Investigation Fact Sheet
Nabesna Mine Site

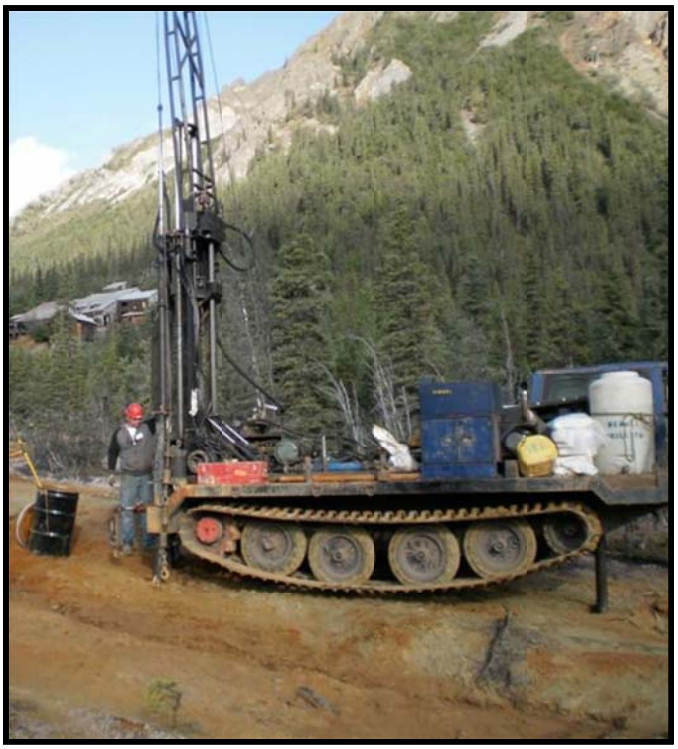
National Park Service
U.S. Department of the Interior

Wrangell-St. Elias National Park
and Preserve

Spring 2011

THE NABESNA MINE SITE

At the end of the 46-mile long Nabesna Road lies the Nabesna Mine, a gold mine that operated between 1925 and 1940 and is now listed on the National Register of Historic Places. The historic mine, mill, camp buildings, and a portion of the tailings (finely milled rock remaining after the gold was removed) are located on the Sunshine Lode mining claim, patented to the Nabesna Mining Corporation. The remaining tailings are situated on federal lands managed by the National Park Service (NPS). The tailings cover approximately seven acres below the mill, on the north and south sides of Nabesna Road. The mine tailings are reddish-orange in color and contain high levels of metals, including lead and arsenic. The finely-grained tailings are easily disturbed and transportable when walked upon or driven over. Environmental studies conducted to date have evaluated impacts of the mine tailings on the nearby ecosystem, as well as potential risk to park staff and visitors. These studies indicate that long-term health risks may exist to park staff and visitors, particularly children, who spend time on the tailings. For health and safety reasons, it is important to avoid contact with site tailings and not drink water from Cabin Creek.



RECENT ENVIRONMENTAL INVESTIGATIONS

The most recent environmental investigation at the site was performed in August 2009, when samples were collected from tailings, soils, creek sediments, groundwater, and surface water. Two track-mounted rigs were used to drill borings approximately 50 feet below ground surface throughout the tailings area. Borings were analyzed to assess physical soil properties. Data will be used to determine migration patterns and depth of metals contamination beneath the tailings and to identify and evaluate remedial cleanup alternatives. Groundwater monitoring wells were installed in some borings to enable sampling and analysis of groundwater and assessment of the site's hydrogeology. PVC pipes extending from the ground mark the location of groundwater monitoring wells at the site.

Drill cuttings and soil waste, resulting from the investigation, remain on-site containerized in several 55-gallon drums. The drums are located in a small clearing on the south side of Nabesna Road near the tailings. Plans for the disposal of these drums will be incorporated into the cleanup plan for the site.

SOIL SAMPLING

Metals (e.g., lead and arsenic) associated with mine tailings occur naturally in area soils. To establish the naturally occurring, or "background" concentrations of these metals in soils that are not impacted by the mine tailings at the site, surface soil samples were collected from slopes surrounding the mill within five quarter-acre test areas and analyzed in a laboratory. Soil samples also were collected beneath the tailings and compared to the background samples. The analysis indicated that concentrations of arsenic were elevated above background levels within the first two feet of soil beneath the tailings, but no deeper. Lead did not appear to have migrated beneath the tailings.

Surface soils adjacent to the tailings were analyzed for several metals to determine the extent of tailings migration on the ground surface. Soils were analyzed at more than 200 locations using a portable X-Ray Fluorescence device that provides a near-instant analysis of metals concentrations of surface soils. Sample locations were adjusted in the field to determine a complete footprint of metals-impacted soils. This sampling effort defined an approximately eight-acre area of vegetated soil adjacent to the tailings that appears to have been impacted by tailings transported by wind and water.

GROUNDWATER SAMPLING

Eight groundwater monitoring wells were installed at the site. Near Nabesna Road, groundwater was not encountered until nearly 50 feet below ground surface. Near the base of the tailings, groundwater was shallow, emerging in springs at several locations. Groundwater samples from all of the wells were analyzed for metals at a laboratory in Anchorage. Analytical results show that metals are not migrating from the tailings to groundwater and metals concentrations are below drinking water standards.

CABIN CREEK SAMPLING

The location of Cabin Creek was mapped with a GPS unit from the slopes of White Mountain approximately one mile upstream of the mill and continuing until Cabin Creek empties into Jack Creek approximately two miles downstream of the tailings area. Within this range, surface water and sediment (settled material on the bottom of the creek beds) samples were collected from points along Cabin Creek, springs emerging from the slopes of White Mountain above the mill, springs located near the base of the tailings, Jack Creek, and Skookum Creek. Some visible deposits of tailings were present along the banks of Cabin Creek as far as a mile downstream of the site. Preliminary results indicate that sediments may have been impacted by metals in the first 1,000 feet downstream of the tailings. Elevated concentrations of metals in surface water may migrate as far as three-quarters of a mile downstream of the tailings.

COMMUNITY INVOLVEMENT

A full report detailing the results of the 2009 investigation and previous studies will be included in the Engineering Evaluation/Cost Analysis (EE/CA) Report being prepared for the Nabesna Mine Site. The local community and general public will have the opportunity to review and comment on the EE/CA Report, which is expected to be available in the fall of 2011. More information is also available from the administrative record file, which contains all of the documents upon which the selection of cleanup action will be based. The administrative record is available for public review at the following two locations:

National Park Service
Alaska Regional Office
240 West 5th Avenue
Anchorage, Alaska 99501
Contact: Linda Stromquist
Phone: (907) 644-3576
Mon.-Fri. 9:00 a.m. – 5:00 p.m. AKT

National Park Service
1050 Walnut Street, Suite 220
Boulder, Colorado 80302
Contact: Greg Nottingham
Phone: (303) 415-9014
Mon.-Fri. 9:00 a.m. – 4:00 p.m. MT

If you have questions concerning the Nabesna Mine Site, please contact Danny Rosenkrans at Park Headquarters in Copper Center (907) 822-7240 or Greg Nottingham at (303) 415-1483.