes the location of the site is the best reasonably available for the proposed use and that the goals and policies of the Comprehensive Land Use Plan are served." 01-672 Chapter 10, Sec. 10.21,H,1. In considering that conclusion, the Commission will look at mining and ore processing, waste storage, and waste disposal as separate uses. Therefore, the Petition must demonstrate that the proposed locations are the best reasonably available for each of the proposed uses. Given the concerns discussed above regarding soil suitability, wastewater disposal, and the tailings management facility, additional evidence is required to demonstrate that the best reasonably available site criterion has been met. Please complete an alternatives analysis that demonstrates the proposed onsite locations for ore processing, waste storage, and waste disposal are the best reasonably available locations for these uses. In the analysis, please consider alternative locations on the Wolfden property as well as off-site locations that may be more suitable. **A complete alternatives analysis is included in Exhibit 2 of the updated Petition.**

Surface Water Management

39. There appear to be significant inconsistencies between tables and figures in the Water Management Plan and the PEA. For example, the water management plan uses a concentrator throughput of 1,000 t/d (Table 1) and the PEA and other materials use 1,200- 1,300 t/d (For example, PEA Sec. 16.13, p. 131 and Table 17.3, p. 140), a 30% increase over 1,000 t/d. The difference influences the water balance, material balance (and presumably the size of the TMF), truck trips per day, and the project economics. Also, in the PEA (Sec. 16.6.3, p. 114), 1,160 m³/day of water are needed for mine process activities and 1,420 m³/day of dewatering from the mine is needed. In the Water Management Plan, at most 353 m³/day are needed for mine process activities and 353 m³/d of dewatering is needed. These are 3.3-4X differences. Similarly, the 401,285 m³/yr. of service water required for the underground mine (PEA, Table 16.2) is not

consistent with the service water requirements provided in the Water Management Plan. In addition, there appear to be errors and inconsistency between Table 1 of the Water Management Plan and a similar table presented in Table 17.3 in the PEA. The water management plan should be up-to-date and consistent with the PEA. **The document has been fully reviewed for consistency. Please note that given the size of and the amount of content within the Petition, it is anticipated that a few minor inconsistencies may still appear. Most material numeric values in the Petition are mentioned more than once, and so any single outlier that is not the same as all the others, should be overlooked. In addition, The new Petition organization and structure has also allowed us to address (search for) potential inconsistencies. Note that the Sept 1/2021 updated Petition should be considered the most relevant content and should supersede other documents related to Pickett Mountain.**

40. In the Water Management Plan, how were the rates determined for precipitation on tailings and pond, evaporation from tailings, underground mine water seepage, and precipitation from impacted surface areas? What are the rates based on and how were those numbers determined to be a reasonable estimate? Pickett Mountain Water Management Plan, p. 4. **Water management is discussed in Exhibit 2 of the updated Petition.**

41. The site water balance has 100% of the process water in the tailings on the TMF lost through evaporation and decant to the tailings water collection pond. This does not seem possible on a m³/d basis. Please review and update Figure 4, the Site Water Balance, of the Water Management Plan, or explain why there would be no moisture content retained in the tailings. **Water management is discussed in Exhibit 2 of the updated Petition.**

42. Figure 3, Site Plan Identifying Water Management Flow Directions, will need to be updated to show flow from the TMF going to the storage pond and WTP 2, and to show flow from the WTP 2 going to the concentrator and the mine for process water. Pickett Mountain Water Management Plan, p. 3. **Water management is discussed in Exhibit 2 of the updated Petition.**

43. Provide additional information to demonstrate that snow/ and spring melt can be adequately managed onsite. Evidence on how this is handled at other northern mines would be helpful. SWCA Report, Att. B, Linkan Memorandum dated 11/24/2020, Comment #11, p. 3. **Water/Snow management is discussed in Exhibit 2 of the updated Petition.**

44. Where will impacted snow be stored until it melts in the spring? Is there sufficient area for storage? Will it be lined? Where will snow melt be collected and treated? Pickett Mountain Water Management Plan, p. 6. **Water/Snow management is discussed in Exhibit 2 of the updated Petition.**

45. What is the basis for the volume projected for spring melt/ runoff? What would happen if all the snow melts at once during a spring rain event instead of the estimated 2-month period for snow melt? Pickett Mountain Water Management Plan, p. 6. **Water/Snow management is discussed in Exhibit 2 of the updated Petition.**

46. The nearest test pit to the storage pond (Facility Item ID #27), RTP-9, indicates a depth to the hydraulically restrictive layer of 10 inches and to bedrock of 20 inches. How will the necessary pond depth be achieved? If fill and berms will be used, provide typical construction specifications and cross-sections. If blasting is required, provide evidence that the pond can be adequately lined after blasting to prevent leakage and groundwater contamination. What measures can be used to ensure that groundwater intrusion is prevented and for long-term leak detection? **Water/Snow/Pond management is discussed in Exhibit 2 of the updated Petition.**

47. Provide a response to comments from the MDEP regarding temporary shutdowns. In particular, demonstrate that there can be enough storage volume in onsite water storage ponds or provide alternative management practices that will be available to address temporary shutdowns of mining operations and/or the wastewater treatment plant. MDEP memo, Sec. C, p. 3. **Water management is discussed in Exhibit 2 of the updated Petition.**

48. The PEA indicates that contaminated stormwater from storms greater than 500-year events will be discharged to and stored in the mine shaft until the storm subsides and surface storage facilities regain storage capacity. How long would stormwater need to be stored in the mine before it could be pumped out, treated, and discharged? Will the portions of the mine that will be flooded include the mineralized zone? Would the workings be flooded above the level of groundwater? How will Wolfden prevent abandonment of portions of the workings that have been flooded? Given there is hydraulic head into the mine during operation, but that water flows through under non-working groundwater conditions, what would be the impact of introducing oxygenated water into the mine on ambient groundwater quality and the safety of mine workings? **Water management is discussed in Exhibit 2 of the updated Petition.**

Fish and Wildlife

49. Provide evidence to show that the proposed project can be constructed, operated, and closed out without unduly altering the hydrology of downgradient natural resources. If any flowing water, significant wildlife habitat or natural area of concern will receive more or less water than pre-development, provide evidence to demonstrate that there will not be undue adverse impacts on those habitats or the species depending on those habitats. Consider in this response the possibility that water could be diverted from one sub catchment area to another, and that water from mine shaft dewatering may not have reached the streams pre-development and therefore will be a source of additional volume. (See IF&W comments dated 9/11/2020, LUPC letter dated 09/12/2020, item 11(a), and MNAP comments dated 11/17/2020). **Water/Snow management is discussed in Exhibit 2 of the updated Petition.**

50. Please review and provide a response to comments submitted by the US FWS, in a letter dated 1/20/21, particularly those regarding potential habitat for and impacts to the Canada lynx. Provide an analysis of potential impacts; identify measures that could be used to avoid and minimize impacts to the species and habitat, including potential impacts from direct loss of habitat, traffic, pond construction, and fenced areas; describe possible measures to mitigate for any loss of habitat, including reclaiming disturbed areas to restore habitat and managing the remaining land on the parcel to improve habitat for the species; and indicate whether Wolfden commits to implementing measures needed to ensure no undue adverse impacts to the Canada

lynx. Potential impacts to the habitat and commitments from Wolfden to protect them are discussed in Exhibit 25 of the updated Petition.

Water Supply

51. How much groundwater withdrawal will be needed to support the process until there is enough water for internal recycling? Demonstrate the cone of influence for a groundwater production well and that there will not be an unduly adverse impact on any nearby streams. PEA, Sec. 1.10, p. 7. Groundwater withdrawal is discussed in Exhibit 2 of the Updated Petition.

52. The PEA indicates that potable water must be drawn from an authorized site by the State of Maine to a suitable tank, and treated for organics, TSS, and metal ions. This statement is confusing. Is it meant to say that potable water must be drawn from a site authorized by the State? Water will not be provided by the State. Given that, what are the implications for the economic conclusions made in the PEA? What factors will be used to locate a potable well? Will a water treatment plant be needed? If yes, where will this be located, what is the conceptual layout, what process chemicals are typically needed, and how will backwash water and sludge be disposed of to comply with applicable State rules? Sec. 18.5, p. 144. Potable water is discussed in Exhibit 2 of the updated Petition.

Noise Assessment

53. The PEA indicates that a backfill plant will be constructed onsite. This represents a noise source that was not considered in the noise assessment for the petition. The noise impact assessment must be revised to include operation of the backfill plant onsite as a noise source. Sec. 16.14.2, p. 133. An updated Noise assessment is included in Exhibit 10 of the updated Petition.

Socioeconomic Impact Assessment

54. Please provide a stand-alone socioeconomic impact assessment responsive to the comments provided by rbouvier consulting, dated 12/14/2020. A standalone socioeconomic impact assessment report is included in Exhibit 10 of the updated Petition.

Recreation

55. Please respond to comments from the Maine Bureau of Parks and Lands, in a memo dated 11/9/2020, regarding their concerns about trail connectivity and traditional recreational activities. Recreational resources including confirmation that there should be no impact to the summer and winter trail connectivities are discussed in Exhibit 15 of the updated Petition.

Infrastructure

56. MaineDOT indicated a number of issues that will need to be addressed to ensure safe traffic movement into and out of the proposed mine. LUPC, in a letter dated 10/24/2020, requested that Wolfden respond to MaineDOT's comments. Although detailed infrastructure designs are more

appropriate for the permitting phase of the project, LUPC does need to know that providing for safe traffic movement is technically feasible and financially practicable. In the letter dated 11/10/2020, Wolfden responded to the financial practicability of widening the access roads and provided road cross-sections (Soil Suitability Assessment, Engineering Details, Appendix E, PDF pp. 110-112), indicating technical feasibility to widen the roads. However, Wolfden did not address other MaineDOT recommendations including overhead lighting at the intersection of SR 11 and the access road, the deceleration lane on SR 11, the paving of the access road entrance, the extended shoulder width at the intersection of SR 11 and SR 212, nor the portable Changeable Message Signs for SR 212. **Traffic and roads are discussed in Exhibit 20 of the updated Petition.**

57. Wolfden has indicated during site visits that the bridge over the outlet stream for Pickett Mountain Pond, currently only one lane wide, will not be widened to support traffic from the proposed mine. Given the volume of traffic proposed, the need to truck hazardous chemicals into the site, and the co-use of the road with logging trucks, the Commission is concerned that a one-lane bridge will not provide safe and convenient traffic movement. Provide evidence that the bridge will be able to safely handle all the expected traffic or revise the proposal to indicate that the bridge will be widened to the full width proposed for expansion of the access road. **Traffic and roads are discussed in Exhibit 20 of the updated Petition.**

Security

58. Please add the gates and security building back onto the Site Plan.

This has been updated on the Figure 2-1 (Preliminary Site Plan) in Exhibit 2 of the updated Petition.