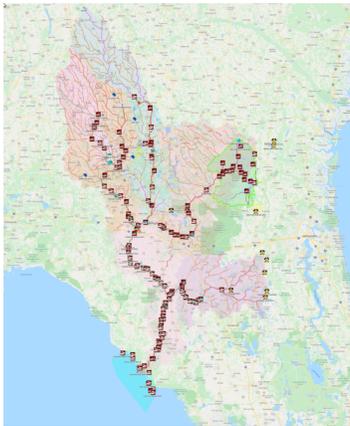
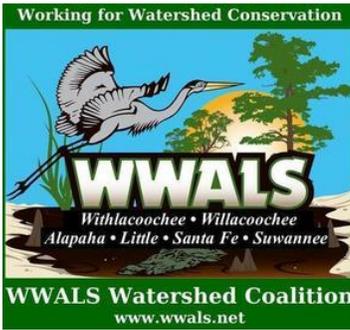


March 17, 2023



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WWALS is an IRS 501(c)(3) nonprofit charity est. June 2012

WWALS Watershed Coalition (WWALS) advocates for conservation and stewardship of the surface waters and groundwater of the Suwannee River Basin and Estuary, in south Georgia and north Florida, among them the Withlacoochee, Willacoochee, Alapaha, Little, Santa Fe, and Suwannee River watersheds, through education, awareness, environmental monitoring, and citizen activities.

Suwannee RIVERKEEPER® is a program and a paid staff position of WWALS.



Land Protection Branch,
4244 International Parkway,
Atlanta Tradeport- Suite 104,
Atlanta, Georgia 30354
twinpines.comment@dnr.ga.gov

RE: WWALS Public Comments on Mining Land Use Plan of Twin Pines Minerals, LLC

Dear EPD,

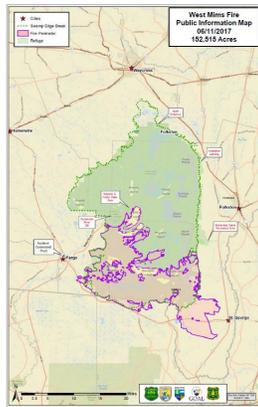
This letter recommends denying the permit applications by Twin Pines Minerals, LLC (TPM) to mine for titanium dioxide (TiO₂) near the Okefenokee Swamp, based on specifics of the Mining Land Use Plan,¹ as requested in the Notice of the Opportunity for Public Comment.²

Why this decision is important far away

First, we present some context for why this decision is important far away from the Okefenokee Swamp.

Any lowered water level or dewatering of the surface around the Swamp increases the risk of fires. The 2007 Bugaboo fire spread smoke west across the Suwannee River Basin, causing respiratory distress 80 miles away in Quitman, continuing 450 miles to Meridian, Mississippi. Southwards the smoke closed I-75 and went 370 miles to Fort Lauderdale, Florida. North it went 250 miles to Atlanta.

During the 2017 West Mims fire, Lowndes County Fire (along with Valdosta and its other cities, and nearby counties) sent assistance from 75 miles away. They were among 900 firefighters from across the country.³ “There’s nobody that can tackle something like that alone,” said Lowndes County Emergency Management Director Ashley Tye, before Lowndes County Chairman Bill Slaughter read a thank-you letter from the Charlton County Commission, which said in part, “We would not have been able to defend the livelihood of our citizens without you or your equipment.”⁴



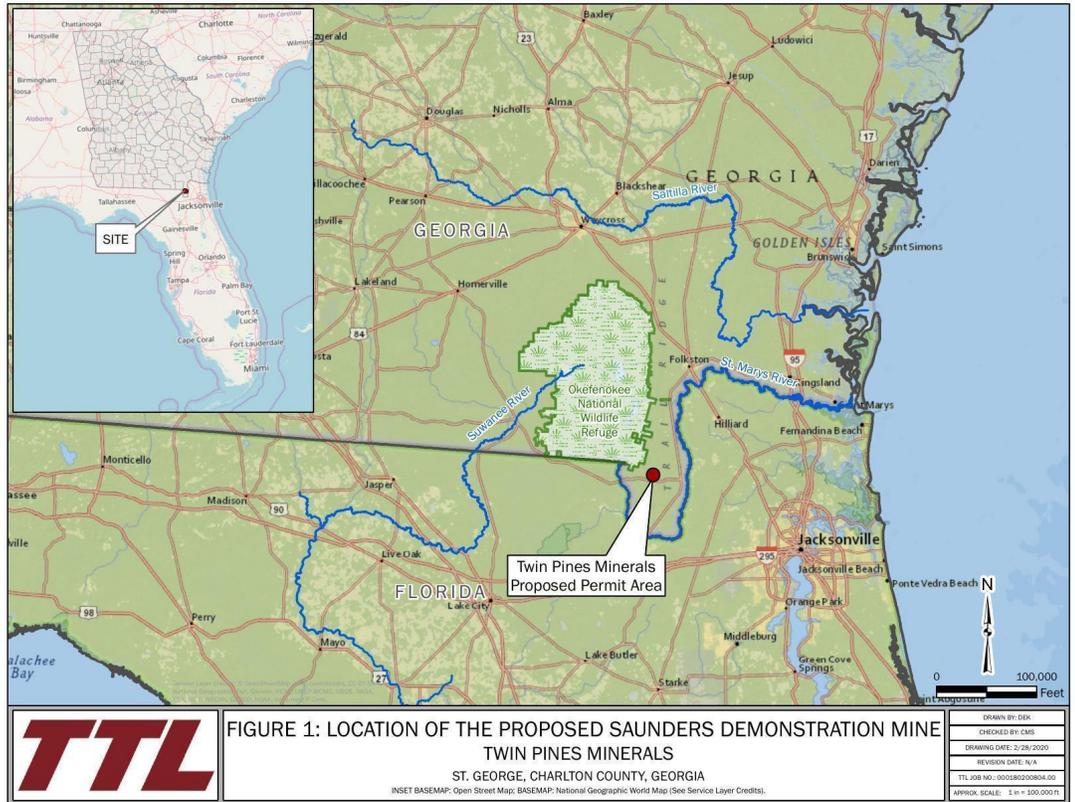
The 152,515 acres burned by the 2017 West Mims fire caused much local economic damage.⁵ The area burned included most of the land later purchased by Trail Ridge Land, LLC, which Twin Pines Minerals, LLC (TPM) now proposes to mine. That fire disaster thus set up the conditions

for the current potential mining incursion too near the Okefenokee Swamp.

The local economy around the Okefenokee Swamp is aided by and is significant to economies far away. For example, the first sign off of I-75 southbound at Exit 16 says “Okefenokee Swamp, Stephen C. Foster State Park, 62 Miles,” which encourages people to stay overnight in Valdosta and eat in restaurants there. People from Lowndes County and much farther away travel to that Park and to the Refuge and to the Suwannee River for paddling, fishing, birdwatching, and other activities. SCFSP is in Charlton County, and, as already mentioned, any lowered water level in the Okefenokee Swamp affects the whole Swamp.



Further, according to the U.S. Fish and Wildlife Service, the Okefenokee National Wildlife Refuge (NWR) provides more economic benefit to each of Georgia and Florida than any other NWR.⁶



Part of the Okefenokee Swamp is in Florida, and the Swamp is the headwaters of both the St. Marys River, which forms part of the border between Georgia and Florida, and of the Suwannee River, which flows through Florida to the Gulf of Mexico, and is the subject of the Florida State Song. This means that any risks posed by the proposed mine to the Okefenokee could have downstream impacts on the quality and quantity of the waters of the state of Florida, including the Floridan Aquifer, which is the main source of water for drinking, agriculture, and industry for all of south Georgia and most of Florida.

Mining Land Use Plan Summary

The Mining Land Use Plan Summary says, "No process water will be discharged from the site."² This is hard to believe, since TPM is under a Florida Consent Order for spilling wastewater and other infractions at two TiO₂ mine sites in north Florida.⁸

The people behind TPM also started two biomass plants in north Georgia,⁹ one of which caused a massive fish kill,¹⁰ and both of which caused the state to pass a law to stop them burning railroad ties.¹¹ TPM proposes to use multiple experimental techniques to minimize environmental impacts including draglines, evaporators, and placing a layer of bentonite horizontally to name a few.

TPM has a bad environmental track record, which does not indicate that they can do what they are saying without harming the surrounding ecosystem. This mine is not worth risking the swamp and its rivers or underground waters.

That Summary adds, "To reduce the amount of groundwater withdrawn, all process water will be returned to the basin so that it can be continually recycled after use."¹² And that Summary says, "Evaporators are mobile and will be relocated as necessary to control water in Ponds M1 – M4. The floating platforms for the 167 evaporator units displace a total of 0.022 MG of water."¹³ Which is it? All process water will be recycled? Or some of it will be evaporated?

This statement is the subject of an active lawsuit:¹⁴ "There are no jurisdictional wetlands on the proposed mine property."¹⁵

No mention of Mercury

The only mention of mercury in the MLUS seems to be in one file with groundwater sampling results.¹⁶ We see no plan in the MLUS for what to do when mercury is found.

Relatively high rates of atmospheric mercury deposition in and around the swamp have been well documented,¹⁷ especially from coal power Plant Scherer.¹⁸ Land disturbance from mining activities also has the potential to mobilize toxic mercury that has accumulated in soils in and around the swamp. It is also well documented that distributing soil that has accumulated this highly toxic element will increase its mobility.¹⁹ In turn further contamination of fish tissue is likely and will result in increased risk from fish consumption. Current advisories already recommend limiting meals of fish caught in the region to one meal per month.²⁰

WWALS first raised this issue in its comment letter to the Army Corps on September 12, 2019.²¹ The rest of the text italicised below in this subsection is verbatim from that earlier comment letter.

There has been a monitoring station with the refuge since 1997. Data from this station has shown that the rates of mercury deposition in the ONWR are some of the highest reported across the continental USA (see Figures 3 and 4).

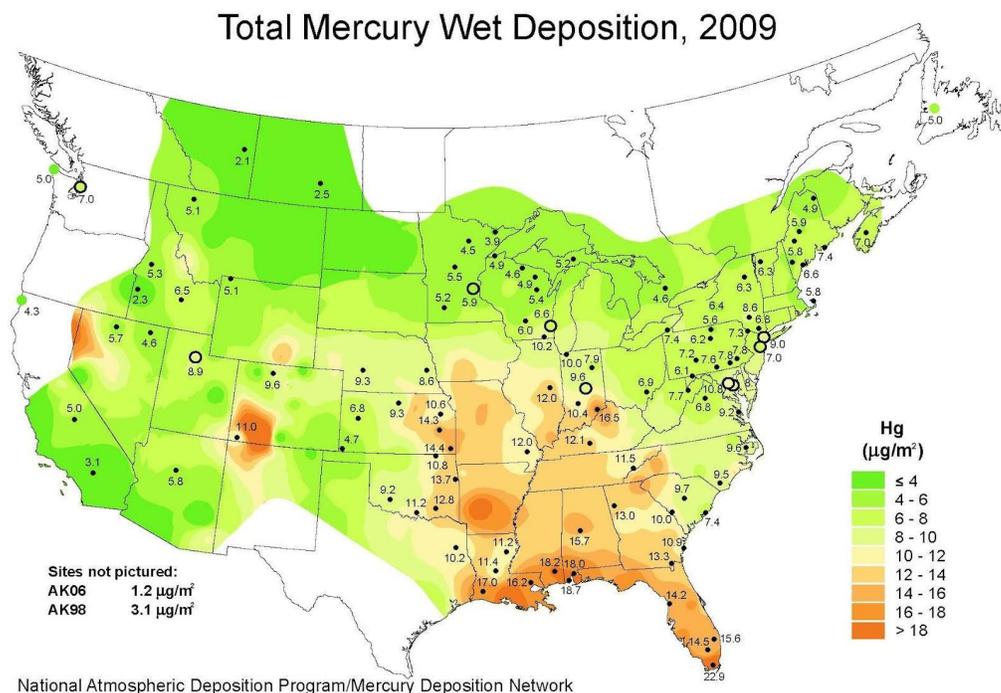


Figure 3: Total Mercury Wet Deposition, 2009 (NADP) CC by 4.0²²

The toxic impacts of mercury are well known. This includes accumulation of a highly toxic form of the element in fish tissue. This is why there is a health advisory on fish consumption in the region²³ and Total Maximum Daily Load (TMDL) assessments have been made on both the St. Mary's²⁴ and Suwannee Rivers.²⁵ A detailed review of the published scientific literature (Grigal, 2003)²⁶ has indicated that in wetland environments such as those in the proposed mining area, mercury deposited from the atmosphere tends to be geochemically immobilized in soils and sediments. The same review has also reported that exposure of mercury contaminated soil and sediment to air can release the mercury making it more mobile and increasing potential for toxic impacts. In the application the miners have reported that they remove the topsoil from the mining site and return it after mining is complete. In both cases soils will be exposed to the atmosphere and this will likely change the mercury residing in the soil to forms which are more mobile, leachable, and bioavailable. Adverse impacts to water quality

and as a result to the ecosystem are likely. This includes increased mercury uptake in fish and further restrictions on their consumption. As noted in the TMDL's for the St. Mary's and Suwannee Rivers that are near the mining site, a 56 to 58 % reduction in mercury loading is needed to meet acceptable water quality standards (TMDLs). Release of mercury from contaminated soils during mining operations can only make the situation worse.

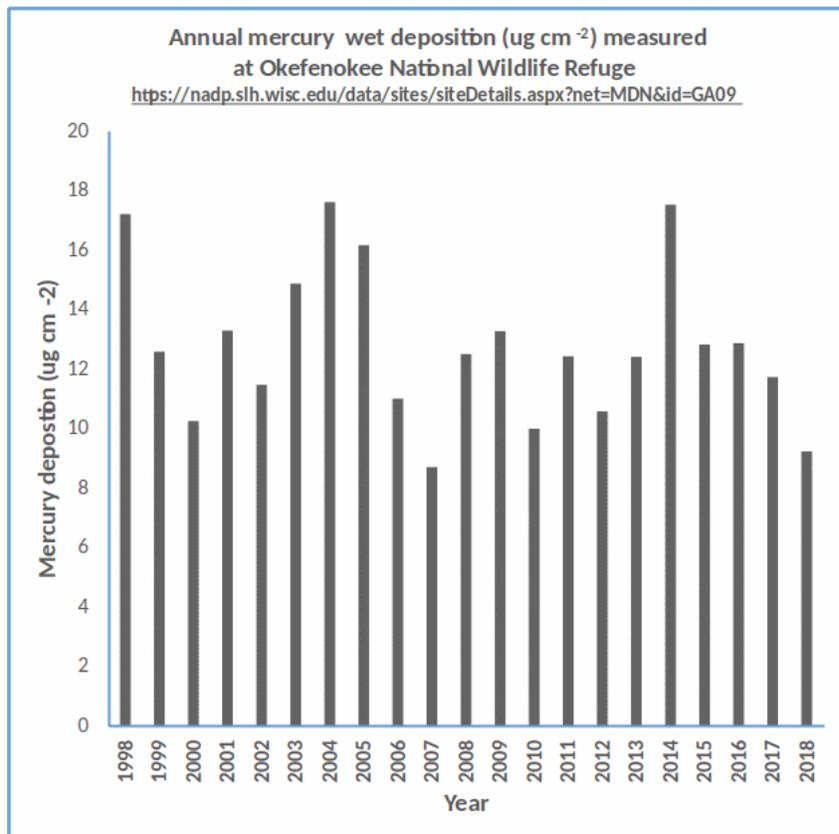


Figure 4: Annual mercury wet deposition, ONWR, from NADP.²⁷

Twin Pines Hydrologic Analysis Memo (Gage Selection)

As hydrologists from seven universities have written,²⁸ the Macclenny St. Marys River Gauge favored by the miners and GA-EPD²⁹ is too far from the mine site to be used to determine hydrologic effects. Not only should the closer Moniac gauge be used, but also the Traders Hill gauge, which is downstream of the creeks such as Boone Creek that run east from the mine site.

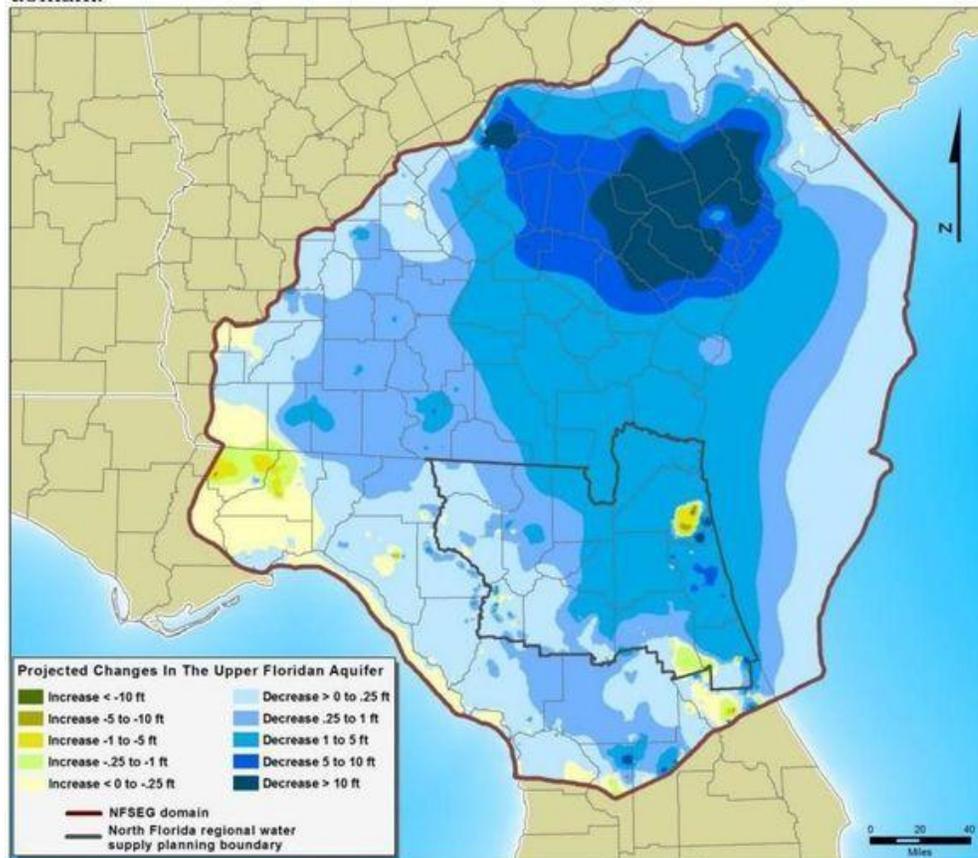
There is no wall in the Okefenokee Swamp between the St. Marys and Suwannee River watersheds. Any change in the level or composition of the swamp water will affect all of the Okefenokee Swamp, and the Suwannee River, which drains about 85% of the swamp. Lower water levels would mean more difficult boating on the paddle trails and motor boat tour routes, affecting the economy as well as wildlife. Thus the Fargo Suwannee River Gauge should be used. There is no way to know whether the mine affects the Suwannee River without measurements.

Not only water level but also water quality should be monitored at the river gauges.

Water quality sampling wells are also needed beyond the mining area and near both the St. Marys and Suwannee Rivers. There is scientific evidence that the swamp exchanges surface waters with underground waters all the way down to the Floridan Aquifer.³⁰ Underground water is the primary source for drinking water, irrigation, and industry throughout south Georgia and north Florida. Florida is already affected by water withdrawals from as far away as Savannah, a hundred miles farther than the mine site, as evidenced by the North Florida Southeast Georgia Groundwater Model (NFSEG), compiled with collaboration of personnel of the Georgia Environmental Protection Division for the

North Florida Regional Water Supply Plan (NFRWSP) by Florida's Suwannee and St Johns River Water Management Districts.³¹ If current withdrawals from Savannah are affecting Florida's groundwater, then this proposed mine site will likely exacerbate those impacts.

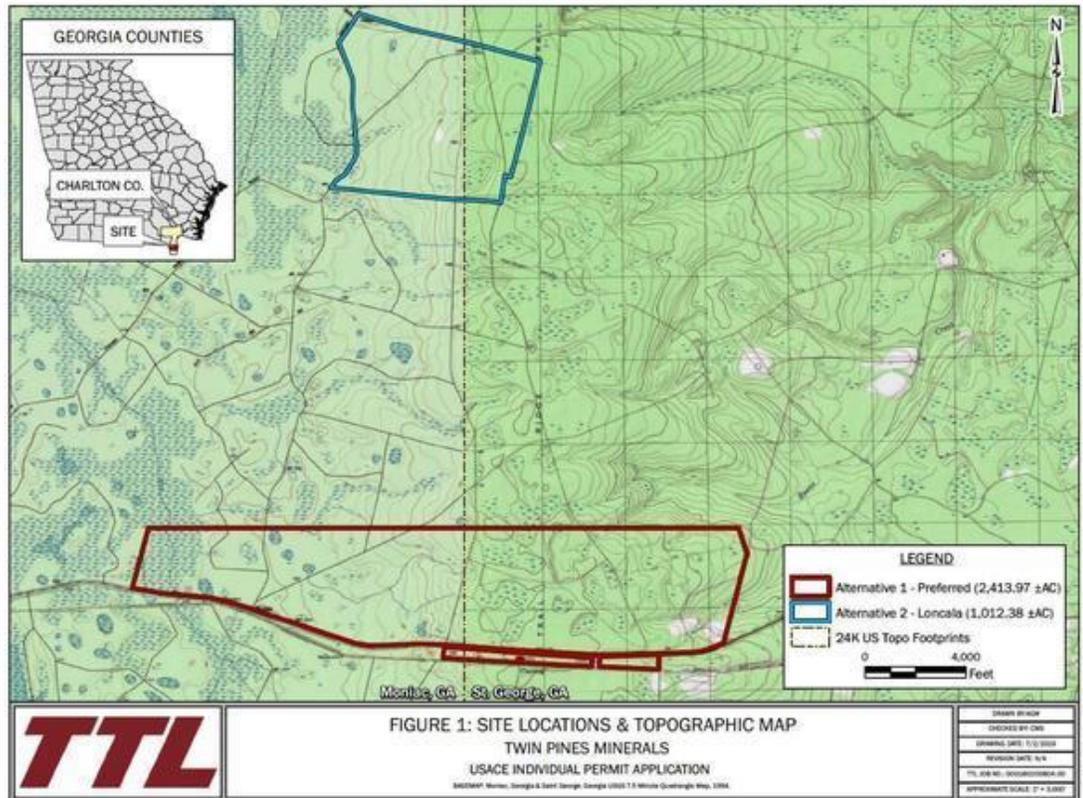
Figure C3: Change in Upper Floridan aquifer from 2035 withdrawals within the NFSEG domain.



The Floridan Aquifer also feeds the numerous springs along the Suwannee, Santa Fe, Withlacoochee, and other Rivers in the Springs Heartland of Florida, which is a major contributor to tourism, which is the biggest industry of Florida. Those springs and rivers are already affected by lower flows, which any further reduction would make even worse.

A demonstration mine will probably expand

Since the application is for a demonstration mine, citing the northern boundary of the demonstration area is misleading. According to U.S. FWS, the rest of the land the miners own goes north to within 400 feet of the Okefenokee Swamp and within half a mile of the Refuge.³² That northwest parcel of the miners' land was featured as "Alternative 2 - Loncale" in the miners' original 2019 permit application to the Army Corps of Engineers.



TPM’s original 2019 permit application spoke of 12,000 acres to be mined over 8 years.³³ Some of that, including the west half of “Alternative 1 - Preferred” on the above map, turned out to be owned by Teachers Insurance and Annuity Association of America (TIAA), who insisted TPM remove it from their application.³⁴ According to the Charlton County Tax Assessors maps, TPM as Trail Ridge Land LLC still owns land extending north of the proposed mine site adding up to almost 8,000 acres, including that northwest corner of “Alternative 2 - Loncale” within 400 feet of the Swamp. The miners withdrew their original application and reapplied for only the 582 acres, small enough that they could claim the site had no jurisdictional wetlands. By so doing, they violated a Federal policy against "segmenting" permit applications. So, the planned mining area has been in constant flux in response to permitting, legal, and marketing considerations.

If the miners get their foot in the door with this application, they are unlikely to stop with the demonstration site, as illustrated by experience right across the state line. Not content with its four existing Florida TiO₂ mines, Chemours has gotten a fifth mine permitted, in the watersheds of Suwannee Riverkeeper. Chemours also has two active TiO₂ mines in Georgia, near Folkston and Jesup. All these existing mines indicate that there is no need for yet another mine, much closer to the Okefenokee Swamp. They also indicate that the miners are not likely to stop with just a demonstration mine.

The Okefenokee Swamp and its waterways are more important than white paint

According to Chemours³⁵ and the Florida Department of Environmental Protection (FDEP),³⁶ the Chemours Florida mines produce ilmenite, which is used to produce titanium dioxide (TiO₂). Titanium dioxide is used in the manufacture of clothing, paper, paint, sun block, and other products.³⁷ If TPM had contracts for anything else, no doubt they would have announced that by now. This TiO₂ does not become titanium metal, and is not necessary for national defense, as evidenced by the U.S. Department of Interior opposing the TPM mine. White paint and sun block are not worth risking the Okefenokee Swamp, the rivers, or the aquifer.

Intact and undisturbed wetlands provide a wilderness experience that has a direct positive economic

impact on surrounding gateway communities and across the state. Ecosystem destruction produces huge costs associated with cleanup and restoration. The historical destruction of another famous wetland, the Florida Everglades, has cost taxpayers an estimated \$8.8 billion through the Comprehensive Everglades Restoration Plan (CERP)³⁸ for which the federal government has provided \$3.5 billion of which has been provided by the federal government \$5.3 billion has been paid for by Florida). The state of Florida allocated another \$3.5 billion for Everglades restoration activities in January 2023.³⁹ In total, CERP is expected to cost \$23.2 billion.⁴⁰ There is an enormous cost associated with trying to fix an ecosystem once it has been broken, and taxpayers, not industry groups, would be saddled with that cost.

Please stop this incursion into the Okefenokee Swamp and its environs.

Please deny this permit application.

John S. Quarterman
Suwannee RIVERKEEPER®
/s
WWALS Watershed Coalition, Inc.

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