INSPECTION REPORT: KENSINGTON GOLD MINE

Tongass National Forest Minerals Group
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Date of Inspection: Thursday June 1, 2017
Date of Report: Monday June 19, 2017
USDA Forest Service Inspector: Richard Dudek

Ranger District: Juneau Ranger District
Weather Conditions: Partly cloudy with drizzle. Temperature: Low 60's ◦F.

Exploration in accordance with operating plan	Not Applicable
Timber removal following timber sale contract	Not Applicable
BMPs for erosion control	Satisfactory
Water Quality BMPs	Satisfactory
Public safety & fire prevention	Satisfactory
Reclamation work adequate and timely	Satisfactory
Roads maintenance adequate and current	Satisfactory
Tails placement in accordance with plan	Satisfactory
Waste Rock placement in compliance	Satisfactory
Company supervision of operation	Satisfactory
Operating in a clean and orderly manner	Satisfactory

Any conditions noted as UNSATISFACTORY will require follow up action by the Mine Inspector and a written memorandum to the operator, outlining the necessary work.

NEW REMARKS

Ward Air provided transportation (Cessna 185) to/from site.

Kevin Eppers (Senior Environmental Engineer, Coeur Alaska), Cassandra Joos (Sr. Environmental Coordinator, Coeur Alaska) accompanied Richard Dudek (Geologist, Forest Service), Edward Gazzetti (Hydrogeologist, Forest Service), and Dave Wilfong (Alaska Department of Natural Resources (ADNR)).

This inspection included the Access roads, Comet Development Pile, Comet water treatment plant, Sherman Creek Outfall, Kensington Development Pile, Pit 4, Mud Dump, TTF area, and the Fuel Depot.

NOTEWORTHY ITEMS:
Surface exploration drill is set up near Avalanche Road (Photo 1).
A new rock shaker is staged near the Pug plant at Pit 4.
Coeur Alaska recently relocated 30,000 cubic yards of waste rock to Pit 4.

ACTION ITEMS:
Comet water treatment plant: White material was observed inside the Comet water treatment plant.
Mud Dump: Reddish color water needs to be tested for ARD that was observed near the edge of the HDPE liner for Graphitic Phyllite (GP) stockpile.
Pit-7: A section of the liner for the GP stockpile has separated and needs to be fixed.
TTF dam: Sections of the liner covering the GP outcrop have separated and need to be fixed.

ACCESS ROADS
The access roads are in adequate condition comply with Coeur Alaska's 2016 BMP plan.

COMET DEVELOPMENT PILE
Waste rock from the Raven drift is being deposited on the southwest end of the development pile (Photo 2).

COMET WATER TREATMENT PLANT (CWTP)
The Comet water treatment plant was treating 2000 gallons of water per minute (gpm). Pond 1 was receiving mine site water, and Pond 2 was inactive (Photos 3-4). The water treatment plant was tidy and in order.

The test barrel was removed for cleaning (Photo 5) and the test rock (Photo 6) was still being used for monitoring white material accumulation in treated mine site water. White material was observed on the test rock and on the non-porous concrete floors below the turbidity meters (Photo 7).

The silt fencing and the trench for storm water conveyance located behind the CWTP requires improvements. The silt fencing and trench were constructed as a mitigation for stormwater conveyance. The silt fence (Photo 8) needs to be replaced with a new one, and the trench needs improvements.

Several dewatering bags were removed with the material being utilized for underground backfill in the stopes (Photo 9). Additional dewatering bags will staged the bags when dredging operations start.

SHERMAN CREEK OUTFALL
Due to high flows in Sherman Creek, white material may have been washed out (Photo 10). It is assumed that white material is still precipitating within the creek bed due to it being observed in the Comet water treatment plant. Coeur Alaska has submitted a proposal to the Alaska Department of Environmental Conservation (ADEC) to use calcium chloride ($CaCl_2$) as a coagulant for removing white material out of solution during the water treatment process. Coeur Alaska continues to use a dewatering bag located near the 445 level underground sump to help remove the white material out of water.

KENSINGTON DEVELOPMENT PILE
With approval from the Alaska Department of Natural Resources Mining Division, Coeur Alaska recently removed 30,000 cubic yards (yd^3) from the Kensington waste rock pile (Photos 11-12) and stockpiled the material at Pit 4.

PIT-4
The State of Alaska Department of Natural Resources (ADNR) recently approved Coeur Alaska to remove 8,000 yd^3 of soil and stockpiled it at the Mud Dump.

Coeur Alaska recently staged a rock shaker near the Pug Plant (Photo 13). This will separate the large rocks (five inches or greater in diameter) from the GP stockpiles. The smaller rocks will be deposited onto the Pug plants hopper. The larger rocks will be stockpiled behind a graphitic phyllite (GP) stockpile (Pit 4), and encapsulated along with GP into the cement for underground backfill.

Mud Dump
Coeur Alaska plans to keep the 8,000 yd^3 soil stockpile at the Mud Dump. To reduce erosion and dust, Coeur Alaska will hand seed the soil stockpile with a USFS approved seed mixture.

The GP stockpile located at the Mud Dump appears have reddish color water above the edge of the HDPE liner (Photo 15). Coeur Alaska personnel should to test the reddish water for possible acid rock drainage (ARD).

TAILINGS TREATMENT FACILITY (TTF) AREA
The TTF's water level was 699.0 feet. The TTF water treatment plant was treating 700 gpm, and the reclaim water was 200 gpm. Below the dam, the TTF dam plunge pool's (Photo 16) pipe is jammed. The ARD is currently being pumped into the 40-foot spillway sump. The ARD is then piped to the seep plant for treatment and discharged.

Below the dam, sections of the liner are not fully covering the GP outcrop (Photo 17). The GP outcrop needs to be fully covered to prevent ARD generation.

The seep plant was not in operation during this inspection. Operators at the plant will bring the plant online once both of the 4500-gallon tanks are full. Once the water is treated for ARD, the waste collected will be used as underground backfill and the water is discharged into the infiltration gallery near the northern TTF.

The ARD pH level in the northern TTF was approximately 7.0. The ARD collected in the trench (Photo 18) is pumped into a series or holding tanks. From there, the ARD is hauled by an ARD truck, pumped into the seep plant for treatment, and discharged. The concern with the ARD at this location is the mobilization of heavy metals such as manganese (Mn), cadmium (Cd), and Aluminum (Al).

Coeur Alaska recently re-routed the access road for the northern TTF area. Approximately 5,000 cubic yards (yd^3) of non-acid generating waste rock was used for the construction of the access road (Photo 19).

PIT-7
A section of the liner for the GP stockpile has separated (Photo 20). The purpose of the liner is to minimize exposure of the GP to atmospheric conditions, which reduces oxidation and ARD generation.

FUEL DEPOT
During a previous inspection on 04/22/2017, approximately 8 ounces of diesel fuel was observed below the fuel line for tank-5. Fuel Depot operators were immediately notified, and tightened the pipefittings where the leak occurred. No leaks were observed at the Fuel Depot (Photo 21). The absorbent pads below the pipes remain in place as a precaution (Photo 22).

A new flexible fuel line was installed at the refueling pad (Photo 23). The flexible line is easier to use when transferring fuel from tank T-100 to the fuel truck.

KENSINGTON PORT FACILITIES AREA

A new water bar was constructed as a mitigation for sedimentation control. The water bar will route storm water into a trench rather than along the access road (Photos 24-25). This will help minimize erosion, flow paths, and sediment loading.

FOLLOW UP ITEMS

White material accumulation in Sherman Creek.
Pit 4 Pug plant operations.
Mud Dump's reddish color water results.
TTF area GP outcrop is completely covered.

PHOTOS (Additional photos available upon request).

Photo 1. Surface exploration drill located on the Kensington side of the mine site.

Photo 2. Waste rock from the Raven drift is being deposited at Southwest section of the Comet Development Pile.

Photo 3. Comet water treatment plant Pond 1.

Photo 4. Comet water treatment plant Pond 2.

Photo 5. Test barrel used for monitoring white material.

Photo 6. White material test rock.

Photo 7. White material was observed inside the CTWP.

Photo 8. Silt fencing needs to replaced or repaired.

Photo 9. Dewatering bag staging area behind the CWTP.

Photo 10. Sherman Creek.

Photo 11. 30,000 cubic yards of waste rock was removed from the Kensington Development Pile.

Photo 12. 30,000 cubic yards of waste rock was relocated to Pit 4.

Photo 13. A rock shaker (red machine) will be used to separate large rocks from smaller rocks.

Photo 14. 8,000 cubic yards of topsoil was stockpiled at the Mud Dump.

Photo 15. Along the edge of the GP liner at the Mud Dump, reddish color water observed.

Photo 16. TTF dam plunge pool.

Photo 17. GP outcrop liner needs to completely cover the outcrop.

Photo 18. Northern TTF ARD catchment.

Photo 19. Highlighted area shows the location for the new access road at the northern TTF.

Photo 20. Sections of liner have pulled apart and need to be fixed.

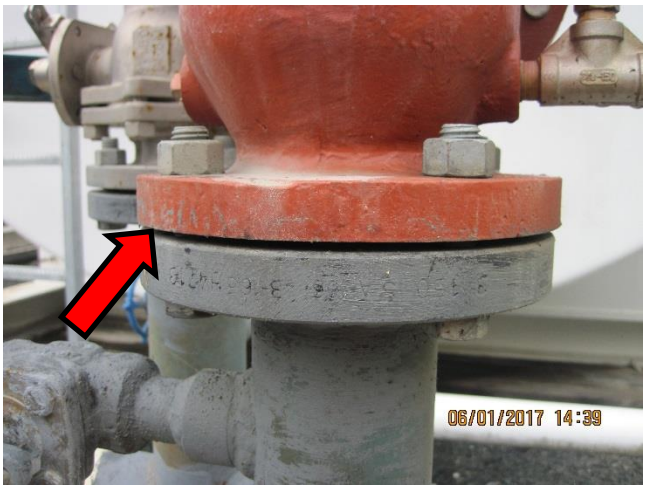

Photo 21. Pipefittings were tightened where the leak occurred.

Photo 22. Absorbent pads placed below as a precaution.

Photo 23. The Fuel Depot refueling station.

Photo 24. A new water bar was installed near the port facilities (Image 1 of 2).

Photo 25. Water bar (Image 2 of 2).

Thanks to Kensington Mine for a safe visit.
U.S. Forest Service Officer: /s/ Richard Dudek