

1 INTRODUCTION

Twin Pines Minerals, LLC (Twin Pines), is an Alabama-based minerals mining company proposing to mine heavy mineral sands (HMS) sedimentary deposits, which occupy a portion of a relict beach ridge along Trail Ridge in Charlton County. Twin Pines contracted TTL, Inc. (TTL) to assist in completing and submitting this application for a Groundwater Use Permit to use groundwater as part of the operations to mine and extract HMS from the deposit at the proposed Saunders Mine located near Saint George, Georgia in Charlton County. The proposed mining project consists of approximately 2,414-acres as depicted on the U.S. Geological Survey (USGS) 7.5-minute Topographic Maps of Moniac, Georgia and Saint George, Georgia (Figure 1). An aerial photographic map with site location is also included as Figure 2. The center of the site is located near latitude 30.52490044 and longitude -82.12419891. According to the USGS Topographic Map, the elevation at the site ranges from approximately 120 to 175 feet above mean sea level. The Twin Pines' project includes the extraction of the high-quality HMS reserves in a safe, cost effective and environmentally sound manner for export by truck, rail and eventual barge to national and international customers. The principal heavy minerals to be extracted in this proposed HMS operation are zircon, titanium minerals (ilmenite, leucoxene, rutile), and staurolite.

The proposed mining area is separated into three mining blocks and an area of avoidance (no mining). The TIAA Mining Block consists of approximately 216 acres, Keystone Mining Block approximately 570 acres, Adirondack Mining Block approximately 481 acres, and the area of avoidance approximately 1,147 acres. Figure 3 depicts the mining blocks and area of avoidance. Twin Pines expects to mine approximately 25-40 acres per month and produce an HMS concentrate on-site. Mineral sands, titanium minerals - ilmenite, leucoxene and rutile, zircon, and staurolite occur in the upper 50 feet of sand in the Trail Ridge physiographic landform, which is an ancient beach ridge in Charlton County. After the HMS products have been separated, the final products will be containerized, bulk shipped or loaded on truck or rail dependent upon customer requirements. The total proposed mined acreage is 1,267 acres.

Twin Pines expects to begin construction upon obtaining the required authorizations and mining operations are expected to be conducted for an 8-year period. The proposed mining operation is expected to provide approximately 150-200 direct jobs and additional supporting subcontractor jobs.

Twin Pines is committed to protecting the environment and minimizing impacts to local citizens. Current work at the site includes the initial environmental screening to assess baseline conditions, developing an effective water management strategy, and identifying other environmental and operational concerns. The northern boundary of the site is located approximately 3.73 miles southeast from the nearest boundary of the Okefenokee Swamp National Wildlife Refuge, providing a substantial buffer of protection for this sensitive resource. Twin Pines reclamation plans are to restore land uses to the original pre-mining conditions, planted pine, as the site has been in silvicultural (timber) operations for many years. The reclamation process will begin immediately after mining in individual dragline cuts have been completed. Within 30 days of mining, the drag line cuts will be refilled with sand tailings. Thereafter, topsoil will be replaced to stabilize the reclaimed area and trees will be replanted within an 18-24 month period, depending on the planting season.