

Mining and Minerals Exploration

Goals: Provide for environmentally sound mineral exploration, development, and reclamation in areas open to mineral entry and in areas with valid existing rights that are otherwise closed to mineral entry. Seek withdrawal from mineral entry of specific locations where mineral development may not meet land use designation objectives. Maintain inventory of surficial geology, geomorphic features, geologic hazards and paleontological resources.

Objective: Implement the Minerals and Geology Standards and Guidelines.

Background: A wide range of mineral resources and deposit types occur within the boundaries of the Tongass National Forest. Examples include, but are not limited to, gold, silver, molybdenum, and uranium, as well as nationally designated “strategic” and “critical” minerals such as lead, zinc, copper, tungsten, and rare earth elements. The Forest Service recognizes that minerals are fundamental to the nation’s wellbeing and, as policy, encourages the orderly exploration and development of the mineral resources on National Forest System lands. The Secretary of Agriculture has provided regulations (36 CFR 228) to ensure surface resource protection during the exploration and development of the mineral resources.

Mining and Minerals Exploration Question: Are Federal regulations (36 CFR 228) to ensure surface protection implemented, and is the administration of this regulation through the Forest Plan effective in limiting soil and water resource impacts?

Monitoring Results

Small mining operations that were administered in FY 2012 include five locatable mineral projects and one mineral materials project. Plans of Operation to perform exploratory drilling were approved for the Herbert Glacier Project, Niblack Exploration Project, Salt Chuck Exploration Project, and Zarembo Island. Inspections were performed at Niblack and Bokan Mountain in the Craig Ranger District, and at Zarembo Island in the Wrangell Ranger District. All of the operations were found to be in compliance with their plans of operation. A mineral materials sale was approved at Marx Creek Quarry in the Ketchikan-Misty Fjords Ranger District. Bonds are in place for each of the small mining operations.

Greens Creek Mine is a large underground lead, zinc, silver and gold mine located approximately eighteen miles southwest of Juneau, AK on northern Admiralty Island. Annual mine production, since the mine opened in 1987, has averaged 10,000,000 ounces of silver, 65,000 ounces of gold and 200,000 tons of zinc and lead bulk concentrate. Mine infrastructure development is focused in three areas: the mine portal and mill at upper Greens Creek; the tailings facility and water treatment plant at Tributary Creek; and the ore transfer and housing / administration complex at Hawk Inlet. Major access routes include A Road from the ferry dock at Young Bay to Hawk Inlet, and B Road connecting Hawk Inlet to the tailings facility and the mine portal/mill area.

The General Plan of Operations (GPO) for Greens Creek Mine was initially approved by the Forest Service in 1984, after the first Environmental Impact Statement was published in 1983. Expansion of mine activities and changes to the GPO prompted several additional National Environmental Policy Act (NEPA) decisions in 1988, 1992, 2003, and a pending tailings facility expansion decision. A bond is in place to perform reclamation work. Collaboration with state agencies to adjust the bond for changes in

operation and cost of inflation was ongoing, but not yet completed by the end of FY 2012.

Seven inspections of Greens Creek Mine were conducted by Forest Service personnel during FY 2012 to monitor compliance with the plan of operations, and an additional trip was conducted by an interdisciplinary team to monitor the effectiveness of the best management practices (BMPs). Improvement projects included the installation of a cement curb around the vehicle shop refueling pad at the mill to prevent spills from escaping to unpaved surfaces; corrosion control and re-decking maintenance on the bridge at mile 7.4 on the B Road; and invasive plant eradication at pit 7 on the A Road.



Mining and Minerals Exploration Picture 1.
Water quality monitoring at Greens Creek Mine

The Kensington Gold Mine is a large underground mine in the Juneau Ranger District. It is located about 45 miles north of Juneau on the southern and western flanks of Lions Head Mountain between Berners Bay and Lynn Canal. Over 400,000 tons of ore were mined in 2012, and over 10,000 tons of concentrate containing about 80,000 ounces of gold were shipped to an off-site refinery. Mine infrastructure development is focused in four areas: the Jualin portal/mill/administration complex at Johnsons Creek; the Comet portal/water treatment plant at Sherman Creek, the tailings treatment facility at Lower Slate Lake; and the loading dock and ferry landing at Slate Creek Cove.

The Plan of Operations for the project was approved by the Forest Service in 2005, and construction was initiated that same year. A lawsuit filed against Coeur Alaska citing Clean Water Act violations at the tailings treatment facility caused construction activities to be temporarily suspended. After a final decision by the Supreme Court in 2009, construction resumed and gold production commenced in July 2010. A bond is in place to perform reclamation work. Collaboration with State agencies to adjust the bond for changes in operation and cost of inflation was ongoing, but not yet completed by the end of FY 2012.



Mining and Minerals Exploration Picture 2.
Dam construction at Kensington Gold Mine

Seven inspections of Kensington Gold Mine were conducted for monitoring Best Management Practices effectiveness and compliance with the Plan of Operations during FY 2012. Some of the inspections were collaborative efforts with experts employed by state government agencies. Several significant improvement projects were started. An underground paste plant was completed which will reduce the need to dispose of waste rock on the surface. The dam at the tailings treatment facility was raised 25 feet, which will allow for additional disposal of tailings. Construction of the dam was nearly completed by the end of the fiscal year.

The Forest Service is engaged in an ongoing effort to mitigate the dangers posed by Abandoned Mine Land (AML) features on the National Forests. These features include tunnels, adits, shafts, tailings ponds, rock dumps, mill sites and other associated mining features. Six AML features in the Ketchikan-Misty Fjords and Thorne Bay Ranger Districts were mitigated in FY 2012.

Evaluation of Results

Two large locatable mine plans have been administered, and several dozen exploration-drilling programs and mineral material operations have been processed. Inspections of mineral sites indicate that the effects of mining activities on surface resources are consistent with Forest Plan expectations. The necessity of the operator to obtain approval for their Plan of Operations provides the Forest Service the opportunity and authority to control the effects of the development on the Forest's surface resources.

Numerous AML features were effectively mitigated over the past five years, including nine adits in the Juneau Ranger District, seven adits and three vertical shafts in the Sitka Ranger District, three adits in the Ketchikan-Misty Fjords Ranger District, and one adit and two shafts in Thorne Bay Ranger District.

Action Plan

Monitoring should continue to consist of on-site visits by qualified personnel trained in Minerals Administration. The Forest Service should continue to collaborate closely with mine operators and State agencies to ensure that Plans of Operation are followed, reclamation bonds are in place, and BMPs are implemented and effective.