

Memo

To: Severine von Tscharnier Fleming
severine@greenhorns.org

From: Allan Blaske, GEI

c: Lissa Robinson, GEI

Date: December 22, 2021

Re: Review of Proposed Mining Project
Pembroke, Maine
GEI Project No. 2104711

Introduction

GEI Consultants, Inc. (GEI) is pleased to provide Greenhorns with engineering services for a review of readily available materials regarding hydrogeology, hydrology, and water quality for a proposed mining exploration project by Wolfden Resources in Pembroke, Washington County, Maine, known as the Big Hill or Big Silver project. We understand that your organization, Greenhorns, is interested in undertaking an independent review of potential hydrogeologic and water quality issues related to the proposed project.

Our work, summarized in this memo, includes information regarding the development of mining projects, information regarding the Big Hill geology, explanatory information in response to Wolfden's recent news release, a discussion of possible mine development scenarios, a discussion of potential environmental concerns with the development of a mine, and applicability of the Maine mining regulations. Finally, a listing of references and web sites accessed is provided which were the source of information for this memo.

Mining Project Development

Development of a mineral prospect into an actual mine is a long, complex process. The process entails many aspects and generally takes many years to complete. *It should be noted that only about 1 in 500 to 1 in 5,000 prospects actually become mines.* Many factors contribute to this low development rate. An ore deposit or mineral deposit is a well-defined mass of naturally occurring material from which minerals of economic value which can be feasibly extracted for a reasonable profit. Note that the ore deposit is only feasible if it can be economically extracted and processed. Fluctuations in ore value with time, and the lengthy development process contribute to the uncertainty surrounding mining project development and resulting low development rate.

Development of a typical project includes the many steps, several of which will be summarized briefly below. This is by no means an exhaustive list, because each project and location is unique, and has a unique set of circumstances related to it. These steps are not a progressive process – items from several steps may be joined together as the project moves forward. At any time during this process the project may be stopped, due to lack of funding, poor exploration results, low metal prices, environmental concerns, or any number of other factors which would negatively impact the economic feasibility of the project.

- Data Gathering/Investors – This stage is usually comprised of gathering available historic data, including reports from state agencies, regional and local geologic reports, reports from previous mining companies, identifying the location of potential historic drill core for inspection, gathering information regarding permitting requirements, visiting the project, and developing a land position (property ownership, mineral rights, access, etc.). Most importantly in this phase is developing relationships with investors, to acquire funds to begin exploration and development work.
- Initial Exploration – This stage is usually comprised of on-site geologic mapping, surface sample collection, synthesis of available historic information, obtaining and interpretation of geophysical information, and limited core drilling to obtain actual samples from the underground of the prospect. These samples are submitted for laboratory analysis to determine the chemistry of the ore and the grade (percentage) of the target metals within the rocks.
- Advanced exploration – Advanced exploration consists of the collection of extensive data to define the extent and size of ore body. This usually consists of extensive core drilling to define the size and shape of the ore body (both horizontally and vertically) and grade of the ore. Additional geophysical studies may also be performed to supplement and define targets for core drilling. This information is developed into an evolving model of the deposit. Additional data may be collected to determine information related to the potential processing of the ore which may be necessary, acid generation potential of the ore, disposal of waste (tailings and waste rock), and other aspects of the deposit.
- Environmental Baseline Studies – Environmental studies are generally initiated to study the baseline conditions at the proposed mine site. These studies tend to be extensive and consist of the identification and description of site features, the identification of proposed activities that may impact the identified features, analysis of potential impacts, identification of sensitive receptors, plans to reduce or mitigate potential impacts, and an analysis of cumulative impacts. These studies generally include characterization of the site topography, soils, geology, groundwater (including aquifer characteristics, seasonal variations, etc.), surface water (levels, discharge rates, seasonal variations, etc.), water balance, groundwater and surface water quality, known sites of environmental contamination, private and public water supply wells, irrigation and disposal wells, wellhead protection areas, floodplains, shorelines, wetlands, natural and wild and scenic rivers, dwellings and other structures, existing and proposed infrastructure, areas maintained for public recreation, natural areas, state and federal wilderness areas, wild areas, land uses and access, aquatic and terrestrial flora and fauna, fish and wildlife habitats, threatened and endangered, special concern, non-native or invasive species, ecological systems, cultural, historical, or archaeological resources, air quality, meteorology and seasonal and long-term variations, visual, noise, and light resources, and seismicity.

The baseline studies identify conditions as they exist before a mine is developed. The data from the site is also used to understand how the mining operation may alter these conditions.

- Feasibility Studies and Design – These aspects of the project generally progress together, as they are closely related. The feasibility aspect uses the available information to determine if the opening of a mine is possible. This is based on the size and grade of the ore body, proposed mining and extraction techniques, environmental aspects of the site, geotechnical characteristics and rock stability, tailings and waste rock disposal areas, logistics and infrastructure, and end-of-mine

reclamation and long-term monitoring. A significant part of the feasibility analysis is the cost – including the cost of mining and operations, and the market price of the metals extracted from the ground.

The design aspect integrates available data to provide a detailed description of the mine itself (underground, open pit, mining methods), the milling and extraction process, disposal of tailings and waste rock, site design (including civil engineering, site development, geotechnical, soil erosion and sedimentation control, stormwater management, etc.), infrastructure (roads, electricity, water, etc.), wastewater treatment, monitoring and environmental protection plan, and final reclamation and long-term monitoring. The design is a detailed, all-inclusive plan for the development and operation of the mine.

- **Permitting** – State, local, and federal permits are generally required for various aspects of the development process. These permits use information gathered from the on-site environmental studies and mine design as background information for the preparation and submittal of permit applications to the various regulating agencies.

After review of the available information regarding Wolfden Resources and the Big Hill project, it is the opinion of GEI that the current development stage of the project is in the Data Gathering/Investors stage, and the beginning of the Initial Exploration stage of the project. Wolfden has identified mineralization within the rocks but have not yet outlined an ore body or mineral deposit. Only after an ore deposit has been identified can the development of a mining operation occur.

Big Hill Geology

Bedrock Geology

The bedrock geology of the Big Hill area consists of the Silurian-aged Leighton Formation, which consists of volcanic and sedimentary rocks. Within these rocks are areas of mineralization, formed in association with sea floor hydrothermal vents. Deposits of these types are known as volcanogenic massive sulfide (VMS) deposits.

Mineralization Characteristics

Volcanogenic massive sulfide ore deposits are a type of metal sulfide ore deposit, mainly rich in copper and zinc, which are created by hydrothermal vents (commonly known as black smokers) associated with volcanic activity on the sea floor. These deposits generally contain bedded accumulations of iron, lead, zinc, copper, silver, and sometimes gold precipitated from metal-rich fluids. The word “hydrothermal” refers to hot water within these systems which circulates through the rock and out the vents to the sea floor. The metals in these deposits are combined with sulfur to form sulfide minerals, including pyrite and pyrrhotite (iron sulfide), sphalerite (zinc sulfide), galena (lead sulfide), chalcopyrite (copper-iron sulfide), and tetrahedrite (copper-silver sulfide). Most VMS deposits show metal zonation, due to the changing physical and chemical environments of the circulating hydrothermal fluid.

The VMS deposits are formed in volcanic or volcanic-derived (volcano-sedimentary) rocks. The VMS deposits are closely related to sedimentary exhalative deposits (SEDEX), where the SEDEX deposits are layered deposits of sulfide minerals contained within fine-grained sedimentary rocks, located further away from the hydrothermal vents than the VMS ore.

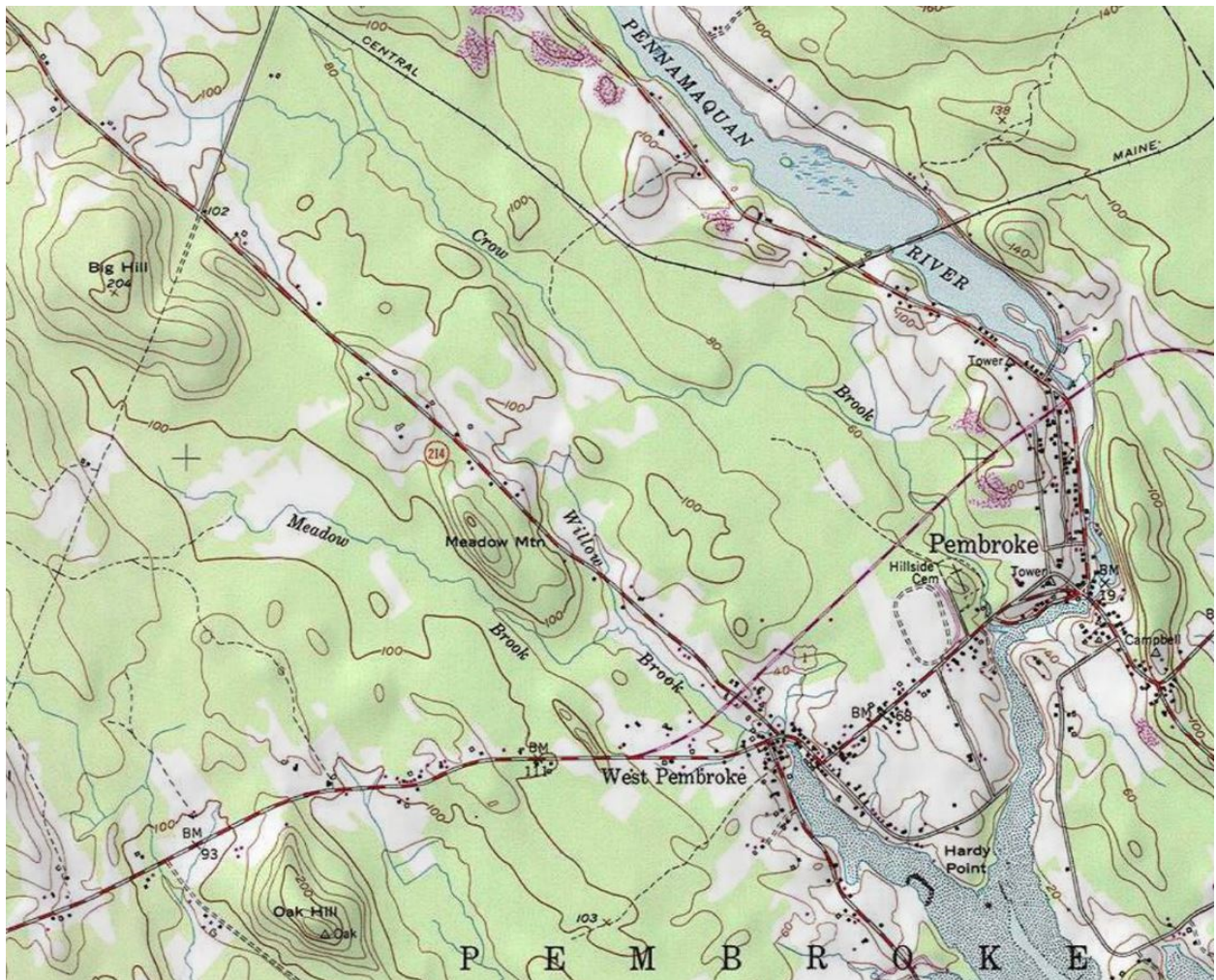
Because of the hydrothermal fluids circulating through the rock, the host rocks are generally altered and contain minerals within fractures and porous zones within the rock. This circulating hot water also alters the original host rock to variety of secondary minerals.

Understanding the characteristics of the ore deposit model for VMS and SEDEX deposits helps in the exploration for these deposits.

Historic information indicates that the Big Hill deposit contains as much as 27 million tons of ore, with grades of 1% zinc, 0.4% lead, and 1 ounce per ton of silver. This calculation is an estimate based on analysis of historic data and does not represent a true calculation of the size of a mineable ore body. It merely represents a rough estimate of the deposit size.

Topography and Drainage

The map below illustrates the topography of the Big Hill and Pembroke areas. The Big Hill deposit is centered on Big Hill and the surrounding area, located in the upper left corner of the map. Meadow Brook and Crow Brook drain from the Big Hill area to the southeast, toward West Pembroke and Pembroke, respectively.



Unconsolidated (Glacial) Geology

The soil material over the bedrock (overburden) is generally thin (usually less than 25 feet) in the Pembroke area. Unconsolidated soils are generally glacial till (heterogeneous mixture of sand, silt, clay, and stones) and glaciomarine deposits (silt, clay, and gravel). The till was deposited directly by glacial ice and forms thin deposits on bedrock, and the glaciomarine deposits were formed by glacial sediments deposited on the ocean floor. These deposits are thin in the Pembroke area, with bedrock close to the ground surface.

Area Water Use

An aquifer is a geologic unit which can yield useable amounts of groundwater to a well. Residents in the Pembroke area obtain water from individual wells. Because the unconsolidated soil over bedrock is only present in thin layers, aquifers within soil in the Pembroke area are rare. Most water is obtained from wells drilled within the bedrock. Groundwater flow into these wells is controlled by the distribution and characteristics of brittle fractures, foliations, and joints in bedrock. Bedrock wells generally yield only small quantities of water. The only significant sand and gravel aquifers are located on the west side of Pennamaquan River and east of Big Hill.

Significant fractures in the bedrock can often be recognized through review of high-resolution aerial photographs, as the fractures are noticeable as lineaments on the ground surface. These lineaments can be used to determine locations where significant bedrock fractures can be located, and therefore may be good locations for well installation. Published maps of lineaments indicate one set of lineaments in a northwest-to-southeast direction, and a lesser set in a southwest-to-northeast direction in the Pembroke area.

The map below shows the location of mapped water wells in the Pembroke areas, as obtained from the Maine Water Well Database. Nearly all the wells illustrated on this map are bedrock wells. The Big Hill is located in the upper left corner of the map. It is possible for additional wells to exist in the region that have not been included in the well database especially wells installed prior to 1987. The Water Well Information Law, passed in 1987, required the Maine Geological Survey to collect information on new water wells in Maine.



Wolfden News Regarding Big Silver

A News Release by Wolfden on November 1, 2021, provided an update regarding the work completed at the Big Silver Project. Excerpts from this news release are outlined below in *italic font*, followed by an interpretation by GEI of the reported data.

- *Wolfden is earning up to a 100% interest in a property package in Washington County of south-east Maine close to the New Brunswick border.*

This appears to be related to the mineral and property rights of the land where the project is located. Wolfden is likely in an agreement with the surface and mineral rights owners, where they earn interest by performing certain activities related to the development of the property. At this time we don't know the details of the property ownership (both surface and mineral rights).

- *Historic drill intercepts include 133.5 g/t Ag, 1.86% Zn, 0.22% Cu and 0.59% Pb over 40.5 metres (TW ~32.0 metres). All historic drill holes (+100 holes to an average depth of 125 metres) were anomalous in silver and most were not assayed for gold. One hole contained 8.0 metres at 13.5 g/t gold (TW unknown).*

This is a quick summary of historic drill core results. The information does not indicate which boreholes this data is from, nor from what year this data was obtained. This is likely from previous reporting, and not from re-analysis of historic drill core. The information may also be reporting the highest intercepts found during the historic drilling and sampling. It is likely this information was prepared to attract investors by showing the presence of silver, zinc, copper, lead, and potentially gold in the rocks beneath the property.

- *Eight recent confirmatory holes (1,708 metres) have been completed to a maximum depth 458 metres down-hole. All but one of the holes has intersected wide intervals of mineralization containing trace to 15% combined sphalerite (zinc mineralization), galena (lead mineralization), tetrahedrite (silver and copper mineralization), chalcopyrite (copper mineralization) and pyrite. The mineralization is hosted within fracture zones and as disseminations in intermediate composition intrusions and volcanics, sedimentary rocks and debris flows, local breccias (see core photograph) with stronger zones of mineralization in the more porous host rocks. Alteration manifests as bleaching, sericitization and silicification. It is expected that those rocks exhibiting pervasive silicification with tetrahedrite and those enriched in galena, have the potential for silver enrichment as well. Assays are pending.*

This is a summary of the recent drill holes completed by Wolfden at the property. In the 8 drill holes completed, zinc, lead, silver, copper mineralization was observed. The mineralization was observed to be located within fractures and distributed as fine grains throughout the rock. The host rocks included volcanic and sedimentary rocks (typical of volcanogenic massive sulfide [VMS] deposits). Breccias (zones of broken rock) were also observed, and more intense mineralization was observed in areas where the rock was more porous (fractures, breccias, etc.), where hydrothermal fluids could more easily travel. Because of these hydrothermal fluids, the rock has been altered from its original composition. Samples were submitted for laboratory analysis to determine the concentration of metals within the rock, but Wolfden did not appear to have received the results. It is likely that Wolfden will provide another news release when the results are received. Again, this information appears to be intended to show that favorable mineralization is present at the project and aimed at attracting investors.

- *Exploration data, including drilling, mapping, and soil sample results, indicate that the Big Silver mineralization event was quite extensive (open 2 km by 2 km area) with base and precious metals being deposited within primary, and structurally enhanced, permeable zones in both mafic volcanics and sediments. The core of the system is copper-rich with late-stage vein-controlled gold enrichment that is flanked by a zinc-lead-silver zone, flanked again by a silver-zinc-lead mineralization. Silicified breccias and coarse sedimentary rocks are important hosts for the mineralized zones.*

Wolfden appears to have conducted drilling, surface mapping, and soil sampling across the area of the project. The data indicated that similar rock types and similar mineralization is present over a large area. The present working model of the exploration program indicated that mineralization was deposited within veins and fracture zones within the volcanic and sedimentary rocks. The model they are targeting appears to be one with a copper-rich core, surrounded by zones of different types of mineralization. Wolfden believed that breccias and coarse sedimentary rocks are the best places for mineralization to have formed. The information indicated that these zones would have the highest permeability, and therefore were easiest for the hydrothermal fluids to migrate through and deposit the minerals. This information indicated the overall characteristics of the geology of the area, and that the favorable rocks are found over a large area. This “2 km by 2 km” area is not a proposed mining area. Rather, it indicated that favorable geology is present in the area. Further exploration would be needed to define specific targets and ore bodies within this package of favorable rocks. This is again appeared to be intended to attract investors.

- *Strong silver (up to 20.4 g/t) and zinc + lead + copper values (to 6,188 ppm) have been received from a recent 2021 soil sampling survey in the area (see Figure 3.).*

As part of the surface soil sampling, Wolfden appears to have observed silver, zinc, lead, and copper at anomalous concentrations within the soil. Soil samples can often be used as an indication of subsurface rock and mineralization. Soil sampling is a relatively inexpensive method to cover a large area and help to determine areas where further exploration resources should be focused.

- *An induced polarization (IP) geophysical survey, designed to see to a maximum depth of 400 metres, and to indicate the potential for the style of mineralization described above, will be completed before the next drill program.*

Wolfden also completed a geophysical survey using induced polarization (IP). This geophysical technique uses low levels of electricity to determine the characteristics of the subsurface. Metallic minerals are generally more conductive than surrounding rocks, so the results of the survey can be used to locate subsurface mineralization.

This news release appeared to be intended to portray positive information regarding the project, with the intent to attract investors and to show that Wolfden is advancing the project forward. The data released does not indicate that an ore body has been found or defined, only that favorable mineralization has been observed at the project and that additional work will continue.

The exploration plans moving forward are not indicated in this press release and are not known at this time.

This news release, as well as other information and videos available on the internet, appear to be intended by Wolfden to raise money from investors.

Possible Mine Development Scenarios

As outlined above, the development of a mine will depend on the delineation of an economically viable ore body at the site. At this time, there appears to be no defined ore deposit, and therefore there are many unknowns as to what Wolfden plans to do at the site. Still unknown is the mining method, tonnage of the deposit, ore processing methods, waste rock and tailings disposal methods, footprint of mine and facility, time frame of mine, etc. Details of the mine development would likely be determined after exploration, and in the feasibility study and design phases of the project.

However, based on the general deposit type described in the readily available information and based on general economic conditions, the most likely mine would include an open pit mine, on-site processing of the ore, and on-site tailings disposal. Underground mining would not likely be economically feasible.

An open pit mine would be a large excavation in the ground to remove the desirable ore minerals. Because some material of non-economic grade exists within the ground, this waste rock material would be removed and disposed of to reach the ore. This waste rock is generally disposed of in piles at a given mine site. These waste rock piles can become significant in size, based on the amount of waste rock which would need to be removed to reach the ore within the subsurface.

Once ore is removed from the ground, it is typically processed to remove the desirable mineral components. The removal of these minerals generally requires grinding the rock to fine powder and

processing the material using a variety of methods (depending on the specific minerals). The waste from this processing operation is called tailings, which then are disposed. These tailings are generally deposited in a tailings basin, which is a large pond with surrounding berms and dams. These basins are designed to contain the volume of waste generated from the ore processing and the site conditions.

After processing and concentrating the desirable mineral components, this “concentrate” is further processed to extract the final metallic product for sale. This is usually done by a combination of processes, determined by the specific minerals and final product to be produced. It is unknown if this final processing would be performed on site or if the concentrate would be shipped off-site for processing by a third-party.

Water from the entire process (mine water, ore processing, tailings basin, etc.) is generally treated through a wastewater treatment plant prior to discharge.

Potential Environmental Concerns

Construction and operation of a mine can lead to environmental impacts. The scope of the impacts can be mitigated through a variety of measures, but all remedies are costly.

Concerns include, in no particular order of impairment:

- The excavation of a large open pit to extract the ore. Once excavated, the pit would likely remain at the mine site forever.
- Waste rock from the mine. Overburden and non-ore rock is removed, and generally disposed in large piles around the mine site. Once excavated and disposed, this waste rock would likely remain at the mine site forever.
- Acid rock drainage. The mineralization of the deposit is reported to contain pyrite and pyrrhotite (both iron sulfides). These minerals, when exposed to oxygen and water, begin to break down into iron hydroxides and sulfuric acid. These minerals are the main contributor to acid rock drainage (a.k.a. acid mine drainage) at abandoned and historic mine sites. Water which drains through piles of waste rock or tailings containing these minerals can have very low pH values (often less than 2). Because of this extreme acid chemistry, the drainage can contain a variety of heavy metals and other contaminants which are released from the rock. If not properly managed, this drainage can enter streams and wetlands with harmful results.
- Tailings from the processing of the ore would likely be placed into an on-site tailings basin. This basin would contain the fine tailings forever. These basins are generally surrounded by berms and dams, which would need to be maintained in perpetuity.
- Wastewater from the mine would be treated prior to discharge. Treatment of the water from the mine, waste rock, and tailings system would likely need to be treated forever after mine closure.
- The mine systems would need to be designed so that no untreated water from the operation would be allowed to enter the subsurface. Since the subsurface groundwater is used for drinking water for the area residents, groundwater would need to be protected against potential contamination. In addition, much of the water in the area is obtained from wells completed in the fractured bedrock. Fractured bedrock aquifers are difficult to characterize, easy to contaminate, and difficult to remediate once contaminated.

- Wetlands in the area of the mine site itself would likely be impacted or removed entirely to construct the mine. Mitigation of these wetland areas would be possible, but difficult. Impacts to groundwater quality and quantity can also have impacts to wetland areas downstream of the mine.
- The mine site at Big Hill is located upstream (via Meadow Brook and Crow Brook) of Pembroke and West Pembroke, as well as Cobscook Bay. These streams would need to be protected against release of any mine waste so the streams, wetlands, and tidal communities in Cobscook Bay would not be impacted.
- Mine operations include increased traffic, truck traffic, noise, blasting, lighting, security fencing, and other impacts which can negatively impact the quality of life for surrounding residents.
- Designs of mine systems are required to withstand current conditions of temperature, rain fall, snowfall, and other weather conditions, as well as to withstand future weather conditions for the next 100 years or more. The unknowns of climate change would require a design to protect against extreme rain events, extreme temperature conditions, sea level rise, and a variety of other factors.

Maine Mining Regulations

The laws regulating mining activities in Maine are codified in Title 38: Waters and Navigation, Chapter 3: Protection and Improvement of Waters, Subchapter 1: Environmental Protection Board, Article 9: Maine Metallic Mineral Mining Act (38 M.R.S. Sec 490-LL *et. seq.*). These laws were enacted in 2011 and updated and amended in 2017. Pursuant to these laws, rules have been developed by the Maine Department of Environmental Protection as standards for exploration, advanced exploration, construction, operation, closure, post-closure monitoring, reclamation, and remediation (Chapter 200: Metallic Mineral Exploration, Advanced Exploration, and Mining). These laws and rules provide the regulatory framework for metallic mining activities.

Under Subchapter 1 of Chapter 200, Section 1, subsection B, the following activities are prohibited for mining project in Maine:

- Heap, percolation, or in-situ leaching
- Mining for thorium or uranium ore
- Block caving
- Open-pit mining,
- Wet mine waste units and tailings impoundments (except waste rock if placed into a mine shaft and neutralized or otherwise treated to prevent contamination to groundwater or surface water)

The comprehensive set of rules are set up to ensure environmental protection for mining projects. The rules require a permit for mining activities, which includes a comprehensive study of the project area and proposed project, as well as coordination with the agency as well as public participation.

It is unknown if Wolfden has begun the baseline environmental studies necessary for a mine permit application. Since Wolfden is only in the initial phases of exploration, it is unlikely that they have started the intensive environmental data collection process. Also, the laws and rules are clear as to

the prohibited activities for mining operations. It is unknown if Wolfden intends to lobby for relaxation or reversal of these specific regulations.

Summary

Based on available information, Wolfden Resources appears to be in the beginning stages of exploration at the Big Hill project site. At this time, it appears that preliminary studies have begun, and no ore deposits have been delineated. Wolfden appears to be gathering information with the intent of attracting investors for continued exploration activities.

The process of developing a mine from an exploration target is a multi-year project. At the end of the process, the ore deposit needs to be economically feasible for mining. Many factors and conditions can prevent a project from becoming an actual mine.

If, after reviewing the information in this memo, you have questions or wish to discuss any information, please let us know.

References Consulted

- Borns, H. W., 1975, Reconnaissance Surficial Geology of the Eastport Quadrangle, Maine, Open-File Report 75-2, Maine Geological Survey, Department of Conservation
- Caswell, Eichler, and Hill, Inc., 1986, Lineaments, High-Yield Bedrock Wells, and Potential Bedrock Recharge Areas in the Maine Portion of the Eastport 2 Degree Sheet, Open-File Report No. 86.70, Maine Geological Survey, Department of Conservation
- Fyffe, L. R., 1990, Field Guide to Massive Sulfide Deposits in Northern New Brunswick, Minerals and Energy Division, Department of Natural Resources and Energy
- Gates, O., 1977, Geologic Map and Cross Sections of the Eastport 15' Quadrangle, Washington County, Maine, Maine Geological Survey, Department of Conservation
- Locke, D. B., 2000, Surficial Materials, Pembroke Quadrangle, Maine, Open-File No. 00-111, Maine Geological Survey, Department of Conservation
- Maine Geological Survey, Department of Agriculture, Conservation, and Forestry, Metallic Mineral Deposits of Maine (no date)
- Nell, C. D. and Locke, D. B., 2000, Significant Sand and Gravel Aquifers, Pembroke Quadrangle, Maine, Open-File No. 00-118, Geological Survey of Maine, Department of Conservation
- Osberg, P. H., Hussey, A. M., Boone, G. M., 1985, Bedrock Geologic Map of Maine, Maine Geological Survey, Department of Conservation
- Thompson, W. B. and Lowell, T. V., 1987, Surficial Geology of the Eastport 1 x 2 Degree Quadrangle, Open-File No. 87-10, Maine Geological Survey, Department of Conservation
- Thompson, W. B. and Borns, H. W., 1985, Surficial Geologic Map of Maine, Maine Geological Survey, Department of Conservation
- Tolman, S. S., and Marvinney, R. G., 2010, Overburden Thickness, Machias 30x60-minute Quadrangle and a portion of the Eastport 30x60-minute Quadrangle, Open-File Report 10-56, Maine Geological Survey, Department of Conservation

Weddle, T. K., Tolman, A. L., Williams, J. S., Adamik, J. T., Neil, C. D., Steiger, J. I., 1988, Hydrogeology and Water Quality of Significant Sand and Gravel Aquifers in Parts of Hancock, Penobscot, and Washington Counties, Maine, Significant Sand and Gravel Aquifer Maps 24, 25, 26, 27, 45, Open-File Report 88-7a, Maine Geological Survey, Department of Conservation

Young, R. S., Prospect Evaluations, Washington County, Maine, 1963, Special Economic Studies Series No. 3, Maine Geological Survey, Department of Conservation

Websites Accessed

“WOLFDEN RESOURCES”

<https://www.wolfdenresources.com/>

<https://www.wolfdenresources.com/wp-content/uploads/2021/11/WLFNov1-2021.pdf>

<https://bangordailynews.com/2021/11/09/news/aroostook/wolfden-ceo-calls-mining-rejection-a-speed-bump-and-vows-project-will-continue-joam40zk0w/>

“WOLFDEN PEMBROKE”

<https://pembrokecleanwater.com/learnmore/wildlife-zpswb>

<https://www.resistmainemining.org/mining-in-maine/big-hill-pembroke-maine/>

<https://bangordailynews.com/2021/08/13/news/down-east/firm-behind-pickett-mountain-mine-proposal-plans-test-drilling-at-down-east-site/>

<https://www.machiasnews.com/mining-company-begin-exploratory-drilling-pembroke>

<https://www.nrcm.org/news/wolfden-ceo-outrageous-claims-investor-videos-mining-maine/>

<https://www.nrcm.org/blog/passamaquoddy-tribe-at-sipayik-opposes-mining-activities-cobscook-bay/>

<https://www.themainemonitor.org/environmental-experts-push-back-on-canadian-companys-plans-to-mine-for-metal-in-maine/>

<https://greenhorns.org/blog/the-dangerous-downsides-of-large-scale-polymetallic-sulfide-mining/>

<https://www.ellsworthamerican.com/opinions/commentary/protect-our-waters/>

<http://quoddytides.com/mining-proposal-for-pembroke-stirs-concerns.html>

“WOLFDEN BIG HILL”

<https://www.mindat.org/loc-46375.html>

<https://thediggings.com/mines/usgs10306870>

<https://apnews.com/press-release/accesswire/business-government-business-and-finance-products-and-services-government-regulations-precious-metal-markets-33764b47a8b06392ece85c18ab30d467>

“WOLFDEN BIG SILVER”

<https://www.juniorminingnetwork.com/junior-miner-news/press-releases/551-tsx-venture/wlf/88730-wolfden-adds-big-silver-project-in-maine.html>

<https://www.cruxinvestor.com/articles/wolfden-resources-wlf-big-silver-breccia-adds-to-high-grade-zinc-story>

<https://www.mining-journal.com/m-amp-a/news/1400572/wolfden-adds-big-silver-project>

<https://www.nrcm.org/news/wolfden-ceo-outrageous-claims-investor-videos-mining-maine/>

<https://pembrokecleanwater.com/learnmore/aboutbigsilver>

<https://www.morningstar.com/news/accesswire/670498msn/wolfden-provides-exploration-update-on-silver-and-nickel-projects>

<https://www.northernontariobusiness.com/industry-news/mining/thunder-bay-explorer-sees-silver-possibilities-in-maine-3150104>

<https://www.accesswire.com/619104/Wolfden-Adds-Big-Silver-Project-in-Maine>

Other

https://mrdata.usgs.gov/mrds/show-mrds.php?dep_id=10306872

https://www.miningnorth.com/_rsc/site-content/library/education/Mineral_Exploration_&_Development_Roderick_Eggert_Eng.pdf

https://www.fs.fed.us/geology/anatomy_mine.pdf

Maine Regulations

<https://www.maine.gov/dacf/mgs/explore/mining/index.shtml>

<https://www.maine.gov/dep/land/mining/>

<https://www.maine.gov/dacf/mgs/pubs/index.shtml>

<https://www.maine.gov/dacf/mgs/pubs/digital/well.htm>

AB/LCR:cah

\\bos1v-fs02\Data_Storage\Working\GREENHORNS\2104711 Wolfden Mining Pembroke ME\Summary Memo\FINAL_Big Hill Deposit Summary Memo.docx