

Fort Knox Gold Mine

by Bretwood Higman, David Coil, Elizabeth Lester

LAST MODIFIED: 15TH MARCH 2020
CREATED: JAN. 19, 2018

Ground Truth Trekking

Copyright: Creative Commons Attribution

Table of Contents

1. Summary

Summary

The Fort Knox Mine, a large gold mine in Interior Alaska, produces around 370,000 ounces of gold per year. This mine is a significant producer of mining waste in Alaska, but has had fewer environmental problems than many other large mines in the state.

Mine information

Fort Knox is a conventional open pit gold mine (/Issues/MetalsMining/GoldMiningMethods.html) owned by the Canadian-based Kinross Gold Corporation (http://www.kinross.com/) through their Fairbanks Gold Mining Inc. subsidiary, and located about 25 miles northeast of Fairbanks. It is the second-largest gold mine in Alaska, just behind Pogo Mine (/Issues/MetalsMining/PogoMine.html). The mining facility is capable of processing up to 45,000 tons of ore per day. For several years, the mill at Fort Knox also processed ore from the now-defunct True North Mine (http://dnr.alaska.gov/mlw/mining/largemine/truenorth/index.htm), about 11 miles away. The mine draws an average of 35 MW of power (/Issues/MetalsMining/Powering-Large-Mines-In-Alaska.html) from the electrical grid in Fairbanks, and has

Copyright: Creative Commons Attribution

backup diesel generators, using a total of 10.5 million gallons of fuel per year (http://www.legis.state.ak.us/basis/get_documents.asp?session=26&docid=8596). The mine processes ore into dore bars (http://en.wikipedia.org/wiki/Dore_bar) which are then trucked off-site for further refining.

The mine originally used methods that focused on higher grades of ore, but in 2008 constructed a cyanide heap leach facility (/Issues/MetalsMining/GoldCyanidation.html) to process much lower-grade ores and mineralized waste. This expansion has raised gold production levels, and delayed the closure of the mine from 2012 to an estimated 2017 with heap-leaching to continue through 2021.

Environmental Concerns

Unlike a number of mines in Alaska, Fort Knox has not had any serious environmental problems during operation. A 2004 environmental audit (http://dnr.alaska.gov/mlw/mining/largemine/fortknox/pdf/fgmiaudit2004ex.pdf) by an independent contractor found that Fort Knox was in compliance with the vast majority of environmental regulations and restrictions relevant to the mine. However, according to the EPA's "Toxic Release Inventory (TRI) (http://www.epa.gov/tri/)",
Fort Knox Mine is the third-largest producer (http://www.epa.gov/TRI/tridata/tri08/national_analysis/pdr/2008%20TRI%20Workbook%20Section%20C.pdf) of mining-related toxic waste in Alaska (behind Red Dog Mine (/Issues/MetalsMining/RedDogMine.html) and Greens Creek Mine (/Issues/MetalsMining/GreensCreekMine.html)).

Copyright: Creative Commons Attribution

The mine uses toxic cyanide (/Issues/MetalsMining/GoldCyanidation.html) for purification of the gold, and in May 2010, had a spill (http://www.ktuu.com/global/story.asp?s=12443773) releasing 300,000 gallons of cyanide-containing water, although the environmental impact in this case was minimal. A similar, 45,000 gallon, spill (http://newsminer.com/bookmark/19924514/article-45+000+gallons+of+cyanide+solution+spills+at+Fort+Knox#.UDka in August 2012 also appears to have had minimal impact.



TAILINGS DAM AT FORT KNOX GOLD MINE — Mine tailings dam at Fort Knox (/Issues/MetalsMining/FortKnoxMine.html) gold mine with the mill facility in the background. — Get Photo (/photos/tailings-dam-at-fort-knox-gold-mine/)

Copyright: Creative Commons Attribution

Acid mine drainage (/Issues/MetalsMining/AcidMineDrainage.html) was not predicted to be a problem at Fort Knox Mine due to the high neutralization potential (http://www.epa.gov/osw/nonhaz/industrial/special/mining/techdocs/amd.pdf) of the surrounding rock, and has not been detected to date. However, it should be noted that in many cases acid generation can take years to develop, and in the event of acid generation at Fort Knox Mine, the reclamation bond posted by the mine would be seriously inadequate (http://www.csp2.org/files/reports/Greens%20Creek%20Mine%20Financial%20Assurance%20Review%281%29 for continued water purification and monitoring.

Further Reading

> Kinross Gold Corporation website on Fort Knox mine (http://www.kinross.com/operations/operation-fort-knox-alaska-usa.aspx)

> DNR page on Fort Knox mine containing relevant documentation and permits (http://dnr.alaska.gov/mlw/mining/largemine/fortknox/index.htm)

> Northern Alaska Center for the Environment page on Fort Knox mine (http://northern.org/programs/clean-water-mines/hardrock-mines-in-interior-and-arctic-alaska/fort-knox-true-north-mine-1/fort-knox-true-north-mine)

Copyright: Creative Commons Attribution