GEORGIA RIVER NETWORK

January 24, 2023

EPD Land Protection Branch
4244 International Parkway
Atlanta Tradeport, Suite 104
Atlanta, Georgia 30354

RE: Mining Land Use Plan Permit Application Submitted by Twin Pines Minerals, LLC for Saunders Demonstration Mine in Charlton County

To Whom It May Concern,

Georgia River Network is pleased to provide this letter of comment to the Georgia Environmental Protection Division (EPD) regarding Twin Pines Minerals, LLC's Mining Land Use Plan for its 773-acre Saunders Demonstration Mine. Georgia River Network is a statewide, non-profit conservation organization with a current membership of more than 450. Georgia River Network serves as the state's NGO partner running the Georgia Water Trails Network. As the voice of Georgia's rivers, we work with the state to provide access to economically vital and clean flowing rivers. Georgia River Network serves on the leadership committees and as the fiscal sponsor for the following groups: Georgia Outdoor Recreation Coalition, Okefenokee Protection Alliance, and Georgia Water Coalition.

Georgia River Network strongly opposes this project as stated in previous correspondence with EPD and the U.S. Army Corps of Engineers. As stewards of Georgia rivers and associated wetlands, we believe the proposed mining activity will alter the natural hydrology and other ecological processes associated with the area, putting at risk the St. Marys River and Okefenokee Swamp as well as the streams and wetlands along Trail Ridge that connect to these water bodies. The Saunders Demonstration Mine proposed by Twin Pines Minerals, LLC, will destroy more than 475 acres of wetlands and 412 linear feet of streams on Trail Ridge, and represents an existential threat to the Okefenokee Swamp. If the 773-acre mine is permitted, Twin Pines will likely seek to conduct further mining on more than 6,000 adjacent acres that the company currently owns. Additionally, if mining is permitted, it opens the door for the adjacent 35,088 Toledo Manufacturing tract to be converted to mining, given that owner, Joe Hopkins has stated that he would allow mining if permissible by EPD.

If permitted, the mine will lower water levels in the Okefenokee Swamp, setting off a series of problems that will impact wildlife habitat and human use and enjoyment of the Okefenokee National Wildlife Refuge. The lowered water levels will also affect climate change by exposing and drying the naturally water-logged carbon-rich peat for which the Okefenokee Swamp is known. Mining activity on Trail Ridge, now a largely undeveloped and wild stretch of land bordering the east side of the Okefenokee National Wildlife Refuge, will disrupt a wildlife corridor stretching from Central Florida to the Altamaha River and Fort Stewart Military

Reservation, a 285,000-acre wildlife haven. Finally, the necessity of this mine at this location must be called into question. The minerals to be extracted are common minerals and can be found in abundance elsewhere. The Okefenokee Swamp, a natural feature of worldwide significance, should not be risked for minerals that can be obtained more safely elsewhere.

Value of the Okefenokee Swamp & Trail Ridge

The Okefenokee Swamp is one of the world's largest naturally intact ecologically driven freshwater systems and a rare precipitation-fed headwater wetland, covering approximately 438,000 acres. Trail Ridge is a former sand beachfront that forms a "geomorphological dam on the east side of the swamp, maintaining the hydrology of the swamp"[1] Portions of Trail Ridge are targeted for land preservation as part of the state's 2015 Wildlife Action Plan because of its importance as a wildlife corridor.

The 407,000-acre Okefenokee National Wildlife Refuge protects most of the Okefenokee Swamp and portions of Trail Ridge, supporting the federally designated Okefenokee National Wilderness Area and nationally designated water trail—the Okefenokee Wilderness Canoe Trail. The Refuge is a mecca for wildlife watching and fishing, and home to endangered and threatened species, including the wood stork, red-cockaded woodpecker, flatwoods salamander and eastern indigo snake. The shallow-water swamp, with an average water depth of 1 to 3 feet, contains peat deposits up to 15 feet deep and is the headwater source for the free-flowing St. Marys and Suwannee Rivers, two of the most pristine rivers in the southeastern United States.

Known as one of Georgia's "seven natural wonders," the Okefenokee Swamp is the largest blackwater swamp in the U.S. and has been designated a Wetland of International Importance. It stands out not only within the U.S. as the last remaining large, unfragmented wetland on the North American Coastal Plain but globally in the highly populated and manipulated subtropical zone. For these reasons, the Okefenokee National Wildlife Refuge is on the United States' Tentative List for consideration as a UNESCO World Heritage Site. If selected, it would join famous national parks such Yellowstone, Grand Canyon, Great Smoky Mountains, and Yosemite among our country's World Heritage Sites.

The Okefenokee's wildness and beauty attract some 400,000 visitors to the National Wildlife Refuge annually, accessing the Okefenokee Swamp from Stephen Foster State Park near Fargo, Okefenokee Swamp Park in Waycross, and the Okefenokee National Wildlife Refuge Headquarters entrance in Folkston.

During the past five years, Refuge visits generated more than $50 million annually in local spending. The Okefenokee Swamp annually supports some 826 jobs, $17.5 million in employment income and $4.5 million in local, state and federal tax revenue, according to a draft report published by the U.S. Fish and Wildlife Service (USFWS) in 2022.[2] One of the most sought-after experiences within the Okefenokee National Wildlife Refuge is paddling the swamp's 120-mile Okefenokee Wilderness Canoe Trail system—one of only 21 such nationally

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[1] *U.S. Fish & Wildlife Service letter to U.S. Army Corps of Engineers, July 22, 2019*

[2] *Draft: The Economic Effects of Okefenokee National Wildlife Refuge and its Partners including Stephen C. Foster State Park, Okefenokee Swamp Park, and Okefenokee Adventures, U.S. Fish and Wildlife Service, 2022.*

designated trails--and overnighting at the swamp's land-based and floating dock campsites. Wilderness visitors seek out these areas where human influence is minimal. The natural soundscape and dark night sky are important components of the wilderness connection which are threatened by mining operation lights and noise. Additionally, the waters of the Okefenokee Swamp feed St. Marys and Suwannee rivers, increasing its economic reach from the Atlantic Ocean to the Gulf of Mexico. A map of the Okefenokee Wilderness Canoe Trail system can be found in appendix A.

In addition to these direct economic impacts in Charlton, Ware and Clinch counties, the Okefenokee Swamp performs vital ecosystem services, including water storage, water quality protection, prevention of floods, and mitigation of global climate change impacts through carbon sequestration. A study conducted by the University of Georgia in collaboration with U.S. Fish & Wildlife Service (USFWS) and published in 2012 estimated the value of the Okefenokee Swamp's ecosystem services at nearly $4 billion.[3]

Impacts on Okefenokee Swamp Water Levels

In the Saunders Mine surface mining permit application, the applicant makes a claim that "post-mining conditions will have no significant impact on water levels in and near the Okefenokee National Wildlife Refuge" and that the "existing Trail Ridge hydrologic divide separating the Okefenokee Swamp to the west from the St. Marys River to the east will be maintained."

These statements contradict other studies and analyses conducted by independent hydrological experts who predict dewatering effects on the Okefenokee Swamp. These studies show a link between groundwater levels and surface water levels within the Okefenokee Swamp and indicate that the mining operation will ultimately lower surface water levels in the swamp through the pumping of groundwater and altering the hydrology of Trail Ridge. This will create a series of negative impacts on wildlife and humans.

The applicant seeks groundwater withdrawal permits to pump as much as 1.44 million gallons per day (MGD) from the Floridan aquifer. In addition, during mining operations, the applicant expects to pump 1.1 MGD of groundwater directly from the mine pits as this groundwater seeps into the 50-foot deep pits. With the mining site located at an elevation of 155-175 feet above mean sea level (amsl), these pits will often descend below the average water level of 120 amsl at the eastern edge of the swamp. Withdrawals from the Floridan aquifer and the mining pits themselves represent significant drawdowns of groundwater levels that will result in lower surface water levels in the swamp. The applicant states in its groundwater withdrawal permit application that the maximum drawdown of the aquifer at the edge of the Okefenokee National Wildlife Refuge is expected to be 13.8 feet. Even one year after pumping from the Floridan aquifer ceases at the Saunders Mine site, the drawdown of the aquifer will still be 1.3 feet at the edge of the Okefenokee National Wildlife Refuge.[4] See appendix B.

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[3] *National Wildlife Refuge Wetland Ecosystem Service Valuation Model, Phase 1 Report: An Assessment of Ecosystem Services Associated with National Wildlife Refuges, Patton, Moore, Bergstrom and Covich,, 2012*

[4] *Application for Industrial Groundwater Withdrawal Permit Attachment B: An Evaluation of Drawdown from Floridan Wells FPW-01 and FPW-02 at the Twin Pines minerals, LLC Mine Site, Page 15, Dec. 9, 2020*

A 1995 study by Dr. Todd Rasmussen, professor of hydrology and water resources at the University of Georgia and graduate student Susannah Kitchens analyzed data on water levels in the Okefenokee Swamp and water levels in the underlying Floridan aquifer. The study concluded that the swamp loses about 1.2 meters per year to the underlying aquifer and that lower levels in the Floridan aquifer lead to an increased drawdown of water levels in the swamp.[5] In short, pumping water from the Floridan aquifer increases the water that moves from the swamp to the aquifer.

A recent analysis of the hydrological effects of the Saunders Mine by Dr. C. Rhett Jackson, John Porter Stevens Distinguished Professor of Water Resources at the University of Georgia Warnell School of Forestry and Natural Resources, showed that water use by the mining operation would increase the frequency of severe drought in the southeast portion of the Swamp closest to the mine threefold. Whereas river gauges historically show no measurable flow on the St. Marys River near the Swamp just three percent of the time, under Twin Pines proposed water management plan, the "zero flow fraction" will increase to nine percent of the time.

Dr. Jackson concludes: "Tripling the frequency of severe drought will significantly affect swamp ecology and fire frequency, and it will similarly increase the portion of time when boating in the swamp is difficult."

Thus, the mine will increase the likelihood that portions of the Okefenokee Wilderness Canoe Trail will be impassable, reducing visitation to the Swamp and impacting the tourism economy that the Swamp supports. Already, during drought conditions, many of the Okefenokee National Wildlife Refuge's boating trails have become impassable. The Saunders Mine would only increase the frequency of drought effects within the Swamp.

Lower water levels will increase the likelihood of fires as well. Though the Swamp is a fire-adapted ecosystem, altering that ecosystem can lead to more frequent and more severe wildfires that threaten the peat-dependent system and potentially the commercial forestlands surrounding the Swamp.

Lower water levels also result in elevated water temperatures and lowered pH levels that lead to a higher rate of methylation—the conversion of mercury into the potent neurotoxin methyl mercury. This toxin then bio-accumulates in the Okefenokee food chain. Mercury contamination is especially problematic in blackwater systems like the Okefenokee, where the conditions are conducive to methylation.[6] Georgia Department of Natural Resources fish consumption advisories already exists for largemouth bass, bowfin, chain pickerel, bluegill and sunfish caught in Okefenokee Swamp due to high levels of mercury contamination. Lower water levels in the Swamp will exacerbate this already existing problem.

The reclamation of the mining pits is also problematic as the applicant cannot assure that its proposed backfill and reclamation plan will appropriately mimic pre-mining hydrological

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[5] *Rasmussen, Kitchens. Hydraulic Evidence for Vertical Flow from Okefenokee Swamp to Underlying Floridan Aquifer in Southeast Georgia, 1995*

[6] *George. Spatial and Temporal Variations of Mercury Levels in Okefenokee Invertebrates: Southeast Georgia, 2008*

conditions on Trail Ridge. The variability of the soil profile makes it extremely difficult to replace the soil such that it serves its original function, slowing the movement of water. It is likely that after mining is completed, this altered, more permeable soil profile of backfilled pits will have higher transmissivity and continue to impact Okefenokee Swamp's water levels by making it more likely for groundwater to flow away from the Swamp rather than toward it.

The applicant proposes adding 10.9 percent bentonite to mine sand tailings for a portion of the backfill in an effort to lower the permeability of the sands. The applicant reports that the "blended sand/bentonite material will be placed at a depth that coincides, as close as possible, with the top three feet of the mapped humate-cemented consolidated black sand." However, the applicant provides no data to support their contention that this engineered backfill will function hydrologically in the same way as the unaltered soil.

Comments on Twin Pines' groundwater modeling by Dr. Susan Braumiller, a USFWS groundwater hydrologist, emphasize the significance of the reduced hydraulic conductivity below 120 ft amsl that corresponds to the water level of the swamp. This barrier may actually play a larger role in retaining water within the Swamp and, thus, if penetrated by mining activity, could lead to greater detrimental effects on the Swamp's hydrology beyond surface flows.[7] A schematic of the impacts we believe will occur due to Twin Pines Mining Land Use Plan can be seen in appendix C.

Climate Change Considerations

Lower water levels in the Okefenokee National Wildlife Refuge wetland system also affect global climate change. That's because the Okefenokee Swamp holds the largest remaining undisturbed peat deposit in the northern hemisphere's subtropical zone--an estimated 401 million cubic meters of carbon-rich peat, the result of the slow decomposition of vegetation in the oxygen-poor swamp water during the past 6,000 years.

Globally, peatlands store nearly 33 percent of the world's soil carbon. In fact, peatlands store more than twice as much carbon as the world's forests.

When peatlands are drained and disturbed, the peat dries and releases carbon dioxide into the atmosphere and becomes more susceptible to wildfires which release even greater amounts of carbon dioxide into the atmosphere.

In a report released in November, the United Nations Environment Programme estimates that despite the relatively small footprint of peatlands (only three percent of the world's land surface) drained and degraded peatlands contribute four percent of annual global human-induced greenhouse gas emissions. The report concluded: "Preserving the carbon that North American peatlands store will be critical to mitigating the negative effects that climate and land use change will have on the planet. So too will be the scaling up of restoration of degraded peatlands."[8]

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[7] *Memo to Donald Imm, Georgia Ecological Serices, Field Supervisor from Sue Braumiller: Technical Comments to date regarding the 2022 Trin Pines Minerals, LLC/TTL Permit Application Based on a Detailed Hydrological Review or the 2022 (and 2019) Permit Applications, TTL 2019 Technical Reports and Other Available Relevant Technical Resources*

[8] *United Nations. Global Peatlands Assessment: The State of the World's Peatlands, 2022*

Currently, in many places around the globe, efforts are underway to restore peatlands at a considerable cost. In the Okefenokee Swamp, we have a naturally functioning and vast peatland, the services for which we do not have to pay. See a map of the Okefenokee's peat deposits and Trail Ridge property owners showing the estimated depth of peat throughout the Swamp in Appendix D.

Lower water levels caused by the Saunders Mine will impact some 26,357 acres in the southeast basin of the Okefenokee National Wildlife Refuge closest to the mine, drying out and subjecting some of the 130 million cubic meters of peat stored in that area to oxidation and potential wildfires.

Using these figures, Dr. Puneet Dwivedi of UGA Warnell School of Forestry and Natural Resources estimates that the Saunders Mine alone could result in the release of more than 31 million metric tons of carbon dioxide—the equivalent of one-third the state of Georgia's total carbon dioxide emissions in 2019 (135 million metric tons).[9]

The Okefenokee Swamp currently plays a critical role in Georgia's—and the globe's—climate resiliency. The state should not permit activity that will likely result in expensive efforts to restore damaged peatlands.

Impacts on Trail Ridge and Regional Wildlife Corridor

Development of the Saunders Mine would destroy wildlife habitat and disrupt a wildlife corridor stretching from the Ocala National Forest in Central Florida to conservation lands along the Altamaha River in Georgia. The corridor is identified in both the Georgia and Florida State Wildlife Action Plans.

The Ocala to Osceola Wildlife Corridor in Florida is a 100-mile long, 1.6-million-acre landscape of private and public lands that connects the Ocala National Forest in Central Florida with the Osceola National Forest in North Florida that abuts the Okefenokee National Wildlife Refuge. The purpose of the corridor is to protect habitat and ensure the survival of 16 endangered and threatened species and provide land for wide-ranging mammals such as the Florida black bear and Florida panther.

Trail Ridge is specifically mentioned in Florida's State Wildlife Action Plan, noting the 125-mile-long, 300-foot-high ridge as "part of the path for the O2O wildlife corridor" The plan's conservation efforts for the region include seeking "opportunities to influence and support management and monitoring of focal species with partners in the Trail Ridge area."

In Georgia, portions of Trail Ridge are identified in the 2015 State Wildlife Action Plan as a "Priority 1" greenway corridor connecting conservation lands in the Okefenokee Swamp with natural areas associated with Fort Stewart and conservation lands along the Altamaha River. Preservation of these lands would allow species to migrate and maintain healthy mixes of DNA among breeding populations. This is especially important among imperiled species. Among the species found along Trail Ridge are the eastern indigo snake and gopher tortoise. Numerous

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[9] *Dr. Puneet Dwivedi, Associate Professor at the UGA Warnell School of Forestry and Natural Resources, Personal Communication, October 3, 2022.*

amphibian species, such as the gopher frog, which is found on the mine site, depend on the close proximity of ephemeral wetlands on forested lands for their survival. Preservation of the entirety of Trail Ridge in Georgia is important because of its proximity to the swamp and conservation lands/wildlife corridors in Florida. Additionally, the wetlands and forests on Trail Ridge are important because many swamp-dwelling species also require an upland habitat to survive.

The Okefenokee Swamp and Trail Ridge provide essential wildlife habitats that will only become more valuable in the face of future climate change effects of sea level rise. Species ranging across Georgia's lower Coastal Plain like the wood stork (*Mycteria americana*) and frosted flatwoods salamander (*Ambystoma cingulatum*), face displacement and extinction due to loss of wildlife habitat as coastal human populations shift inland in response to rising seas. Trail Ridge and the Okefenokee Swamp could serve as the lifeboat habitat for many imperiled species in Georgia.

Impacts on Cultural Resources
In an April 2020 report on the cultural resources of the Saunders Mine Site, consultants for Twin Pines concluded that "no significant cultural resources will be adversely affected by the proposed mining project."

However, previous archeological surveys of the area show that there are five sites within the Saunders Mine permit area. These sites contain pre-contact lithic tools, debitage, and ceramic artifacts as well as post-contact historical material, suggesting that the area was inhabited and/or used by Native Americans. Additional study of the mining site may reveal more archaeological discoveries.

Archeological studies conducted in 1997 and associated with DuPont's proposed Trail Ridge mine, located north on Trail Ridge from the Saunders Demonstration Mine site, uncovered components that date back some 4,000 years from the Late Archaic period as well as sites that are believed to be associated with the seventeenth century Timucuan chiefdom and the Spanish mission of San Lorenzo de Ibihica.

Given the presence of nearby significant archaeological sites, further study of the Saunders Mine site and Twin Pines other properties should be conducted prior to the approval of this permit application. Additionally, applicants should consult with the Muskogee Nation and other tribes.

Cumulative Impacts of Multiple Mining Operations
According to the applicant, the Saunders Demonstration Mine is an effort to demonstrate that heavy mineral sands mining can be accomplished in an environmentally sensitive area with "negligible impact to the site, the surrounding area and the Okefenokee Swamp." The applicant describes the Saunders Demonstration Mine as a "small scale project."

From previous permit applications, we know that Twin Pines Minerals, LLC has mining on a much larger scale in mind. Their original plan submitted to the U.S. Army Corps of Engineers sought a permit to open mines on 12,000 acres of land, with the initial mining phase taking place on 2,414 acres. The company currently owns more than 7,000 acres along Trail Ridge. Additionally, large tracts of forestland on Trail Ridge adjacent to Twins Pines Minerals' holdings

could be converted to mines. Despite the claim in Twin Pine's original permit application that the lands held by Toledo Manufacturing are not currently available for purchase or lease, the landowner, Joe Hopkins, has stated his desire to lease property for mining if EPD approves permits for the Saunders Demonstration Mine. Thus, the Saunders Demonstration Mine is the proverbial camel's nose in the tent that is Trail Ridge.

As noted above, the applicant concedes that this "small scale" project will, indeed, impact groundwater far after active mining stops, lowering aquifer levels at the edge of the Okefenokee National Wildlife Refuge by 1.3 feet a year after pumping from the Floridan aquifer has ceased. These are the impacts of a 582-acre mine. It is relatively safe to assume that if permits are issued for additional mines on Trail Ridge, the impacts to groundwater and surface water in the Swamp will be multiplied, especially as the distance between the Swamp and the mine narrows.

Given that the applicant intends to conduct additional mining on the property it currently controls, EPD should not consider this permit solely as a demonstration project. EPD must request that the applicant provide documentation that proves that large-scale mining on its Trail Ridge holdings would have "negligible impact to the site, the surrounding area, and the Okefenokee Swamp."

Failure to Show Need for the Mine

In its application, Twin Pines LLC suggested that this particular mine is of "strategic significance because it will serve to "decrease the United States dependence on foreign imports of critical minerals and the potential threats related to disruptions in those supply chains." This statement is misleading and inaccurate. The assumption behind that statement is that titanium reserves lie within countries that are now, or may become, hostile to the U.S. A closer look at the global reserves, production, and movement of titanium minerals shows that these assumptions are not supported by the facts.

The U.S. Geological Survey reports that the U.S. imported 90 percent of the titanium mineral concentrates used in this country. There's nothing surprising or particularly alarming about this. According to the U.S. Geological Survey's (USGS) 2022 Mineral Commodity Summaries, the U.S. holds less than one percent of the world's reserves of ilmenite, rutile and zircon, three of the primary titanium-bearing minerals that Twin Pines wishes to excavate at the Saunders Mine. The USGS estimates that the U.S. accounts for about four percent of the total world production of titanium minerals.[10]

Though China is the largest producer and consumer of titanium mineral concentrates, accounting for 37 percent of global production of ilmenite, the U.S. does not import significant amounts of titanium mineral concentrates from China. Nearly 80 percent of its imports of ilmenite and rutile come from South Africa, Australia, Madagascar, and Mozambique. Likewise, the U.S. imports 98 percent of its zircon ores and concentrates from South Africa, Senegal and Australia, according to USGS 2022 commodity summaries.[11]

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[10] *U.S. Geological Survey Mineral Commodity Summaries 2022, Jan. 31, 2022*

[11] *U.S. Geological Survey Mineral Commodity Summaries 2022, Jan. 31, 2022*

As for titanium sponge—the titanium used in producing high-tech equipment for the aerospace and defense industries—100 percent of that kind of titanium is imported. No facilities in the U.S. currently convert titanium-containing heavy mineral sands into the titanium used for those purposes. Some 90 percent of titanium sponge is imported from Japan,[12] and companies that depend on these imports have told the federal government that they are comfortable with continuing this arrangement.

In 2020, Titanium Metals Corporation (TIMET) closed the U.S.'s only titanium sponge production facility and told the federal government that "Establishing a new producer in the U.S. is not necessary. Titanium sponge supply from four existing plants in Japan and Kazakhstan is reliable and cost effective."

The U.S. will always be heavily dependent on imports to meet its titanium demand. No amount of mining on Trail Ridge will change that. And, while it may be true as Twin Pines asserts in its permit application, that economically viable locations for mining heavy mineral sands within the U.S. are becoming scarce, reserves do remain, including substantial reserves in Georgia in areas less likely to impact sensitive natural areas like the Okefenokee Swamp.

Georgia River Network contends that mining at this site unnecessarily puts at risk one of the state's most significant and most visited natural areas. We should not risk the regionally, nationally and globally significant Okefenokee Swamp to extract common minerals that can be obtained more safely elsewhere.

Request to Deny Permit

In addition to the above-mentioned concerns, it is important to note that the leadership of Twin Pines Minerals, LLC, has a poor record of environmental stewardship. Environmental regulators in North Carolina, Georgia, and Florida have all initiated action against companies associated with the leadership of Twin Pines Minerals, LLC during the past six years.

These various companies affiliated with Twin Pines' leadership have illegally discharged toxins into the air, released pollutants to streams that have resulted in fish kills and dumped mining waste into wetlands.[13] Additionally, a Clean Water Act civil suit brought against the Twin Pines-affiliated companies of Georgia Renewable Power LL and Greenfuels Energy LLC in 2019 resulted in a $625,000 settlement for the plaintiffs. The applicant's track record of failing to abide by state and federal environmental regulations suggests that they should not be entrusted with mining in such an environmentally sensitive area where repercussions from the mine could be catastrophic and irretrievable.

Since Twin Pines Minerals, LLC, first proposed mining on its Trail Ridge property, federal agencies have expressed their strong opposition to the proposal. In comments submitted to the U.S. Army Corps of Engineers regarding Twin Pines Minerals' original 404 permit application,

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[12] *U.S. Geological Survey Mineral Commodity Summaries 2022, Jan. 31, 2022*

[13] *Consent Order: State of Florida Department of Environmental Protections v. Chemours Company FC, LLC, Feb. 7, 2019; Georgia Department of Natural Resources Environmental Protection Division Notice of Violation to GRP Franklin Renewable Energy Facility, Dec. 9, 2019; North Carolina Environmental Quality Notice of Violation to North Carolina Renewable Power Lumberton, LLC, June 29, 2016*

the U.S. Environmental Protection Agency said that the proposed project would have "a substantial and unacceptable impact" on the Okefenokee Swamp. The U.S. Fish & Wildlife Service warned that damage to the Okefenokee National Wildlife Refuge "may be permanent."

In a Nov. 22, 2022 letter to Gov. Brian Kemp, Department of Interior Secretary Deb Haaland urged the state to deny this permit: "I strongly recommend that the State of Georgia not move ahead with approval of this proposed mine in order to ensure that the swamp and refuge are appropriately protected, consistent with all appropriate legal processes…The proposed mining activity in this area poses an unacceptable risk to the long-term hydrology and the future of the swamp ecosystem."

On Feb. 8, 2022, Gov. Kemp recognized the importance of the Okefenokee National Wildlife Refuge and Stephen Foster State Park's designated International Dark Sky in his proclamation declaring Okefenokee Swamp Day. During the 2022 legislative session, the House of Representatives unanimously passed a resolution to encourage efforts to protect the Okefenokee Swamp and promote it as an international tourist destination.

Due to the proximity of the proposed mine to the Okefenokee National Wildlife Refuge, the scale of the direct, secondary, and cumulative impacts, and the range of other known and unknown risks documented above, Georgia River Network requests that the EPD deny this permit.

We further recommend that the Georgia Department of Natural Resources work with the legislative branch and Gov. Brian Kemp to develop a long-term plan to protect Trail Ridge from future mining proposals.

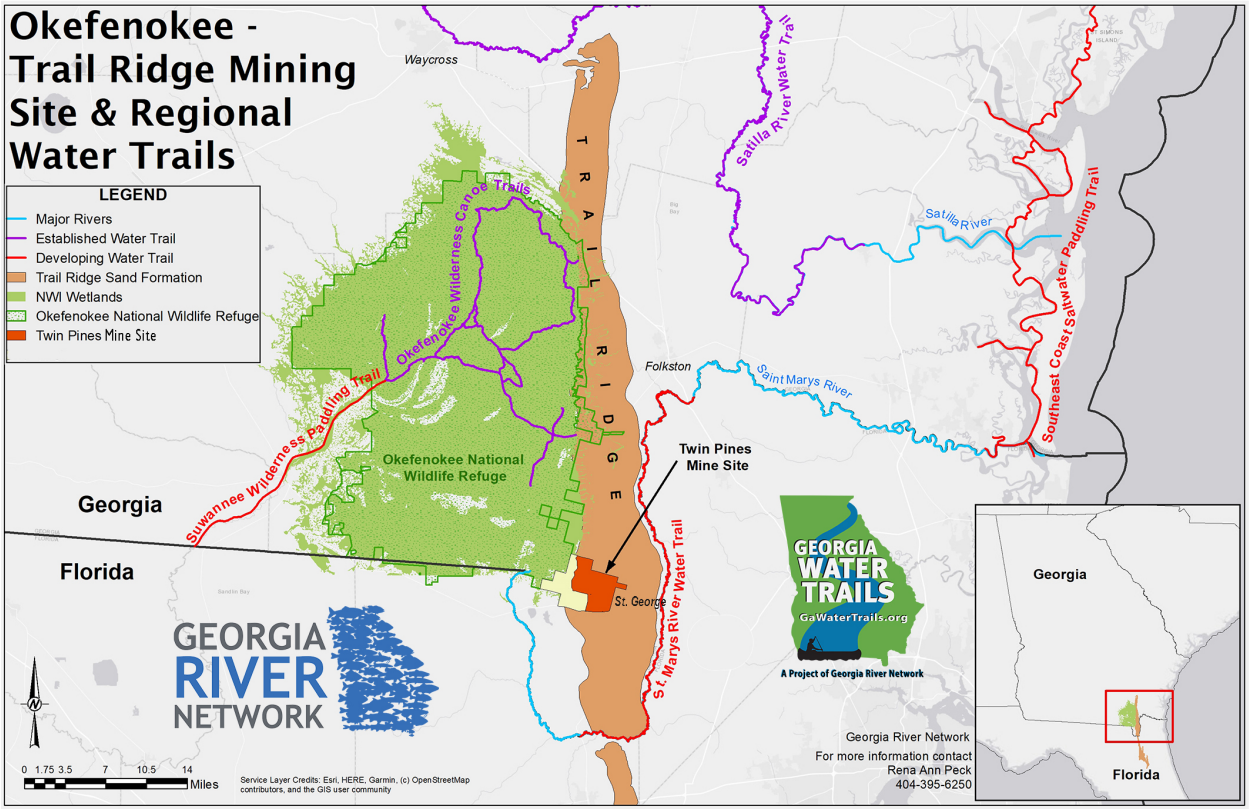
The Okefenokee Swamp is a rare and treasured public resource. The health of that system and the local economy that depends upon it should not be put at risk to procure common minerals that can be more safely acquired elsewhere. Thank you for your time and consideration of these comments. Please let me know if you need any additional information.

Sincerely,

Rena Ann Peck
Executive Director
Georgia River Network
rena@garivers.org
404-395-6250

CC: Director Richard Dunn
Georgia Environmental Protection Division
2 MLK Blvd, SE
Atlanta GA 30303

Appendix A



Okefenokee Wilderness Canoe Trail System

Appendix B

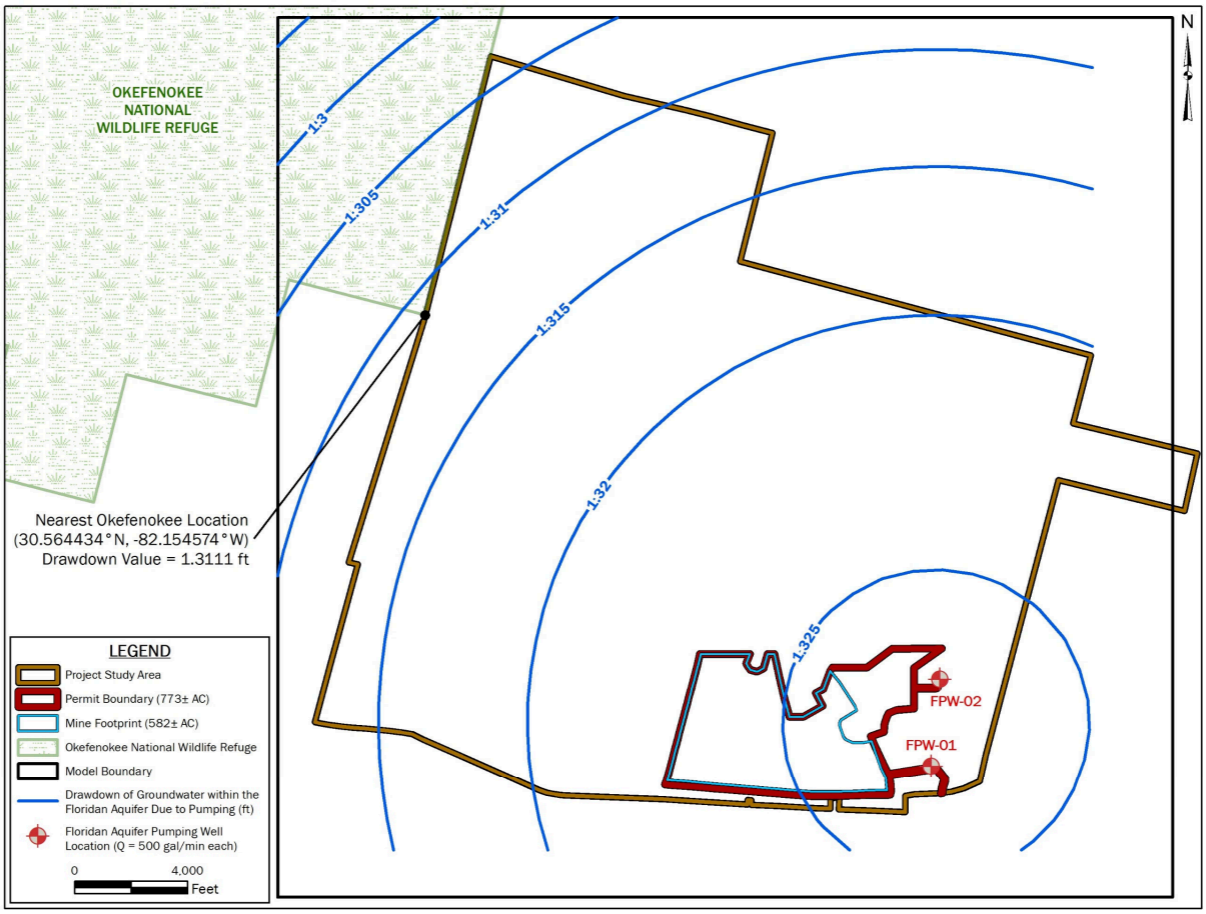
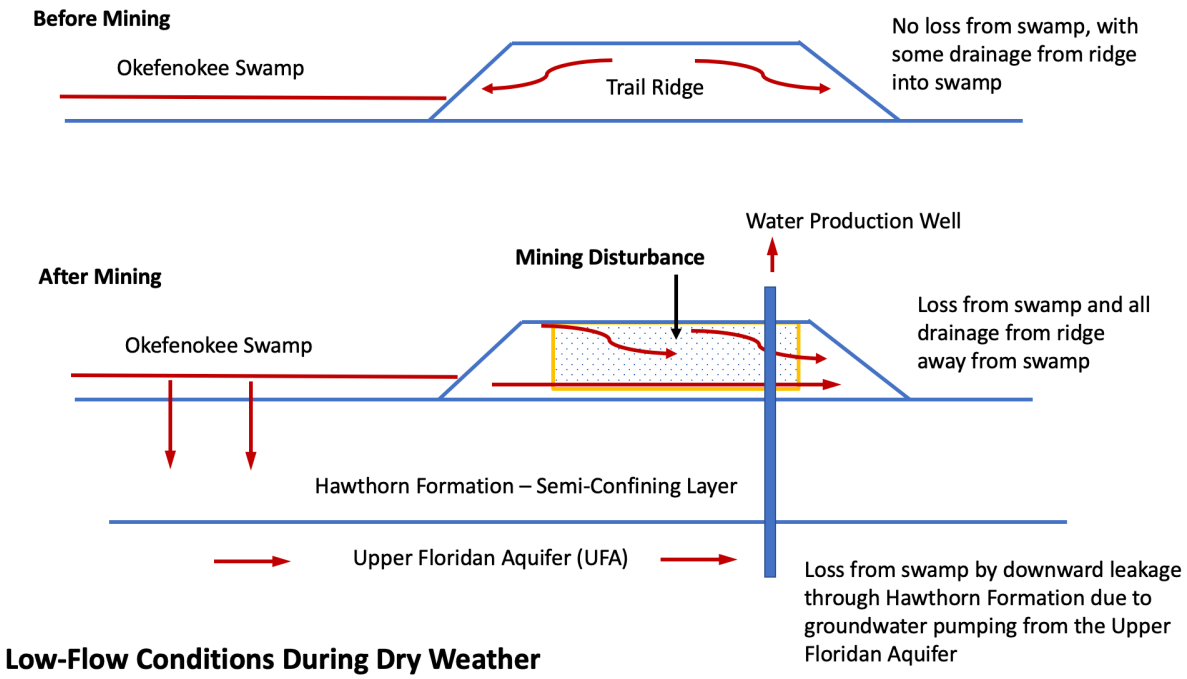


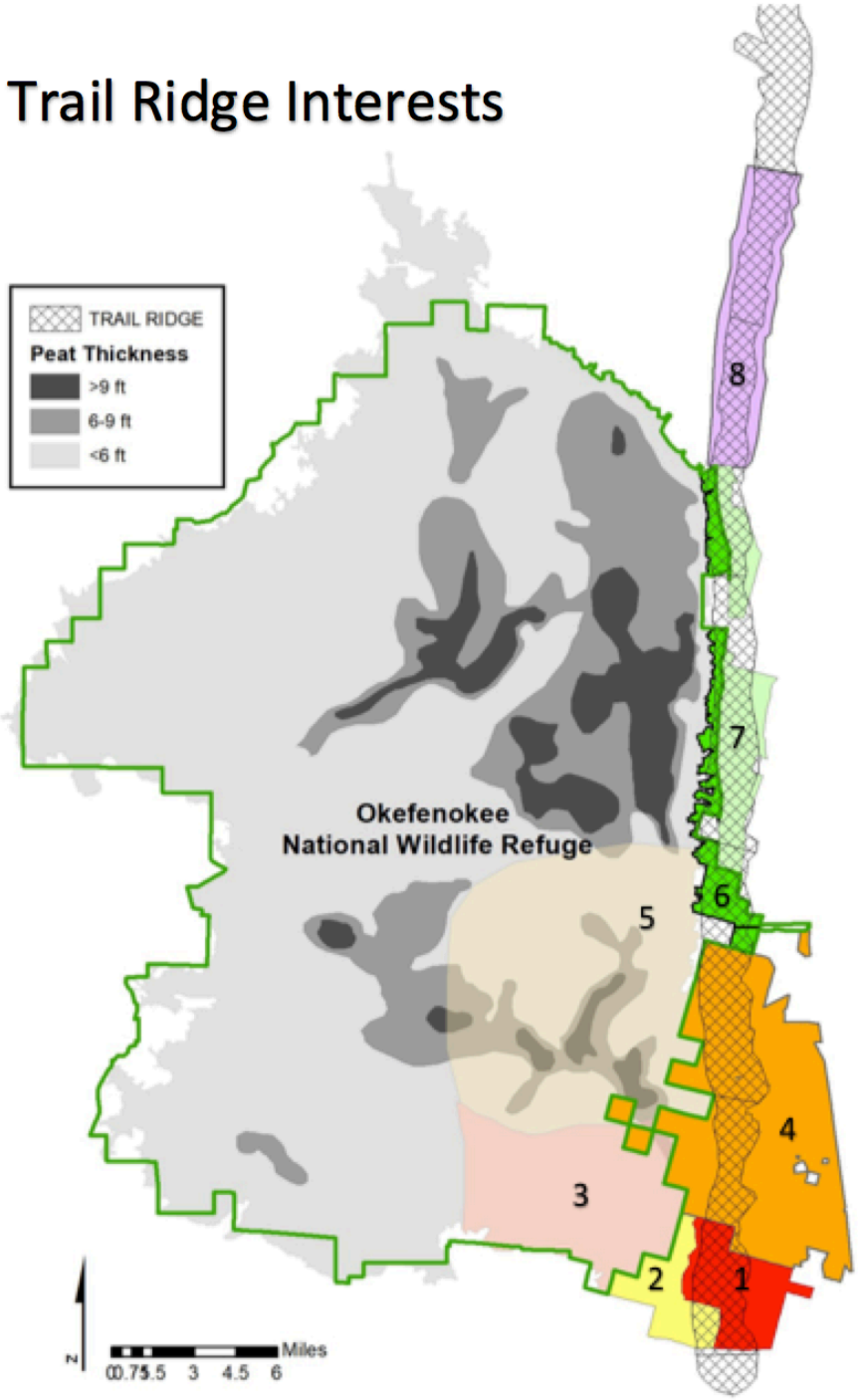
Figure 7. Drawdown (ft) in the Floridan Aquifer after 5 years (one year after pumping stopped).

Appendix C



Low-Flow Conditions During Dry Weather

Appendix D



Trail Ridge Property Owners and Peat Thickness Levels

Area 1	Ownership	Twin Pines Minerals
	Acres	7,543
	Interest	Mineral Rights/Timber Easement
	Potential Peat Compromised if mined	Area 3

Area 2	Ownership	Rayonier
	Acres	5,231
	Interest	Mineral Rights/Timber Easement
	Potential Peat Compromised if mined or hydrology altered	Area 3

Area 3	Ownership	Okefenokee NWR
	Acres	26,357
	Interest	Maintain peat and hydrology
	Total Volume of Peat - cubic meters to depth of 1.22 m	130,128,969
	Actual Carbon - metric tons	8,458,383
	Actual CO2 equivalent - metric tons	31,014,071

Area 4	Ownership	Toledo Manufacturing
	Acres	35,088
	Interest	Mineral Rights/Timber Easement
	Potential Peat Compromised if mined	Area 5

Area 5	Ownership	Okefenokee NWR
	Acres	54,685
	Interest	Maintain peat and hydrology
	Total Volume of Peat - cubic meters to depth of 1.22 m	269,989,098
	Actual Carbon - metric tons	17,549,291
	Actual CO2 equivalent - metric tons	64,347,402

Area 6	Ownership	Okefenokee NWR
	Mineral Rights	GA Wildlife Federation
	Timber and Recreation Rights until 2081	Forest Investment Associates

Area 7	Ownership	The Conservation Fund
	Mineral Rights	GA Wildlife Federation
	Timber and Recreation Rights	Forest Investment Associates
	Acres	9,632
	Interest	Timber Easement

Area 8	Ownership	?
	Acres	Approx. 12,767
	Interest	Mineral Rights/Timber Easement
	Protects inflows into the Okefenokee	