GOVERNMENT AGENCY COMMENTS RECEIVED ON THE WOLFDEN REZONING PETITION

ZP 779, Pickett Mountain Mine, T6 R6 WELS

Maine Land Use Planning Commission
Maine Department of Agriculture, Conservation and Forestry

This document contains all the government agency comments received in response to ZP 779 as of February 4, 2021. Comments from each agency are bookmarked for ease in navigation.

For more information on the Petition and LUPC’s review process visit the LUPC webpage at: https://www.maine.gov/dacf/lupc/projects/wolfden/wolfden_rezoning.html.
Stacie,

MEDIFW and BPL’s Boating Facilities Division both have no information of the Pleasant Lake sites. FYI. See you (virtually) this afternoon.

Rex Turner
Outdoor Recreation Planner
Maine Department of Agriculture, Conservation, and Forestry
Bureau of Parks and Lands
22 State House Station
Augusta, ME 04333-0022
(207) 441-9152
www.parksandlands.com

Rex,

The Land Use Planning Commission is requesting review of the pending zoning petition submitted by Wolfden Mt. Chase, LLC., ZP 779. The petition requests rezoning to a custom, Planned Development Subdistrict that would allow the company to move forward to the permitting stage for their proposed underground metallic mineral mine in T6 R6 WELS.

Please review the petition and submit any comments that you have regarding the potential impacts of the proposal on recreational resources.

The petition identifies the following recreational activities within a 3-mile radius:

- Motorized recreation including ATVs and snowmobiles,
- Hunting and fishing, and
- Hiking. Of note is a hiking trail up to the summit of Mt. Chase.

The LUPC has requested that Wolfden Mt. Chase provide additional information on the usage of Picket Pond, Pleasant and Mud Ponds, and the Mt. Chase trail.

The Delorme map shows a boat ramp and camp sites on Pleasant Lake, but the ramp is not listed as a State ramp. Do you have any information on the ownership and public usage of the boat ramp and camp sites?
A request for review form is attached that includes links to the Commission’s rules, the project specific webpage, the current version of the petition, and other helpful information. If you have any questions about this request for review or the Wolfden Mt. Chase proposal, please let me know.

Thank you.

Stacie R. Beyer
Planning Manager
Land Use Planning Commission
22 State House Station,
Augusta, Maine 04333-0022
Cell- 207-557-2535
REQUEST FOR REVIEW AND COMMENT ON PENDING APPLICATION

Date:  August 04, 2020        Permit #: ZP 779       Tr#: 51512        Analyst: Stacie Beyer

Applicant: Wolfden Mt. Chase, LLC                        Location: T6 R6 WELS

Project: Rezoning to D-PD Subdistrict for the Pickett Mountain Metallic Mineral Mine

Special Notes: This is a petition for a zone change that would allow the landowner to move forward to the permitting stage. If the zone change is approved by the Commission, DEP would be the lead agency for permitting and LUPC would have a certifying role. Links to the petition, supporting materials, and references are attached.

TO BE CONSIDERED, COMMENTS DUE BY: 09-01-2020

Please use this form to submit comments & recommendations regarding the petition. Those indicated below have been requested to review this petition.

| Bureau of Parks and Lands, SHS #22 | Maine Forest Service |
| Attn.: Outdoor Recreation, Rex Turner | Attn.: Don Mansius |
| Attn.: Mining Review, Mark Stebbins and Mike Clark |
| DEP, SHS #17 or 312 Canco Rd. Portland, ME 04103 | Natural Areas Program, SHS #93 |
| Attn.: Lisa St. Hilaire |
| DEP, SHS #17 | State Geologist, NRIMC, SHS #22 |
| Attn.: Daniel Locke |
| DEP, SHS #17 | State Soil Scientist, SHS #28 |
| Attn.: Groundwater Review, John Hopeck | Attn.: David C. Rocco |
| Attn.: Surface Water Review, Tom Danielson | DOT, Traffic, SHS #16 |
| Attn.: Waste Water Treatment, Gregg Wood and Cindy Dione | Attn.: Steve Landry |
| DEP, SHS #17 | County Commissioners |
| Attn.: Air Quality Review, Jeff Crawford | Attn: Shaw Weeks |
| DEP, 106 Hogan Road, Bangor | Historic Preservation Commission, SHS #65 |
| Attn.: Solid Waste Review, Karen Knuuti |
| Historic Preservation Commission, SHS #65 | Art Spiess |
| DIF&W, SHS #41 (email: IFWEnvironmentalReview@maine.gov) | |
| Attn.: John Perry, Environmental Review Coordinator |

After review of the petition and consideration of the proposal's probable impacts, we have:

X No comments on the proposal

Comments (attach additional pages as necessary):

Signature: [Signature] Date: [Date]

Reports of staff permitting decisions, can be found here: http://www.maine.gov/dacf/lupc/reports/

All pertinent materials for review of the petition are found on the LUPC’s website.

**Review Criteria, Commission Rules Chapter 12:**


**Current Version of the Petition:**


**Project Specific Webpage:**


**Overview of Estimated Time Line:**


**Last Request for Additional Information:**


(Please note the LUPC expects to send a follow-up letter requesting more information. This letter will be posted on the project specific webpage shortly. We will notify all agencies, when we receive any new information from the petitioner.)
Good Afternoon Stacie,

Over the last two weeks I’ve presented some of the basic information to the Penobscot County Commissioners regarding the Wolfden Rezoning Petition. I’ve also relayed information to our Sheriff’s department mostly the workforce and traffic outlined in Wolfden’s petition. The Sheriff and I seem to be in agreement that the project would minimally affect our Sheriff’s office operation.

The County Commissioners have requested that you come before them to present the basics of the project and answer any further questions they may have. They meet weekly on Tuesday mornings from 9am usually until 10:30. We would greatly appreciate your knowledge and expertise regarding this project.

Thank you in advance.

Shaw Weeks
Director, Penobscot County
Unorganized Territory Administration
97 Hammond Street
Bangor, ME 04401

Phone: 207-942-8566
Fax: 207-561-6181

Please visit us on the web at www.ut.penobscot-county.net
Hi Stacie:

Just to reiterate our discussion this morning, this is what I think is needed for soils information, at a minimum:

The term “generally suitable for the proposed project” is a relative term which may have a different meaning depending on your prospective. For me, as a soil scientist, the most limiting soil conditions would be slope and wetness. Depth to bedrock and hardpan, which are limiting factors for a number of other uses, are not limiting for the proposed mining project. I do not need to know the extent of poorly drained soils as they should have already been identified in the wetlands mapping. It is rare to have poorly drained soils in areas that are not wetlands. I am most interested in the extent and location of somewhat poorly drained soils and soils with shallow oxyaquic (oxygenated groundwater table) conditions. Both of these soil conditions have a shallow groundwater table that can cause significant use and management issues if not properly identified and deal with. The somewhat poorly drained soils have typical redoximorphic features (red and gray drainage mottles) due to alternating anaerobic and aerobic conditions during the growing season so they are easily recognized and classified. Soils with oxygenated groundwater tables do not have redoximorphic features because they do not become anaerobic during the growing season. They typically occur on long slopes in soils with a hardpan or shallow depth to bedrock. Rainfall and snow melt enter the soil and move down to the hardpan and/or bedrock where they flow downslope. Since they are moving and not stagnant, they contain oxygen. These soils can usually be identified by not having bright subsoil colors and streaks of organic matter that has been translocated from above. They are also called enriched soils because they carry organic matter and nutrients from above. They also tend to have a shorter duration groundwater table than soils in low lands where water accumulates and can’t dissipate quickly. The duration of the groundwater table depends on the extent of upslope contributing watershed and the slope of the land. My concern is with proposed construction activities that will result in excavations into and/or below either of these groundwater tables. If not diverted, they will impact the activity which may contain hazardous materials. If diverted (curtain drain or diversion ditches) those diversions will need to be maintained or they will likely fail over time. I would also be concerned with activities that divert the groundwater table impacting the natural hydrology down gradient of those activities (wetlands, nursery streams etc.) It is preferable, in soils with a shallow groundwater table, to build above the groundwater table as you do not have to be concerned with diverting the groundwater table away from the site or altering the natural hydrology.

Slope is another concern, particularly slopes above 10% because of increased erosion potential.

I would like to know the extent of wet soils and sloping soils and which sections of the area
to be re-zoned has the greatest extent of them. If there are large, extensive areas of wet or steep soils, it would be appropriate for the developer to show how the project will be sited to minimize construction on them without significantly altering the natural hydrology.

David Rocque
State Soil Scientist, Department of Agriculture, Conservation, and Forestry
Bureau of Agriculture, Food & Rural Resources
Division of Agricultural Resource Development
207-287-2666
REQUEST FOR REVIEW AND COMMENT ON PENDING APPLICATION

Date: August 04, 2020 Permit #: ZP 779 Tr#: 51512 Analyst: Stacie Beyer
Applicant: _Wolfden Mt. Chase, LLC_ Location: __T6 R6 WELS_________
Project: _Rezoning to D-PD Subdistrict for the Pickett Mountain Metallic Mineral Mine_

**Special Notes:** This is a petition for a _zone change_ that would allow the landowner to move forward to the permitting stage. If the zone change is approved by the Commission, DEP would be the lead agency for permitting and LUPC would have a certifying role. Links to the petition, supporting materials, and references are attached.

Please use this form to submit comments & recommendations regarding the petition. Those indicated below have been requested to review this petition.

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| Attn.: Outdoor Recreation, Rex Turner | Attn.: Don Mansius |
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| DIF&W, SHS #41 (email: IFWEnvironmentalreview@maine.gov) | DIF&W, SHS #41 (email: IFWEnvironmentalreview@maine.gov) |
| Attn.: John Perry, Environmental Review Coordinator | Attn.: John Perry, Environmental Review Coordinator |

After review of the petition and consideration of the proposal’s probable impacts, we have:

- [ ] No comments on the proposal
- [x] Comments on the proposal are attached

Comments (attach additional pages as necessary):

Signature: [Signature] Date: September 11, 2020

Reports of staff permitting decisions, can be found here: [http://www.maine.gov/dacf/lupc/reports/](http://www.maine.gov/dacf/lupc/reports/)

Review Materials

All pertinent materials for review of the petition are found on the LUPC’s website.

Review Criteria, Commission Rules Chapter 12:


Current Version of the Petition:


Project Specific Webpage:


Overview of Estimated Time Line:


Last Request for Additional Information:


(Please note the LUPC expects to send a follow-up letter requesting more information. This letter will be posted on the project specific webpage shortly. We will notify all agencies, when we receive any new information from the petitioner.)
September 11, 2020

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

RE: Wolfden Resources Mineral Mining Rezoning Petition, T6R6 WELS; Additional Resource Information.

Dear Stacie,

Per your request, and as a follow up to the site visit conducted on September 3, 2020, the Maine Department of Inland Fisheries and Wildlife (MDIFW) offers the following additional observations and recommendations related to Wolfden Resources’ petition to rezone 528 acres in T6R6 WELS to allow for an application to construct a metallic mineral mine. We appreciate the opportunity to attend the site visit, which was very informative and provided an opportunity to discuss resource concerns with the applicant and other parties present.

In MDIFW’s letter of November 25, 2019, we described our agency’s focus on Rare, Threatened, and Endangered Species and Habitats; Significant Wildlife Habitats; and Protected Natural Resources. Based on preliminary information provided, we also noted several resources for further investigation and of particular concern, some of which are further addressed below. The following is in response to your request for additional information related to the presence, use, and concerns for potential impacts to natural resources in the vicinity of the proposed project.

Significant Wildlife Habitat, Potential for Maine Threatened Species

It is noted that a designated Inland Waterfowl and Wading Bird Habitat (IWWH) is located on the inlet on the western end of Pickett Mountain Pond, adjacent to the proposed project site. MDIFW anticipates receiving and reviewing additional project information in the future to ensure that there are no unreasonable, adverse impacts to this resource, which is a Significant Wildlife Habitat (SWH) pursuant to the Natural Resources Protection Act (38 M.R.S., §480-B.10) and SWH Rules (06-096 CMR 335; 09-137 CMR 10). In addition, MDIFW recommends investigation of the IWWH for presence / absence of shrubby cinquefoil, the host plant for the State Threatened Clayton’s copper butterfly. Aerial photo interpretation suggests that the IWWH may have conditions that favor this plant and there is an existing population of Clayton’s copper butterflies in nearby Crystal. The Clayton’s copper butterfly is currently known from only ten sites in Maine, including four in a ten square mile area of eastern Penobscot County in the vicinity of Lee and Springfield, and three sites in northern Piscataquis and eastern Aroostook Counties. Clayton’s copper is found only in association with its larval host plant, the shrubby cinquefoil. This uncommon shrub requires limestone soils and has a scattered distribution throughout Maine, however, there are relatively few stands large enough to support viable Clayton’s copper populations. Shrubby cinquefoil is intolerant of shade and can only thrive in open areas. It
typically occurs along the edge of calcareous (limestone) wetlands. It can also be found in old fields, but these stands are typically short-lived because of forest succession. All of the currently known occurrences for Clayton’s copper are in enriched fens and bogs, and streamside shrublands or meadows. Please contact MDIFW’s Reptile, Amphibian, and Invertebrate Biologist, Beth Swartz (beth.swartz@maine.gov, 207-941-4476), for further guidance. If MDIFW-approved surveys are conducted and indicate that shrubby cinquefoil is not present, or if it can be demonstrated that the Wolfden proposal will not adversely affect shrubby cinquefoil and will avoid Take or Harassment of the Maine Threatened Clayton’s copper butterfly, MDIFW anticipates having no concerns for this species.

Bat Habitat Creation, Post-Closure
During the September 3, 2020 site visit, we briefly explored the potential to create habitat for at-risk bat species as part of the post-operational site remediation plan. As I understand it, the main underground portal will consist of an approximately 16-foot x 16-foot opening surrounded by a larger rock face. There will also be both east and west ventilation raises with approximately 10-foot x 10-foot openings. Wolfden intends to fill and add concrete around the openings to prevent water intrusion after closure. We briefly discussed the potential to slope and berm around the openings to discourage water entry and to leave gated openings as possible caves for bat hibernacula. We also discussed the possibility of installing some piles of rock rubble on the closed tailings storage area as potential hibernacula. These discussions were conceptual but, Wolfden expressed interest in further exploring the concept to determine the potential for creating viable habitat conditions while also meeting site closure needs.

Aquatic Resources
The proposed project site is located in the Rockabema Lake subwatershed (HUC 12), in proximity and west of Pickett Mountain Pond, which flows to Grass Pond, then to Mud Lake, and other waters downstream. It is also east and south of the West Branch of the Mattawamkeag River, which flows to Pleasant Lake, Mud Lake, Duck Pond, Rockabema Lake, and other downstream resources along the West Branch of the Mattawamkeag River. The watershed contains other resources including intermittent and perennial streams, associated riparian habitats, and freshwater wetlands, and is considered important for brook trout.

Pickett Mountain Pond has a maximum depth of seven feet, with warm, well oxygenated water. The initial fisheries survey (1958) indicated that the inlet tributary had no potential for brook trout spawning, rearing, or adults, and the outlet had little potential. One trout was captured during the initial survey, none in subsequent samples (1996, 2004). MDIFW Regional Fisheries Biologist Kevin Dunham indicates that Pickett Mountain Pond contains white sucker, fine-scale dace, red-belly dace, fallfish, creek chub, golden shiner, common shiner, red-breasted sunfish, black-nose dace, and pearl dace, and would make a great place to harvest bait fish.

Pleasant Lake, Mud Lake, and Grass Pond are all designated as Heritage Fish Waters. Maine Heritage Fish Waters are native and wild brook trout lakes and ponds which represent unique, valuable, and irreplaceable ecological and angling resources. MDIFW recognizes the unrivaled historic and economic importance of Maine’s wild and native brook trout resource and focuses on the conservation and protection of this uniquely valuable resource. MDIFW’s primary intent for managing wild brook trout in lakes and ponds is the protection and conservation of these self-sustaining fisheries. The inlets of these lakes originate in the West Branch of the Mattawamkeag River as well as Picket Mountain Pond, positioned west and east of the proposed project site, respectively.
MDIFW regional fisheries staff consider Pleasant Lake and Mud Lake to be some of the best brook trout and landlock salmon waters available in the Region. Kevin Dunham notes, “Though the initial survey of the lakes in 1953 describes them as being shallow and having warm water throughout, it does go on to say, ‘trout and salmon seek the cool water of spring holes...’. Pleasant Lake has an adequate amount of cool-water spring holes to support an excellent trout and salmon fishery. Subsequent fishery surveys, the most recent conducted in June 2019, found extraordinary growth of one-year old wild brook trout averaging 9.1”, most of which probably took place in a cooler tributary stream. Additionally, while the lake does not stratify and temperatures remain homogenous throughout the water column, dissolved oxygen levels also remain ideal from top to bottom. Multiple age-classes of brook trout were captured during recent surveys as well, indicating year to year holdover is taking place at Pleasant and Mud Lakes.” Anecdotal evidence suggests moderate angling pressure in these waters and the fisheries resources are protected and managed through specialized regulations. “The landlocked salmon fishery is not as robust as the trout fishery, but past surveys have sampled multiple age-classes in the 7-17” size ranges. While the lakes are somewhat limiting in cold-water refugia they do support healthy populations of salmonids (and other fish including smelt) and it is vitally important to protect the tributaries as well as the lakes since they contain an abundance of spawning and rearing habitat.”

Merry Gallagher, MDIFW’s Native Fish Conservation Biologist, provided the attached map of preliminary stream resources, and noted that the orange stream lines “signify streams that are of medium/moderate value for wild brook trout conservation according to (MDIFW’s) recent effort to classify streams.” As noted during our November 5, 2019 meeting, brook trout streams are plentiful throughout this region. During surveys conducted in September 2008, one survey site indicated on the map yielded 16 wild brook trout, while the second site provided two wild brook trout, along with common shiner, black nose dace, creek chub, white sucker, and black nose shiner.

MDIFW requests additional information on the proposed mining operation and associated activities to ensure that it will not result in unreasonable adverse impacts to these valuable resources.

Streams and Wetlands
Wolfden’s plan during the mining operation includes capturing water from runoff and infiltration on site, treating it to equal to or better than ambient conditions, and discharging treated water into bedrock aquifers. During the September 3, 2020 site visit, MDIFW noted that intermittent and perennial streams and freshwater wetlands in the area are likely supplied by water from shallow features that flow through the overburden and less likely from bedrock sources. MDIFW expressed concern with the potential for these natural resources to be adversely affected by removing water from surficial and shallow horizons and discharging it to bedrock aquifers. The concern is with a potential dewatering and/or change in water chemistry, temperature, etc. of these natural resources that are important habitats by themselves as well as through their contributions to the larger resources described above. Also, additional information is necessary to demonstrate that the proposed mining operation and associated activities will not cause physical interruptions in subsurface flow patterns that supply these resources, even if Wolfden is able to maintain recommended undisturbed, forested buffer distances. During the site visit, we discussed investigating spray irrigation of the treated water to the ground surface during operation, allowing it to infiltrate the overburden and potentially provide flows to surface water resources. However, even if this is determined feasible and beneficial, the question remains of potential long term/permanent effects as this practice will not be in use after operations cease. MDIFW requests additional information to address concerns for potential direct and indirect impacts to surface and groundwater features and flow patterns that contribute to these resources.
We hope that this information is valuable to your process. If you have any questions or concerns, please feel free to contact me at robert.d.stratton@maine.gov or (207) 287-5659.

Thank you,

Robert D. Stratton
Environmental Program Manager
Maine Department of Inland Fisheries & Wildlife

Cc: Jim Connolly, Director, Bureau of Resource Management, MDIFW
Attached are an updated copy of my findings.

Stephen Landry
State Traffic Engineer
MaineDOT

Phone  207-624-3632
Fax    207-624-3621
Wolfden Mt. Chase LLC – MainDOT traffic comments

Logging Rd Access

1. Petition says looking to make road 24 feet wide – are they planning on adding ditching for drainage and room for snow cast-off.
2. MainDOT may allow for 24 foot wide roadways on our system, but MainDOT also includes accommodations for snow storage, 24 foot total width will not work if it includes the snow storage/drainage, especially with large trucks.
3. Are they going to crown the roadway at the center of the road? If not snow melt will accumulate in the road and freeze. Further reason for ditching and drainage.
4. Intersection of access road and route 11 needs to have overhead lighting, full IES cut-off or zero BUG rating whichever terminology is being used today.
5. Construct a 12 foot wide shoulder with full depth pavement to act as decel lane on route 11 coming into the site drive a minimum of 250 feet long with a taper that is appropriate for the posted speed.
6. Access road shall be paved for a distance equal to 1.5 times the length of the largest vehicle expected to use the site. (ie 70 foot long truck and trailer would need to be paved back 105 feet)

Intersection of Route 11 and 212

1. Construct a 12 foot wide shoulder with full depth pavement, for 250 feet prior to Route 212 and extend onto Route 212 an additional 250 feet with appropriate tapers at both ends. This will help ensure the roadway maintains shoulder pavement integrity as trucks make the turn from route 11 onto Route 212. It also allows trucks to slow down for the turn without impeding Route 11 traffic.

The sections of I-95, Route 11 and Route 212 to be used by the applicant have a significant crash history. The section of I-95 is currently served by portable Changeable Message Signs (CMS) to warn motorists of crashes, weather related incidents or other safety related warnings. MainDOT is requesting that two CMS boards be placed along route 212 (one heading eastbound near route 11 and 1 heading WB near Route 2) for the purpose of providing the same types of warnings being conveyed to I-95 motorists. These CMS would need to meet MainDOT standards and connect to our Transportation Management Center (TMC) via cell modems and be able to communicate to our ATMS software.
Hello Stacie:

My apologies – I do not have any emails exchanged after our phone conversation about the project on August 4th.

The Phase 0 report submitted by Northeast Archaeology Research Center is acceptable as written, and quite useful. It indicates that there are some limited stone outcrops that might have been used as tool stone sources that require further archaeological work before construction. And the Phase 0 report also locates a glacial landform close to Pickett Mtn Pond stream that does need field testing in advance of development.

The project area examined by NEARC is the older 295 acre proposed area. However, that 295 acre area is more or less congruent with the area in the revised June 30, 2020 Wolfden rezoning filing designated for “location of buildings and facilities.” We can deal with archaeological issues on the additional 200+ acres (to make up 500 acres), if there is going to be development on them, at the time of the development application.

Conditional upon doing further archeological work, basically Phase I and if necessary follow-up work to focus on the resource areas (bedrock outcrops, glacial landforms) identified in the Phase 0 report, and any other areas proposed for ground disturbance, at the time of the development permit application, the rezoning permit will have no effect on archaeological sites.

Regards, Art Spiess

Dr. Arthur Spiess
Senior Archaeologist, Maine Historic Preservation
State House Station 65
Augusta, ME 04333
desk phone: 207-287-2789
Bob,

Yesterday, Stacie Beyer (DEP), Kristin Puryear (MNAP), and I - along with Jeremy Ouellette from Wolfden - conducted a site visit to the wetland located along the western shore and inlet stream to Pickett Mountain Pond (T6 R6 WELS) to check for presence of shrubby cinquefoil, the host plant for Clayton’s copper (state-threatened). We did not find any and determined the wetland was not appropriate habitat for either the host plant or the butterfly, therefore any concerns for Clayton’s copper related to the re-zoning proposal are no longer relevant.

beth

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Beth I. Swartz, Wildlife Biologist
Reptile, Amphibian and Invertebrate Group
Maine Department of Inland Fisheries and Wildlife
650 State Street, Bangor, ME 04401
(207) 941-4476
mefishwildlife.com | facebook | twitter
PLEASE SUPPORT MAINE’S ENDANGERED & NONGAME WILDLIFE!
Purchase a Loon Plate | Check-off at Tax Time

Correspondence to and from this office is considered a public record and may be subject to a request under the Maine Freedom of Access Act.
Information that you wish to keep confidential should not be included in email correspondence.
DATE: October 15, 2020

TO: Stacie R. Beyer, Planning Manager, Land Use Planning Commission

FROM: Daniel B. Locke, Hydrogeologist, Maine Geological Survey, Licensed Professional Geologist, Maine #240, Professional Hydrogeologist (AIH) #1501

SUBJECT: Rezoning to D-PD Subdistrict for the (proposed) Pickett Mountain Metallic Mineral Mine, ZP 779, Wolfden Mt. Chase, LLC, T6 R6 WELS - Request for additional information

As a part of the Maine Geological Survey’s (MGS’s) agreement with the Land Use Planning Commission (LUPC) concerning technical review assistance, I am providing review comments on the following document as well as supporting documents to this permit as provided by LUPC:

Rezoning to D-PD Subdistrict for the (proposed) Pickett Mountain Metallic Mineral Mine, ZP 779, Wolfden Mt. Chase, LLC, T6 R6 WELS – (Request for additional information)

After an examination of the submitted materials and supporting documentation, I respectfully offer the following comments and requests for additional information:

In considering the viability of a zoning change to allow for a polymetallic mine at the Pickett Mountain site, it is important for the State of Maine to be presented with evidential information of other mine sites throughout the world (mining for massive sulfide ore bodies for the same or similar metals) which have used the same or very similar approach to the mining and ore processing as is being proposed here (discussions of similarities and dissimilarities of the ore deposits and approach to mining, processing and waste storage). Also, it is important to note the climate of the mine sites and compare/contrast it to that of the Pickett Mountain site in northern Maine. It is our understanding that Hecla Mining Company has been mining for silver, gold, lead, and zinc at their Greens Creek Mine since 1989 (https://www.hecla-mining.com/greens-
creek/). The Greens Creek Mine utilizes a dry-stack tailings storage approach which is thought to be the same or similar to what Wolfden Resources proposes. A discussion comparing and contrasting what Hecla is doing and what Wolfden proposes is in order. What issues and challenges have they (Greens Creek Mine) had pertaining to ground water and surface water quality? I understand that with the Greens Creek Mine, Hecla ceased operations for a few years in the mind 1990’s because of low metal prices. Similarly, a discussion of how adverse metal prices would impact the continuity of operations (and environmental monitoring) with a Pickett Mountain mine is in order.

I appreciate the opportunity of making these preliminary comments. It is hoped that the requests for additional information can be reasonably addressed and that If there are any questions, please call me at 207-287-7171 or e-mail me at Daniel.B.Locke@maine.gov.
To whom it may concern,

The Penobscot County Commissioners, during their public meeting on November 3, 2020, have expressed concern with the Wolfden Rezoning Petition. The Commissioners are concerned with the ability of the company to finance the project. Further, the Commissioners have concerns over the environmental impacts of the project.

Wolfden has failed to prove it can treat polluted wastewater adequately, has proposed disposing of mine waste in violation of Maine’s mining law, and has not documented sufficient financial capacity to operate a mine of this type. Wolfden’s inability or avoidance of answering LUPC staff questions about the viability of the proposed mine is also concerning to the County Commissioners.

Ultimately, while the Commissioners do recognize the positive impact the project would have on employment in the area, they do not believe the project to be in the best interest of Penobscot County.

Respectfully,
Penobscot County Commissioner’s

[Signatures]

Peter K. Baldacci, Chairman
Laura J. Sanborn
Andre’ E. Cushing, III
November 9, 2020

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

RE: Wolfden Resources Mineral Mining Rezoning Petition, T6R6 WELS; Resource Information.

Dear Ms. Beyer,

The Maine Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands has reviewed the Land Use Planning Commission Zoning Permit 779 by Wolfden Mt. Chase, LLC, and has several specific comments shared below. As a preface to the comments, it is important to note that the Bureau does not directly own and manage lands in the immediate vicinity of the proposed mining area. As such, the Bureau’s comments center on ATV and snowmobile trail connectivity and general access to private lands for traditional recreational activities.

**ATV and Snowmobile Trail Connectivity**
The Bureau’s Off-Road Vehicle program provides grant funding and works with snowmobile and ATV clubs across Maine to develop and maintain interconnected trail linkages. ATV and snowmobile trail connections on private lands in the general vicinity of the project provide important links and experiences. Motorized trail use in the region is instrumental to the local businesses and others who cater to trail use. Trails in T6R6 WELS are a major connection for Millinocket, East Millinocket, Patten, and Shin Pond. The Bureau would like to see the existing trail connectivity retained.

**Access for Traditional Recreational Activities**
It is reasonable to assume the area supports traditional recreational activities, including but not limited to hunting, fishing, and wildlife observation. Supporting and upholding Maine’s tradition of public access to private lands for outdoor recreation is regularly identified as a significant issue in reports, most notably the Maine State Comprehensive
Outdoor Recreation Plan. The Bureau would appreciate commitments to continued public recreational access, with reasonable exceptions associated with public safety.

The Bureau also notes and references the Maine Department of Inland Fisheries and Wildlife's (MDIFW) observations and recommendations submitted on September 11, 2020. MDIFW notes the aquatic resources, with particular reference to the significance of native brook trout and the quality of landlocked salmon and brook trout fisheries in Pleasant and Mud Lakes. This reporting on the quality of the fishery resource supports the lands in the vicinity of the proposed mining area having recreational value for traditional recreational activity.

Thank you for the opportunity to provide these comments. If you have any questions on the comments, please do not hesitate to contact me at 207-441-9152 or at rex.turner@maine.gov.

Sincerely,

Rex Turner
Outdoor Recreation Planner, Maine Bureau of Parks and Lands

Cc: Andrew Cutko, Director, Maine Bureau of Parks and Lands
REQUEST FOR REVIEW AND COMMENT ON PENDING APPLICATION

Date: August 04, 2020  Permit #: ZP 779  Tr#: 51512  Analyst: Stacie Beyer

Applicant: Wolfden Mt. Chase, LLC  Location: T6 R6 WELS

Project: Rezoning to D-PD Subdistrict for the Pickett Mountain Metallic Mineral Mine

Special Notes: This is a petition for a zone change that would allow the landowner to move forward to the permitting stage. If the zone change is approved by the Commission, DEP would be the lead agency for permitting and LUPC would have a certifying role. Links to the petition, supporting materials, and references are attached.

Please use this form to submit comments & recommendations regarding the petition. Those indicated below have been requested to review this petition.

<table>
<thead>
<tr>
<th>Bureau of Parks and Lands, SHS #22 Attn.: Outdoor Recreation, Rex Turner</th>
<th>Maine Forest Service Attn.: Don Mansius</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEP, SHS #17 or 312 Canco Rd. Portland, ME 04103 Attn.: Mining Review, Mark Stebbins and Mike Clark</td>
<td>Natural Areas Program, SHS #93 Attn.: Lisa St. Hilaire</td>
</tr>
<tr>
<td>DEP, SHS #17 Attn.: Groundwater Review, John Hopeck</td>
<td>State Geologist, NRIMC, SHS #22 Attn.: Daniel Locke</td>
</tr>
<tr>
<td>DEP, SHS #17 Attn.: Surface Water Review, Tom Danielson</td>
<td>State Soil Scientist, SHS #28 Attn.: David C. Rocque</td>
</tr>
<tr>
<td>DEP, SHS #17 Attn.: Waste Water Treatment, Gregg Wood and Cindy Dione</td>
<td>DOT, Traffic, SHS #16 Attn.: Steve Landry</td>
</tr>
<tr>
<td>DEP, SHS #17 Attn.: Air Quality Review, Jeff Crawford</td>
<td>County Commissioners Attn: Shaw Weeks</td>
</tr>
<tr>
<td>DEP, 106 Hogan Road, Bangor Attn.: Solid Waste Review, Karen Knutti</td>
<td>Historic Preservation Commission, SHS #65 Attn.: Art Spiess</td>
</tr>
<tr>
<td>DIF&amp;W, SHS #41 (email: <a href="mailto:IFWEnvironmentalreview@maine.gov">IFWEnvironmentalreview@maine.gov</a>) Attn.: John Perry, Environmental Review Coordinator</td>
<td></td>
</tr>
</tbody>
</table>

After review of the petition and consideration of the proposal’s probable impacts, we have:

☐ No comments on the proposal  ☐ Comments on the proposal are attached

Comments (attach additional pages as necessary):

Signature: ____________________________ Date: ____________________________

Reports of staff permitting decisions, can be found here:  http://www.maine.gov/dacf/lupc/reports/
Review Materials

All pertinent materials for review of the petition are found on the LUPC’s website.

Review Criteria, Commission Rules Chapter 12:


Current Version of the Petition:


Project Specific Webpage:


Overview of Estimated Time Line:


Last Request for Additional Information:


(Please note the LUPC expects to send a follow-up letter requesting more information. This letter will be posted on the project specific webpage shortly. We will notify all agencies, when we receive any new information from the petitioner.)
MEMORANDUM

Maine Natural Areas Program
Department of Agriculture, Conservation and Forestry
State House Station #177, Augusta, Maine 04333

Date: November 17, 2020
To: Stacie Beyer, LUPC Planning Manager
From: Kristen Puryear, Ecologist
Re: Rare and exemplary botanical features, ZP 779, Wolfden Mt. Chase, LLC, Rezoning to D-PD Subdistrict for the Pickett Mountain Metallic Mineral Mine, and Follow up for Additional Information for Same, T6 R6 WELS, Maine.

I have searched the Maine Natural Areas Program’s (MNAP’s) Biological and Conservation Data System files in response to your request received August 4, 2020 for review and comment on the Wolfden Mt. Chase, LLC rezoning petition for 528 acres in T6R6 WELS, Maine.

This search included a review of documented rare and unique botanical features, including the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Please refer to MNAP’s initial January 22, 2020 response to Wood Environment & Infrastructure Solutions (attached). In that response, MNAP identified a priority area for botanical survey to the north and downslope of the project area, around Pleasant Lake and Mud Pond. This area is a lakeside graminoid/shrub fen that is located downhill and downstream from the proposed project site near Pickett Mountain. Due to concerns related to changes in hydrology, runoff, and water quality, MNAP strongly recommends survey of this fen by a qualified ecologist during the growing season to determine presence/absence of rare plants and natural community type(s) that may be present at that location (using the Maine natural community classification Natural Landscapes of Maine: A Guide to Natural Communities and Ecosystems by Gawler and Cutko, 2018 revised edition). The MNAP requests the opportunity to review and approve the credentials of any field/botanical contractor identified by Wolfden Mt. Chase LLC. The MNAP is also available to conduct this survey, for a fee, if Wolfden Mt. Chase LLC or its contractors cannot identify a qualified ecologist.

On October 1, 2020, Beth Swartz (MDIFW Wildlife Biologist), you (Stacie Beyer, LUPC Planner), Jeremy Ouellette (Wolfden), and I (Kristen Puryear, MNAP Ecologist) visited the wetland located along the western shore and inlet stream to Pickett Mountain Pond in T6 R6 WELS to check for presence of shrubby cinquefoil, the host plant for the Clayton’s Copper butterfly (State-Threatened). Shrubby cinquefoil was not found during this visit, and this wetland did not meet criteria for mapping as a rare or exemplary natural community.

The January 22, 2020 response also identifies botanical features within four miles of the original rezoning petition. These features are: Orono Sedge at Hersey Route 11 Roadside, Montane Spruce Fir Forest and Spruce – Pine Woodland at Mount Chase, and Spruce – Fir – Northern Hardwoods Ecosystem at Hay Brook Mountain. This larger rezone area includes an additional natural community at Hay Brook Mountain, Enriched Northern Hardwoods Forest.
None of these features is expected to occur within the 528-acre area under consideration for this rezoning petition.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, MNAP cannot provide a definitive statement on the presence or absence of unusual natural features at this site. MNAP recommends that rare plant surveys and recommended ecological inventory be included within baseline surveys during the growing season and therefore planned for in-advance within any Work Plan developed for the Pickett Mountain project.

The Maine Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We welcome the contribution of any information collected if an additional site survey is performed.

Thank you for using the Maine Natural Areas Program in the environmental review process. Please do not hesitate to contact our office if you have further questions about the Natural Areas Program or about rare or unique botanical features at this site.
January 22, 2020

Peter Thompson  
wood., Wood Environment & Infrastructure Solutions  
11 Congress Street, Suite 200  
Portland, ME 04101  

Via email: peter.thompson@woodplc.com  

Re: Rare and exemplary botanical features in proximity to: Wolfden Pickett Mountain Site, T6 R6 WELS, Maine  

Dear Mr. Thompson:  

I have searched the Maine Natural Areas Program’s (MNAP’s) Biological and Conservation Data System files in response to your request received December 4, 2019 for information on the presence of rare or unique botanical features documented from the vicinity of the project in T6R6 WELS, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.  

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.  

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.  

Please refer to the attached supplemental information regarding rare and exemplary botanical features documented to occur within four miles of the project site. The list includes information on one feature, Orono Sedge, known to occur historically in the area. MNAP does not expect that this rare sedge species would be found at the Pickett Mountain site. Also attached is a map showing the features that occur within three miles of the project site. MNAP has received landowner permission to release this map which shows exemplary Montane Spruce – Fir Forest and exemplary Spruce – Pine Woodland at Mount Chase south of the project site. Please also refer to the attached factsheets for more information about these natural community types.  

MNAP has also identified a priority area for botanical survey on the property owned by Wolfden Mt. Chase LLC. This area is a lakeside graminoid/shrub fen between Pleasant and Mud Lakes. As this fen is downhill and downstream from the proposed project site near Pickett Mountain, MNAP strongly recommends survey by a qualified ecologist to determine presence/absence of rare plants and natural community type(s) that may be
present at that location per the Maine natural community classification (Natural Landscapes of Maine: A Guide to Natural Communities and Ecosystems by Gawler and Cutko, 2018 revised edition). The MNAP is available to conduct this survey, for a fee, if you cannot identify a qualified ecologist. Please contact me at 207-287-8043, kristen.puryear@maine.gov, if you are interested in MNAP conducting this survey.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Maine Natural Areas Program (MNAP) is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. MNAP welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by MNAP are to be published in any form, the Program should be informed at the outset and credited as the source.

The Maine Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $375.00 for five hours of our services.

Thank you for using MNAP in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Kristen Puryear | Ecologist | Maine Natural Areas Program
207-287-8043 | kristen.puryear@maine.gov
Wolfden Pickett Mountain Site
T6 R6 WELS, Maine

Approximate Project Location
Montane Spruce - Fir Forest
Spruce - Pine Woodland

Town

0 0.25 0.5 Miles

Maine Natural Areas Program, December 2019
<table>
<thead>
<tr>
<th>Common Name</th>
<th>State Status</th>
<th>State Rank</th>
<th>Global Rank</th>
<th>Date Last Observed</th>
<th>Occurrence Number</th>
<th>Habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montane Spruce - Fir Forest</td>
<td>&lt;null&gt;</td>
<td>S5</td>
<td>G3G5</td>
<td>2005-07-18</td>
<td>9</td>
<td>Conifer forest (forest, upland)</td>
</tr>
<tr>
<td>Orono Sedge</td>
<td>T</td>
<td>S3</td>
<td>G3</td>
<td>1989-06-27</td>
<td>31</td>
<td>Old field/roadside (non-forested, wetland or upland)</td>
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<tr>
<td>Spruce - Fir - Northern Hardwoods Ecosystem</td>
<td>&lt;null&gt;</td>
<td>S5</td>
<td>GNR</td>
<td>2003-06-05</td>
<td>16</td>
<td>Conifer forest (forest, upland), Hardwood to mixed forest (forest, upland)</td>
</tr>
<tr>
<td>Spruce - Pine Woodland</td>
<td>&lt;null&gt;</td>
<td>S4</td>
<td>G3G5</td>
<td>2005-07-18</td>
<td>8</td>
<td>Dry barrens (partly forested, upland), Rocky summits and outcrops (non-forested, upland)</td>
</tr>
</tbody>
</table>
Spruce - Pine Woodland

**State Rank S4**

**Community Description**
This type is a mixed canopy woodland (25-70% closure) in which red spruce and/or white pine is always present and associated species vary. Red spruce or white pine is strongly dominant at some sites; at others, the canopy is mixed, with no one tree species strongly dominant. White spruce may rarely replace red spruce at coastal sites. The shrub layer is typically very sparse (and variable in composition), and the herb layer has mostly 15-50% cover. Heath shrubs are the dominant feature of the herb layer; herb species rarely exceed 8% cover. The bryoid layer is sparse at some sites (<25%) and well developed at others (35-70%). Fruticose lichens typically make up half or more of the bryoid cover.

**Soil and Site Characteristics**
Sites occur on mid to upper slopes (usually 10-20% slope) and low summits at elevations up to 2000’. Soils are thin (<25 cm), consisting of coarse mineral soil or poorly decomposed duff, and form patches over the bedrock substrate. The very well drained soils are acidic (pH 4.6-5.2) and nutrient poor. Some sites show evidence of past fire, but many do not.

**Diagnostics**
Sites are woodlands on bedrock, with conifer cover exceeding deciduous cover. Red spruce is typically dominant, or occasionally co-dominant with white pine or red spruce.

**Similar Types**
Other upland coniferous woodlands may include red spruce but will have other tree species (northern white cedar, pitch pine, red pine, jack pine, or black spruce) in greater abundance. Oak - Pine Woodlands may have considerable red spruce (an oak - spruce mix), but have more deciduous than coniferous tree cover. Moving downslope, or into areas of greater soil development, these woodlands can grade into spruce or pine forests, but those have more continuous canopy and less shrub and herb cover.

**Soil**
Spruce - Pine Woodland

**Location Map**

---

**Characteristic Plants**
These plants are frequently found in this community type. Those with an asterisk are often diagnostic of this community.

**Canopy**
- Balsam fir*
- Black spruce*
- Northern white cedar*
- Paper birch*
- Red spruce*
- White pine*
- White spruce*

** Sapling/shrub**
- Bayberry*
- Shadbush
- Wild-raisin*

**Dwarf Shrub**
- Black huckleberry*
- Lowbush blueberry*
- Sheep laurel*

**Herb**
- Bracken fern
- Dicranum moss

**Bryoid**
- Red-stemmed moss
- Reindeer lichen*

---

**Examples on Conservation Lands You Can Visit**
- Holbrook Island Sanctuary State Park - Hancock Co.
- Mahoosuc Mountain, Mahoosuc Public Lands - Oxford Co.
- Mansell Mountain, Acadia National Park - Hancock Co.
- Nahmakanta Public Lands - Piscataquis Co.
- Petit Manan Point, Petit Manan National Wildlife - Washington Co.

**Conservation, Wildlife, and Management Considerations**
Most sites have little pressure from development or timbering; the primary impacts are from recreational use. Communications towers or wind turbines could have an impact on some of these woodlands on mid-elevation summits. Several sites are in public or private conservation ownership.

Birds that may nest in this habitat include the sharp-shinned hawk, gray jay, yellow-bellied flycatcher, boreal chickadee, Blackburnian warbler, red crossbill, and northern parula.

**Distribution**
New England - Adirondack Province and Laurentian Mixed Forest Province, extending eastward, westward, and northward from Maine.

Landscape Pattern: Small Patch
Montane Spruce - Fir Forest

State Rank  S5

Community Description
These closed canopy or sometimes patchy canopy forests are dominated by red spruce (50-95% cover); fir is a common associate (up to 35% cover) in younger stands and in canopy gaps, and yellow birch is the most common hardwood. Other conifers (northern white cedar, hemlock, or white pine) occasionally reduce the spruce dominance to as low as 40% cover. Striped maple is typical in the shrub layer, along with tree saplings. Dwarf shrubs are conspicuously absent, except for a bit of velvet-leaf blueberry. Most of the ground surface is a lush mosaic of feather-mosses and leafy liverworts.

Soil and Site Characteristics
These forests occur on cool and moist microsites at moderate elevations (600’-2500’, perhaps slightly higher), and north of 45 degrees latitude. Slopes are moderate to steep (5-50%), and usually north, west, or east facing. Soils are mostly well drained (some imperfectly drained), sandy to loamy, of moderate depth (2.5-50 cm), with pH 5.0-5.5.

Diagnostics
Red spruce is dominant, and yellow birch is the most abundant hardwood. Herbaceous species exceed 15% cover, with montane/boreal herbs such as bluebead lily, northern wood-sorrel, creeping snowberry, mountain wood fern, and/or rose twisted stalk locally common. Byoids exceed 40% cover, with a large proportion of feather-mosses.

Similar Types
Fir - Heart-leaved Birch Subalpine Forests can share many species and often grade into this type as elevation decreases, but will have fir more abundant than spruce in the canopy, shorter trees, and canopy gaps more frequent. Spruce - Fir - Broom-moss Forests have similar canopies but much more depauperate herb and bryoid layers. They usually occur on somewhat drier sites and lack the assortment of montane/boreal herbs and the most common mosses will be broom-mosses rather than feather-mosses. Some Maritime Spruce - Fir Forests have a similar herb layer, but if so they have more canopy fir and occur along the immediate coast.

Conservation, Wildlife, and Management Considerations
This is the characteristic spruce - fir type of mountain slopes just below the subalpine zone, and it is extensively harvested and managed. Spruce budworm has impacted many sites as well, creating patchy forest structure. Some areas of high ecological quality, in the hundreds of acres, are known but not necessarily designated as areas reserved from harvesting. Almost all are within a landscape of managed forest rather than surrounded by land that has been permanently cleared and converted to other uses.

This community type may be utilized as nesting habitat by a number of coniferous forest specialist bird species, such as the sharp-shinned hawk, yellow-bellied flycatcher, bay-breasted warbler, Cape May warbler, blackpoll warbler, northern parula, blackburnian warbler, boreal chickadee, Swainson’s thrush, red crossbill, white-winged crossbill, gray jay, and spruce grouse.

Distribution
Western Maine westward (New England - Adirondack Province).

Landscape Pattern: Large Patch, mostly as hundreds of acres.

Location Map

Characteristic Plants
These plants are frequently found in this community type. Those with an asterisk are often diagnostic of this community.

Canopy
Balsam fir*
Red spruce*
Yellow birch*

Sapling/shrub
Balsam fir*
Red maple
Striped maple

Dwarf Shrub
Velvet-leaf blueberry

Herb
Bluebead lily*
Bunchberry
Canada mayflower
Creeping snowberry*
Goldthread
Northern wood-sorrel*
Painted trillium
Starflower

Bryoid
Common broom-moss*
Mountain fern moss
Red-stemmed moss
Three-lobed bazzania

Associated Rare Plants
Boreal bedstraw
Lesser wintergreen

Associated Rare Animals
Bicknell’s thrush

Examples on Conservation Lands You Can Visit
- Deboullie Ponds Public Lands – Aroostook Co.
- Elephant Mountain, Appalachian Trail – Franklin Co.
- Lower Horns Pond Trail, Bigelow Preserve – Franklin Co.
- Traveler Mountain, Baxter State Park – Piscataquis Co.
- Whitecap Mountain, Appalachian Trail – Piscataquis Co.

Montane Spruce - Fir Forest
STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SU Under consideration for assigning rarity status; more information needed on threats or distribution.

SNA Rank not applicable.

S#? Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: State Rarity Ranks are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

GNR Not yet ranked.

Note: Global Ranks are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine’s Endangered and Threatened plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program’s database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

PE Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap
Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population’s viability, capability to maintain itself.

- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.

- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of A, B, C, or D, where A indicates an excellent example of the community or population and D indicates a poor example of the community or population. A rank of E indicates that the community or population is extant but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

**Note:** Element Occurrence Ranks are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
http://www.maine.gov/dacf/mnap
Hi Stacie:

After reviewing the new soil characterization survey, I have the following comments. I call this a characterization soil survey because it is not a standard soil survey complete with soil map units. That level of soil survey will be needed for the development permit, provided that the re-zoning application is approved. For the purpose of re-zoning, this characterization survey is appropriate and sufficient to determine the overall suitability of the site and proposed layout for the re-zoning review.

As I understand it, this proposed project is designed to make significant alterations to the area in order to extract and process valuable minerals. I also believe that the applicant intends to restore the site to as near the original condition as possible, after the mining operation is completed. That would include the natural hydrology and landforms. The more suitable the site, the less alteration is needed and the easier it will be to restore the site. The poorer the suitability, the more significant the alteration is required and the more difficult it will be to restore the site to its pre-construction condition it will be.

Based on the soil characterization survey, sites 2 and 4 have significant wetness limitations while sites 1 and 3 have bedrock depth and some slope limitations. Bedrock depth limitations, particularly on slopes, can be overcome by blasting and/or fill, both of which significantly alter the terrain but do not affect the natural hydrology to any great extent. Wet soils are a more significant concern as they will need to be overcome in order to accommodate the proposed development and will affect the natural hydrology. Bedrock depth is an issue that, once overcome, is no longer a problem. Groundwater however, is a more significant concern in that it is always present and may affect the project at any time. I am particularly concerned about the waste rock storage and treatment ponds being constructed on sites where there is a high seasonal groundwater table. Any failure of the mechanism used to lower or divert the groundwater table have the potential to result in serious groundwater quality impacts. The waste water storage ponds will eventually be closed, after the mining operation is complete. The waste rock storage areas however, will be there forever and so the groundwater diversion or lowering will need to remain in place equally as long. Over time, if proper maintenance is not regularly provided, the groundwater table diversion or lowering will fail and impact the waste rock storage. If possible, waste rock storage areas and treatment ponds should be located on soils that are more suitable for that purpose and do not require regular and continual maintenance not control the high groundwater table.

Regarding domestic wastewater disposal and treatment, I prefer spray irrigation over a conventional subsurface disposal system. The site is naturally forested with an excellent organic duff layer making it well suited to treat the wastewater. Using spray irrigation will require very little alteration of the soils on the site whereas a subsurface system will require significant soil alteration.

Let me know if you have any questions.
David Rocque
State Soil Scientist, Department of Agriculture, Conservation, and Forestry
Bureau of Agriculture, Food & Rural Resources
Division of Agricultural Resource Development
207-287-2666
Additional information from local. I wasn’t aware of Moos outlook and didn’t have it on the map I sent originally.

Brian Bronson  
Supervisor Off Road Recreational Vehicle Program  
Bureau of Parks and Lands  
State House Station 22  
Augusta, Me 04333-0022  
207-287-4958

George Hurteau  
Recreational Trail Coordinator  
Off-Road Recreational Vehicle Program  
Bureau of Parks and Lands  
207-557-2476
There are two vista areas that are designated on this map with binoculars. Between Haybrook and Roberts mountains and up on Wardsworth Mountain. These are the only two destination vistas that I am aware of but as Joe said there are several locations along the trails where you get good views. It is unclear to me if this would be visible from those vistas or not but I am assuming it would be at least partially visible?

Brian

---

From: Beyer, Stacie R <Stacie.R.Beyer@maine.gov>
Sent: Tuesday, January 19, 2021 4:54 PM
To: Higgins, Joe <Joe.Higgins@maine.gov>; Turner, Rex <Rex.Turner@maine.gov>; Bronson, Brian N. <Brian.N.Bronson@maine.gov>
Subject: RE: Wolfden Rezoning Petition

Thanks, Joe.

We are looking specifically for areas along that section that have been developed as or actively used for places to stop and rest, eat lunch, or meet up with other riders.

Brian, do you know if there is an informal or formal pull-off on that trail section?

Stacie

---

From: Higgins, Joe <Joe.Higgins@maine.gov>
Sent: Tuesday, January 19, 2021 3:07 PM
To: Turner, Rex <Rex.Turner@maine.gov>; Bronson, Brian N. <Brian.N.Bronson@maine.gov>
Cc: Beyer, Stacie R <Stacie.R.Beyer@maine.gov>
Subject: RE: Wolfden Rezoning Petition

Hello Stacy,

The Snowmobile trail is a trail that is used for a great view as you are riding along. Not sure how many riders go and stop for pictures and that sort of thing. May want to reach out to Shin Pond Village as people stay at their cabins and they have more of a firsthand thought on the type of trail this is.

I can't speak for the ATV riders, but Brian Bronson may have some knowledge on that.

Joe Higgins
Supervisor Off-Road Vehicle Snowmobile Program
State of Maine
Dept. of Agriculture Conservation and Forestry
Bureau of Parks and Public Lands
Off Road Vehicle Office
(207) 287-4959
Fax (207) 287-8311
January 20, 2021

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


Dear Ms. Beyer:

This letter responds to the Maine Land Use Planning Commission’s (LUPC) December 4, 2020, letter requesting technical assistance from the U.S. Fish and Wildlife Service (Service) on the potential impacts the Wolfden Mt. Chase proposal could have on federally listed fish and wildlife species and their habitat.

Section 7 of the Endangered Species Act (ESA) and associated regulations, requires that if there is a federal nexus for a project, federal agencies, in consultation with the Service, will determine the effects of the construction, operation, and post-operation (e.g., restoration) of the proposed project on federally listed species and designated critical habitat. This is defined as all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. For large or complex projects, the effects to federally listed species and critical habitat are analyzed by a consulting federal agency in a biological evaluation document. Effects to designated critical habitat for listed species would be separate from the analysis of effects to individuals. Critical habitat are specific areas within the geographic area that contain the physical or biological features that are essential to the conservation of endangered and threatened species.

Federal agencies request formal consultation with the Service when projects have adverse effects (i.e., the likely take of listed species). In a formal consultation, the Service prepares a biological opinion document that evaluates these effects and ensures that project does not jeopardize the continued existence of listed species or causes adverse modification of the critical habitat. Measures to avoid and minimize adverse effects to listed species and designated critical habitat would be considered during a section 7 consultation.
Based on the project description and location of the Wolfden Mt. Chase proposal provided by LUPC, this project has the potential to affect Canada lynx (*Lynx canadensis*), northern long-eared bat (*Myotis septentrionalis*), and Atlantic salmon (*Salmo salar*), though this list is subject to change and the potential listed species affected by project activities should be reexamined if there is a federal nexus created.

The Service is uncertain whether this project will have a federal nexus (require a federal permit or uses federal funding) and whether the Maine Field Office will review this project under the ESA. The Army Corps of Engineers or other federal agencies that may have jurisdiction concerning wetlands, mining, and environmental regulations have not contacted our office concerning ESA consultation. Federal agencies nor the Service have fully evaluated the effects of the Wolfden Mt. Chase proposal and the following is a preliminary review by the Service. If the proposal has a federal nexus in the future the federal agencies and the Service will complete a more thorough examination and analysis of the effects to listed species and critical habitat.

**Canada Lynx**

Canada lynx occur in T6 R6 and adjacent townships (Figure 1, data from Maine Inland Fisheries and Wildlife [MDIFW]). MDIFW has documented lynx tracks, locations of radio-tagged lynx, and lynx incidentally trapped in T6 R6 and surrounding townships. Forested habitat described in the Wolfden Mt. Chase petition includes recently logged (in the last 7 to 10 years) sapling and pole stage spruce-fir stands, habitat that is considered high quality for snowshoe hare, the primary prey for Canada lynx. Aerial photography of the project location confirms recent logging activity. Based on this information, it is likely that resident lynx have established home ranges that include or are near the proposed Wolfden project. Additionally, the proposed project location overlaps with Canada lynx designated critical habitat. Loss of habitat due to project related activities would typically be considered in relation to the value of the foraging habitat and size of lynx home range (average home range for females is about 6,550 acres, males 14,300 acres).

**Atlantic Salmon**

Although species specific occurrence data is not available for the proposed location of the Wolfden Mt. Chase project, the location does overlap designated critical habitat and several streams in the immediate vicinity have been modeled as suitable Atlantic salmon rearing streams. These streams include the West Branch Mattawamkeag, which flows from south to north along the west side of the project into Pleasant Lake and Mud Pond; the unnamed stream flowing west to east along the south portion of the project into Pickett Mountain Pond; and the unnamed streams flowing south to north along the east portion of the project connecting Pickett Mountain Pond with Grass Pond, Mud Lake, and the West Branch Mattawamkeag.
Without doing site specific surveys and requesting data from the Maine Department of Marine Resources, it is difficult to say with any confidence whether these streams are or aren’t occupied by Atlantic salmon. Atlantic salmon have been observed spawning in the East Branch Mattawamkeag, approximately 30 river miles from the project vicinity, though there is a potential barrier to fish passage on the West Branch Mattawamkeag in the town of Island Falls, approximately 15 miles downstream of the project vicinity.

**Northern Long-eared Bat**

Although critical habitat has not been designated for the northern long-eared bat, they have the potential to occur throughout Maine, including the proposed location of the project. Though there are no known hibernacula in the immediate vicinity and the closest known hibernacula is approximately 50 miles west of project, northern long-eared bats are known to travel great distances from hibernacula, sometimes hundreds of miles, to summer roosts, a distance that would overlap the proposed project location. In general, the northern long-eared bat is considered a habitat generalist, and has flexible habitat requirements when it comes to the breeding season, which lasts from approximately April through October. The easiest way to minimize impacts to northern long-eared bats in the project vicinity would be to prohibit tree removal activities within these dates.

**Potential Effects to Listed Species**

Potential effects to Canada lynx, Atlantic salmon, or northern long-eared bat from the proposed Wolfden Mt. Chase project may include:

- effects to quality and status of habitat
- anticipated management of the acreage, including the areas beyond where ground disturbance will occur, during construction and future operations
- effects of construction activities including noise, lighting, road building, pedestrian and vehicular traffic
- extent of new infrastructure; including road, buildings, gates, fencing, and equipment housing and pads
- vehicle traffic to and from the mine and risk of road mortality
- possible barriers to terrestrial and aquatic movements, such as fencing or inadequate water crossing structures
- risks posed by contaminated materials, settling ponds, ore washing areas, flotation ponds, wastewater storage and open septic systems, various types of equipment used in mining operations, both above and below ground
- sources of human disturbance from mine operations, including lighting, noise, waste
- frequency and duration of above- or below-ground blasting, crushing, use of compressed air and attenuation of this noise
- possible entrapment animals in fenced areas, open slurry ponds, other infrastructure
- possible plans for future expansion
- reclamation plans and effects on listed species and its habitat
- nature of any land conservation offered by the applicant
This list is not exhaustive and other factors may exist that have not been addressed or mentioned in this letter. A more thorough examination of potential impacts to listed species and their habitat from the proposed project would take place between the Service and the consulting federal agencies if a federal nexus is created. Please contact Patrick Dockens at 207/902-1586 or by email at Patrick_Dockens@fws.gov if you have any questions.

Sincerely,

Nate Carle,
Acting Project Leader
Maine Field Office
Maine Fish and Wildlife Service Complex
MEMORANDUM

To: Stacie Beyer, Planning Manager, Land Use Planning Commission
From: Michael Clark, Mining Coordinator, Bureau of Land Resources
Date: January 28, 2021
Re: Department comments on Wolfden Mt. Chase, LLC’s petition to rezone portion of Township 6, Range 6 Penobscot County, Maine for development of an underground metallic mineral deposit, Revised June 30, 2020

The Department of Environmental Protection (Department or DEP) has reviewed the above noted zoning petition (the Petition), submitted to the Land Use Planning Commission (Commission or LUPC) by Wolfden Mt. Chase, LLC (Wolfden). The Petition provides information in support of Wolfden’s request to rezone 528.2 acres that are currently within the General Management subdistrict, in order to allow construction, mining, milling, closure and reclamation activities over an estimated 10-15 years. The project is named Pickett Mountain and is located north of Patten, in Penobscot County near the border with Aroostook County. The Department’s comments on the Petition follow.

In preparing these comments, the Department has attempted to (a) provide observation based on its experience and expertise that may assist the LUPC in its review, (b) identify any obvious issues with the proposed project that, if not addressed, would preclude Department permitting of the project under the Maine Metallic Mineral Mining Act (Mining Act), and (c) note obvious areas where the Department would require additional information if Wolfden moves forward with a permit application to the Department.

When reviewing the Department’s comments, it is important to understand that the Department conducted a high-level review of the Petition. This is far more limited than the type of review the Department conducts when reviewing permit applications. Recognizing this, there may be important environmental considerations associated with the project, including considerations that could be identified from a closer review of the Petition, that are not reflected in the comments below.

Also important to recognize is that far more information would be required as part of any permit application filed pursuant to Maine’s Mining Act and the Department’s accompanying rules, 06-096 CMR ch. 200, Metallic Mineral Exploration, Advanced Exploration and Mining (Chapter 200). This is inherent in the difference between a zoning petition and a metallic mineral mining permit application. The Department recognizes, however, that the Commission may require some similar information and that there is overlap between the information needed by the Commission to review a zoning petition and by the Department to review a permit application. Therefore, the Department includes references to Chapter 200 and notes some of the information that a permit applicant would be required to provide pursuant to this rule. This may help the Commission when evaluating its own information needs and assessing whether similar information, or a subset of similar information, is necessary as part of the rezoning process or more appropriately deferred to any subsequent permitting process.
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Finally, should an application for a mining permit ever be filed with the Department by Wolfden or any other person, the Department would review that application under the governing statute and rules based on the information in that application and the accompanying record materials. Nothing in these comments is intended to prejudge any future application, should one be filed.

A. Land Clearing and Stump Management

Wolfden proposes to clear approximately 135 acres, grind everything except large stumps, and use the ground material for erosion control. This would likely generate a large volume of biomass, which may be more than is usable on site. Large stumps will not decompose over the proposed 10-15-year project span and may need to be disposed offsite at a licensed Solid Waste Facility if onsite disposal is not permitable, which would depend on the total stump volume. Alternatives for ground stumps include exporting for biomass fuel, landfill disposal, or compost amendment.

B. Mine Development Strategy

Appendix A - Mine Development Strategy
This appendix states: “Typically, waste rock outside of the Pickett Mountain deposit is non acid generating and in fact carries significant neutralizing potential.” The nature and extent of testing that has been performed to substantiate this statement is not clear to the Department.

The Mine Development Strategy discussion in Section B(3)(d) of the Petition states that “waste rock will be mined separately and segregated from the mill feed, temporarily stored, and then returned underground as backfill on an ongoing basis.” Such waste rock may include Group A, Group B, and Group C wastes (Ch. 200, § 20(F)), which have different requirements relevant to their temporary storage and permanent disposal. The applicant may need to segregate these wastes based on their characteristics, stabilization requirements, and the suitability of different storage and long-term disposal options; the specific storage and disposal procedures for each type of waste rock must be described in detail in any permit application. (See Ch. 200, § 20 (G)(1), § 20(I), and § 21).

C. Site Layout / Exhibits with Potential Inconsistencies

Exhibit D-2A-Rev1, dated 11/03/20, shows a storage pond downgradient of the tailings facility and a “4 Acre Pond” upgradient of this facility. The “4 Acre Pond” does not appear to be discussed elsewhere in the text and its function is not clear. Is this pond to capture stormwater from upgradient of the site for use at the site or for later discharge to maintain pre-development hydrology, or will this pond also be used for runoff from the site or other potentially impacted waters? The function of all impoundments is important to understand and should be clearly described, since this will significantly affect the design of those impoundments and potentially the volume of potential discharges to the treatment plant and disposal system, as well as the available storage volume for wastewater in the event of breakdown of the treatment plant or other possible causes of wastewater accumulation.

Note that the Figure “pickett_design_v2”, dated 20/08/28 and included in the recent submission, is not consistent with Exhibit D-2A-Rev1. The “pickett_design_v2” figure apparently identifies the “4 Acre Pond” as a runoff catchment pond, as suggested above, but also shows another stormwater management pond north of the tailings facility and identifies the subsurface wastewater disposal systems as “run-off
catchments,” as well. The proposed storage pond in the vicinity of the treatment plant is not shown in this figure.

The Mine Water Management and Treatment discussion in Section B(3)(d) of the Petition states that “process and seepage water...as well as precipitation landing outside of the tailings facility footprint are collected...and routed to the south eastern (down gradient) corner of the project site into a lined raw water pond.” From this description, this pond is apparently different from the Waste Water Storage unit shown in Exhibit D-2, which would appear to be for storage of only water from the area of the tailings facility, although this is not explicitly stated, so that this raw water pond does not appear to be shown on the site plan; at least the location and approximate footprint of this pond should be shown, although more detailed sizing information on this pond and the Waste Water Storage Pond will be required as part of the water budget and water management discussion in any application. From Exhibit D-2 and other parts of the site description, it appears that at least some of this water discharged to the raw water pond will have come in contact with Group A and Group B wastes. If all of this water is returned to the mill as makeup water, that may be acceptable, but both this pond and the structure receiving runoff from the tailing area must be sized with adequate storage to prevent discharge of such waters to the environment, particularly in the event of temporary shutdown of the mill, treatment plant, or one or more of the wastewater disposal systems. In particular, measures to prevent discharges of impacted water from these ponds must be included in any plan for suspension of mining. (Ch. 200, Subchapter 7).

D. Text / Descriptions with Potential Inconsistencies

Page 5 of the Petition states that the tailings management facility “is expected to be approximately 78.4 acres built in 5 sections sequentially over the life of the operation.”

Note also that this description of the tailings facility from page 5 of the Petition appears to be inconsistent with that on page 12, which states that a “series of three tailings cells will be constructed throughout the project life.”

Appendix A - Hydrologic Water Budget – Overburden and Bedrock Groundwater Resources
There is a discrepancy between values reported for the total tailings area open at a given time. In the footnotes to the Hydrologic Budget Table it states “Assumes 15 Acres of the Total Tailings Area open at a given time” while on the following page it states ”Precipitation over much of this area (approximately 92 acres) will be managed to control run-off of non-contact waters, and water that potentially contact waste materials including waste rock and exposed tailings in the TMF (approximately 20 acres at any given time).

Natural and Cultural Resources and Policies – Scenic Resources (page 36)
This section states that “[t]he property will not be visible from anywhere along route 11 nor from any State Park or State managed trail” but then contradicts this statement on page 41 (Subdivision or Development Zoning Proposal) by stating that “[i]here may be windows of visibility to this portion of the site along SR 11.”

Attachment A – Wetland Determination Data Form
Under remarks it states: “Area has been forested and there is evidence of disturbance from this activity. Old skidder roads are present that appear to have been bulldozed as they have oil piles along the road
E. Surface Water Protection

Overall, the Preliminary Site Plan (Exhibit D-2) shows that the proposed alterations would have little direct impact to surface waters, including streams, wetlands, and vernal pools. As presented in the application and during the site visit, the proposed rezoning would have few direct impacts to surface waters and required buffer zones of natural vegetation. As part of any permit application, the applicant would need to demonstrate that the mining operation would maintain water quality and healthy aquatic life communities of surface waters on the property and further downstream.

In Attachment M, the petitioner states that, if “monitoring identifies an adverse impact, mitigation plans would be developed and implemented in consultation with the DEP.” Note, however, that Chapter 200, § 22(B)(10), (12), and (14) require that this response plan be prepared and approved by the Department prior to the confirmation of any failure to meet applicable water quality standards. Consequently, any applicant would have to submit specific proposals to address any potential failure to meet applicable water quality standards in any potentially impacted waterbody as part of the permit application process.

Construction Standard c(v) (page 4-9 of the Wood soil report) refers to setbacks from watercourses in the Subsurface Wastewater Disposal Rules; note that different setbacks apply to major and minor watercourses, and that other setbacks may apply depending on the size of the disposal system and other features in the vicinity (see Table 7B of the subsurface wastewater disposal rules).

F. Tailings Management Facility (TMF)

Note: Comments exist in other sections of this memorandum that refer to basic aspects of the TMF and associated monitoring. The Petition and supporting documents to date do not provide an engineering plan for the TMF, therefore, the Department cannot comment on the effectiveness or integrity of crucial aspects of the TMF that will be required, such as liners and caps.

Discussion questions have been raised about how dewatered tailings will be prevented from regaining moisture from precipitation prior to being capped. These and other important questions would have to be addressed in order to ensure that mine tailings would not be a source of leachate during operations or after the facility is closed. Tailings management would be reviewed in detail by the Department in any permitting process. Threshold questions related to the basic feasibility of the proposed tailings management, such as how dewatered tailings will be prevented from regaining moisture from precipitation, also would be addressed during any permitting process, but may be relevant to the Commission during the rezoning process, as well.

Phase 4 – Reclamation/Remediation (page 13)
The Gantt chart indicates three phases of tailings management facility construction. These phases are not well detailed in the Petition. The LUPC may find it helpful to better understand the phases with anticipated production volumes and how this conforms to the proposed plan that no more than 20 acres of tailings will be exposed at any given timeframe in the Hydrologic Water Budget portion of the rezoning application (Appendix A - Section B(3)(d) Potential Impacts to Existing Uses and Natural Resources). The total acreage of the TMF is 78 acres, which would require a minimum of 4 phases if not to exceed 20 acres of exposed tailings at any given time.
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If additional resources are identified within the deposit, what plan for tailings management expansion has been considered?

G. Water Treatment (permitting)

Water resources within the area of the requested rezoning are currently classified as described in 38 M.R.S. § 464, Classification of Maine waters and 38 M.R.S. § 470, Classification of ground water. Standards associated with each of these waterbodies can be found in 38 M.R.S. § 465, Standards for classification of fresh surface waters; 38 M.R.S. § 465-A, Standards for classification of lakes and ponds; and 38 M.R.S. § 465-C, Standards of classification of ground water.

Based on the Department’s review of the limited information submitted by Wolfden to the Commission with regard to ambient water quality, relevant soil data, and wastewater treatment technology, wastewater discharge volumes, and other details, the Department expects that the proposed facility would discharge pollutants at levels requiring Wolfden to apply for and obtain a Waste Discharge License, and potentially a Maine Pollutant Discharge Elimination System Permit, (WDL/MEPDES) in accordance with 38 M.R.S. § 413, Waste discharge licenses. See also 38 M.R.S. §§ 420 and 451. The WDL/MEPDES process would require Wolfden to provide additional information to the Department that would allow the Department to determine applicable requirements to eliminate or reduce pollutants pursuant to state and federal laws and regulations.

At this time, the limited information provided by Wolfden to the Commission raises several concerns for the Department, which are summarized in the non-exhaustive list below.

- Wolfden proposes to discharge treated wastewater via four subsurface units. The Department does not currently know whether this discharge would comply with existing ambient groundwater conditions. To make such a determination, the Department would require additional information such as the current ambient groundwater lab analysis and lab analysis for similar facilities that attain the ambient levels of pollutants Wolfden believes it may attain. If there are other facilities that Wolfden can point to that similarly treat ground water, the Commission might find that information helpful in its review of the Petition.

- Effluent discharged to groundwater via the subsurface treatment units proposed by Wolfden may reach certain surface waters to which discharges are prohibited or limited. In that event, the Department may not be able to issue a WDL/MEPDES for such a discharge. See County of Maui, Hawaii v. Hawaii Wildlife Fund, 140 S. Ct. 1462 (2020); 38 M.R.S. §§ 464(4)(A)(1), 465(1)(C), 465(2)(C), 465-A. Presently, however, the Department cannot determine whether Wolfden’s proposed plans would result in the functional equivalent of a direct discharge to certain surface waters and, if it did, whether the proposed discharge would be permittable. The Department would require additional subsurface investigations and information on a number of parameters, including soil type, depth to bedrock, and distance to nearest surface water body at each of the subsurface unit locations, to make such a determination.

- Additionally, should effluent discharged to groundwater via the proposed subsurface treatment units reach surface waters that must be characterized as natural, the Department may or may not be able to issue a permit for such a discharge depending on whether the discharge alters the flow or the habitat of the surface waters. See 38 M.R.S. §§ 465(1 & 2), 465-A. Again, the Department
cannot currently make such a determination and would require additional information to do so.

As noted, should Wolfden apply to the Department for a WDL/MEPDES, the licensing process would enable the Department to obtain the information it needs to determine which state and federal requirements apply to the proposed facility and to resolve issues such as those raised above. The Department has the authority and regulatory programs to address wastewater discharges from Wolfden’s proposed facility, as well as the authority to deny a WDL/MEPDES for any facility that would have an unreasonable or undue adverse impact on their receiving waters pursuant to the federal Clean Water Act and Maine law.

H. Water Treatment (proposal and site considerations)

Exhibit K – Wastewater Disposal
Although much of the engineering and design work will come at a later date, more information could be provided regarding the wastewater disposal technology and potential for groundwater flow alterations. Based on anticipated volumes of produced water from mining, ore concentration, and impervious surfaces requiring stormwater management, a system can be hypothetically described to allow for conceptualization at this stage.

Drawing 428090-AM-01 is a flow chart showing the pathways for wastewater through the treatment train proposed for the site. Following reverse osmosis treatment, the discharge may go either to “Waste/Concrete” or to “Outfall,” presumably the subsurface disposal system. Criteria for which pathway the water will take are not indicated in this chart or described in the accompanying text. Process water may be used in concrete for the purpose of neutralizing waste rock disposed in the subsurface, provided that it does not need additional chemical adjustment, but raw or treated wastewater cannot simply be discharged to the mine or elsewhere without specific approval.

Note the limitations on use of MetClear products on page 9 of the product description; although the composition of the wastewater is not known at present, the petitioner should be prepared to specifically address the applicability of these limitations should this process be chosen for use at the site.

The petitioner states in Exhibit K that the locations of the four proposed subsurface disposal fields for treated non-sanitary wastewater “will be determined based on field investigations conducted for the baseline characterization.” However, several figures included with the application, such as Exhibit D-2, Preliminary Site Plan, show locations for the proposed disposal areas. Soils information demonstrating, at a minimum, the general suitability of soils in the proposed areas might be helpful to the LUPC in its review. Given the size of the proposed areas shown on these figures, logs of multiple explorations showing suitable soils are recommended at this stage; several deep explorations within each proposed disposal area, along with other subsurface information, will be required as part of any permitting process in order to permit any of these disposal areas. Similarly, no test pit logs are presented for the site of any possibly sanitary wastewater from the proposed facility. Inspection of the site indicates that suitable sites can be found in the area of the proposed structures, but no soils data are included in the Petition reviewed by the Department.

The Mineralized Rock Milling and Floatation Strategy discussion in Section B(3)(d) of the Petition states that “potential waste chemicals or spills are collected and pumped to the tailings facility.” Although Department rules include provisions for management and disposal of Designated Chemical Materials at
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the site (Ch. 200, § 2(HH)), any permit application would have to specifically describe the contaminated or potentially contaminated materials, possibly including spill cleanup material and other wastes generated during spill response, that will be disposed of in the tailings facility, to ensure that the management and treatment systems for drainage from that area are capable of meeting the required level of treatment for water impacted by such wastes.

I. Groundwater

The Groundwater Hydrogeology discussion under Section B(3)(d) of the Petition discusses the likely permeability of the till soils at the site and possible travel times to surface water based on general literature values for till soils. Calculations of travel time, loading rate, potential mounding, and other significant elements for evaluating the likely performance and potential impacts of the wastewater disposal systems needed for a Chapter 200 permit application will require site-specific evaluation of the soils and overburden including, but not limited to, gradations, more detailed mapping (as noted in the Petition), assessment of the vertical and horizontal uniformity of these materials, and locations of points of possible groundwater discharge to the surface, if any, between the proposed disposal areas and wetland or surface water body. Similarly, a much more detailed water budget than that outlined in the Hydrologic Water Budget discussion of the Petition will be required as part of the baseline report. (See Ch. 200, § 9(C)(2) and (D)(11).) Any discussion of the location of groundwater divides and flow directions in the Petition (for example, that under Water Supplies and Mapped Aquifer Description in Section B(3)(d)) should be considered as only approximately correct at this time and requiring further refinement as part of the DEP baseline assessment process.

The petitioner should note Chapter 200, § 22(B)(1)(a)(i), which requires that compliance points for groundwater quality “are the downgradient boundaries of all mining operations as they exist at the time any sample is collected.” That is, the boundary of the mining area, for purposes of compliance with the groundwater contamination limitation defined in Ch. 200, § 2(BB), is the downgradient boundary or boundaries of those sections of the tailings management facility currently accepting or containing tailings or other Group A or Group B wastes as defined in Ch. 2, § 20(F), and not the downgradient boundary or boundaries of the remaining portion of the anticipated footprint (see also Ch. 200, § 2(KKK)). This should be reflected in any proposed monitoring plan that may be submitted to the Department, which also should include provisions for the phasing of monitoring well installation and abandonment, as also described in Ch. 200, § 22(B)(1)(a)(i).

According to Page 6 of the Petition, there will be an electrical substation on the property with an estimated area of 10,000 square feet. The petitioner should note that any oil-filled transformers or other storage of liquid petroleum or other materials presenting a potential risk to water quality in this substation or elsewhere on the site must be included in the facility contingency plan (Ch. 200, § 9(K)).

Note: The Department’s comments on the Mineralized Rock Milling and Flotation Strategy discussed above in the section on Water Treatment, relates to groundwater, as well, which is the topic of this section of the comment memo.

J. Soils

Page 4-6 of the Wood soil report describes measures than can be used to improve soil conditions in areas proposed for subsurface wastewater disposal. Information submitted to date indicates that soil conditions
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are generally appropriate at the test pit locations shown within the proposed disposal areas, but, given the large size of the proposed disposal beds, it will be necessary in any future permitting to demonstrate that generally comparable and suitable soil conditions exist within the entire footprint of any proposed field receiving water from the treatment plant. For a frame of reference, current Department guidance (see Site Location application Section 17(4)(d)) suggests that at least 2 passing test pits would be required within any areas of approximately 60’ x 60’. This guidance, along with other information regarding soil explorations in Section 17 of the Site Location Application, reflect the approach the Department likely would apply when determining the minimum number of explorations required within any of the proposed wastewater disposal beds for the proposed facility. Additional soils information may be helpful to the Commission, as well, at the rezoning phase.

Page 4-7 of the Wood soil report states that “runoff from most of the development areas will discharge to a series of … vegetated under drained soil filter fields.” Runoff from many portions of the site is likely not suitable for discharge outside of the facility and may not be treated appropriately in such systems; such waters may need to be directed to the wastewater treatment plant, or to lined storage ponds for use at the site.

The materials submitted include a Soil Conditions Summary Table, Form E from the Site Location Application, but do not include graphic or other more descriptive and complete logs of the soil conditions observed. Complete logs of all explorations would be required by the Department when reviewing any permit application and could be helpful to the Commission, as well, to the extent soil suitability is being considered as part of the rezoning process.

K. Blasting

Page 26 of the Petition states that open-air blasting for construction of the portal “is only expected to last two or three weeks” and that, following construction of the portal, “sound from the underground blasting will no longer be heard at the property boundary.” The petitioner should note that both surface and underground blasting are subject to all requirements of Chapter 200, § 20(K), although the potential adverse impacts of airblast and flyrock are obviously greatly reduced or eliminated with underground blasting. Underground blasting is exempted only from the limits on timing and number of blasts per day as described in Chapter 200, § 20(K)(5).

L. Air Quality

The air quality within the area of the requested rezoning is currently designated as attainment/unclassifiable for all national ambient air quality standards (NAAQS), meaning the existing levels of air contaminants for which NAAQS have been established are below the levels which would trigger air quality concerns. Based on the Department’s review of the limited information submitted by Wolfden to the LUPC with regard to air emissions, the equipment, activities, and operations associated with the development and operation of a metallic mineral mining facility that may impact air quality include, but may not be limited to, construction equipment and activities, drilling and blasting operations, crushing and grinding equipment and operations, material handling, transport and storage, electricity generating equipment, and facility roadways. Regulated air pollutants expected to be emitted from such equipment and activities include particulate matter (PM), particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns (PM_{2.5}), sulfur dioxide (SO₂), nitrogen oxides (NOₓ), carbon
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monoxide (CO), volatile organic compounds (VOC), and lead (Pb), as well as hazardous air pollutants (HAP).

Based on the limited information provided by Woflden to the LUPC with regard to air emissions, the Department expects that the proposed facility would emit regulated air pollutants at levels requiring Wolfden to apply for and obtain an air emission license in accordance with Major and Minor Air Emission License Regulations, 06-096 C.M.R. ch. 115 (Chapter 115). Chapter 115 provides for different application and licensing procedures depending on whether the proposed facility would be a minor source or a major source of emissions. The Chapter 115 licensing process would require Wolfden to provide additional information to the Department that would allow the Department to determine applicable requirements to control air pollution pursuant to state and federal laws and regulations, including control technology, emission standards and limitations, ambient air quality standard compliance demonstration, monitoring, equipment and operational restrictions, and recordkeeping and reporting.

M. Closure / Reclamation

Wolfden expects to be able to decommission its water management facility shortly after site closure, excavate it and dispose of “inert material (demolition debris)” underground. Demolition debris is not the same as inert material. If Wolfden has used 1 acre for onsite disposal of land clearing debris, another disposal area for demolition debris would not be exempt. Demolition debris will need to be taken to an appropriately licensed landfill for disposal. (Note: Pursuant to 38 M.R.S. § 490-NN(1)(A), Department Rules Ch. 13 (Waste Management Rules) do not apply to an application reviewed under Chapter 200. Those rules may serve as a basis for review and may inform conditions in any approval that may be granted.)

On page 21 and in similar language at several other locations in the Petition, the petitioner notes that the tailings management facility will be “revegetated and designed to allow regrowth of natural ground cover.” Certain types of natural vegetation, particularly deep-rooted woody vegetation, may not be suitable for growth on the cover system of a tailings facility and the site must be maintained to exclude such growth, which will result in some change when compared to existing views from some locations. The Forest Resources discussion under Appendix A, Section B(3)(d) of the Petition suggests that the petitioner is not considering tree growth on the tailings cover but has not yet identified the type of vegetative cover to be used. The apparent proposed topography of the tailings pile and cover suggests that it may be difficult to sustain one of the design options suggested in this section of the petition, described as a “wet cap…able to sustain a wetland like condition where large tree growth is naturally discouraged” at this site. In addition, the petitioner should note that Chapter 200, § 24(A)(3)(c)(iii) states, in relevant part: “Closed mine waste units must be graded and maintained to prevent ponding and to divert surface water drainage from covered wastes.” Therefore, the Petition reference to a “wet cap” design intended to discourage large tree growth (i.e., prevent root intrusion into the cap) likely would not be a permittable design under Chapter 200.

Phase 4 – Reclamation/Remediation (page 13)
Long term monitoring will be required following the proposed Gantt chart timeframe. It is recommended a new column be added to the chart indicating “12+ years” and should include LTM monitoring.

Attachment Q – Description of Anticipated Site Conditions Following Closure
It is highly likely following acid generating potential tests of mine waste that it will be classified as Group
January 28, 2021
Memorandum to the LUPC

A Waste defined in Chapter 200. This designation will require a composite liner with a leachate collection and removal system as a base layer to the TMF. Maintenance of the TMF following closure will require periodic inspections of the dry stack and removal of leachate if it is found to be present. Once the water treatment systems have been removed, it is unclear how Wolfden will dispose of TMF leachate.