

# STATE OF ALASKA

## DEPARTMENT OF ENVIRONMENTAL CONSERVATION

*DIVISION OF WATER*

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### FIELD INSPECTION REPORT COEUR ALASKA/KENSINGTON MINE

**Inspection Date:** October 10, 2012, 08:30 - 15:30  
**Report Date:** October 16, 2012  
**Weather:** Fine. Temperature 50 – 60F

**Coeur Personnel:** Kevin Eppers, Environmental Superintendent

**Agency Personnel:** ADEC: Kenwyn George  
ADNR: Dave Wilfong  
USFS: David Schmerge (Water Quality / Hydrologist), Mike Johnson  
(Minerals Manager), Jessica Lopez Pearce (Minerals Manager)

**Purpose of visit:** One purpose of the site visit was to enable two new USFS personnel to see the mine; Mike Johnson who is temporarily in the Juneau office until the end of the year, and Jessica Lopez Pearce who is a new employee of the office and will be making regular inspections of the mines. Another purpose was to observe the recently constructed Phase 2 of the dam and the shotcrete application to the graphitic phyllite walls. The tour comprised a visit to the Comet area waste rock pile, water treatment plant and beach; the underground sumps and paste plant and the tailings treatment facility.

Access to and from the site was by USFS chartered Ward Air plane.

**Comet area:** Just outside the portal cement slurry is created within trucks to be taken to paste backfill areas within the mine where there are no pipes from the paste plant. There is a pond that is used for materials flushed from the trucks when they are cleaned. Recent rock had been placed to raise the truck loading area so that cement slurry was not carried out onto the main access and road system by trucks leaving the area. Prior to this the slurry had gone out onto the roaded area and was migrating down a storm water ditch beside the road. The rock platform should prevent this in the future. Kevin said they would scoop up the cement slurry that was presently on the road and migrating down the ditch. At the base of the rock pile a large wooden spool, possibly a cable spool, was seen to be sitting in Ophir Creek. Kevin said he had not seen it there before and would have it removed.

The water treatment plant was toured; secondary containment issues were discussed. Chemical tanks are now mounted on large plastic secondary containment units; these must be kept free of water in order to maintain the 110% chemical tank capacity. A drum was seen to have a low flexible secondary containment. This would not suffice for the 110% secondary containment requirement. Kevin said they would move the drum to another containment on the site.

Pond 1 has been relined but was not in use at the time of the site visit. A silt curtain is to be installed and it will then be ready to be put into service.

Outfall 1 was visited; it was noted that there is a new path down to the pipe diffuser system. Multiple pipes were used to minimize erosion within the stream bed.

At the beach it was noted that there was a drum with an unknown substance in it (possibly a mastic) that was not in secondary containment. There is also an old loader behind the building that has had oil leaks. There are absorbent pads under the vehicle, but this does not capture all the oil. The drum will be placed in secondary containment. Oil containment will be placed under the loader to capture any future leaks.

**Underground:** The paste plant was toured; it was not operating at the time of the visit. The plant has been operating at about 50% capacity due to mechanical issues. When fully operational approximately 90% of the tailings can be put underground. Mine drainage is towards the Jualin sump from the first 4000 ft. of the adit, and towards the Comet side for the remaining 10,000 feet of adit between the two portals. The three new sumps on the Comet side are working well. Mine drainage flows vary from 400 to 2200 gpm; at the present time it is about 1200 gpm. Workings presently extend from an elevation of 400 ft to 1400 ft, and the ore body goes up to 3000 ft.

**Tailings Treatment Facility (TTF):** Phase 2 of the dam has been completed. Shotcrete applied to the graphitic phyllite walls has seeps and it appears that the cement has been dissolved in a few locations. Old shotcrete had spalled off from the rock face. Some of the shotcreted walls will be covered over when the Phase 3 raise is completed within a few years. However, what needs to be done at graphitic phyllite areas not covered by the Phase 3 dam raise needs to be discussed and agreed to by the agencies. Seepage flow into the sump at the base of the dam is at about 20-30 gpm. This water is pumped back to the TTF.

**Graphitic phyllite:** 8,000 cy of this material that was removed from the site during the Phase 2 dam raise is temporarily stored in a sealed containment at the north mud dump. This will eventually be placed underground; the plan is to place this underground in 2014. After the material was sealed an additional 260 cy was discovered during excavation for the sump at the base of the spillway. This material has been placed at the northwest end of the TTF on a liner and covered with polyethylene. Coeur intends to place this underground, encapsulated in paste and should be able to place it underground within the next few months.

**Graphitic Phyllite Treatment Plant:** Secondary containment is required for the muriatic acid container within the plant. Kevin said he would consider making the facility secondary containment by creating a lip at the entrance and sealing the floor to capture leaks. Sludge cake

is temporarily stored in a lined containment area near the TTF water treatment plant. It is suggested that a cover be kept over this to prevent loss of sludge cake by the containment filling with water or by the cake becoming sloppy when it is time to transfer it to the underground paste facility.

**Pit 4 (also known as Pit 3):** Vehicles are maintained at this site. Adjacent to the road a parked bobcat was seen to have been leaking oil onto the road. This was pointed out to Kevin and he said they would have it cleaned up.

**Action items:**

1. Clean up the cement slurry outside of containment at the Comet rock dump.
2. Clean up the oil spill under the Bobcat at Pit 3.
3. Clean up the oil under the old excavator at Comet beach, and install a capture mechanism for future leaks.
4. Provide 110% secondary containment for all chemical tanks.
5. Make sure the temporary cover over the 260 cy of graphitic phyllite material is secure and will not blow off, and overlaps such that rainwater does not reach the stored material.
6. Continue discussions and / or provide options for long-term treatment or actions for graphitic phyllite faces that will not be covered over by the Phase 3 dam construction.



Photos 1 & 2 – Cement slurry at the Comet portal and the cement truck wash sump.



Photo 3 – Wood spool in Ophir Creek.

Photo 4 – Pond 1 - relined.



Photo 5 – Barrel with limited secondary containment.



Photo 6 – Secondary containment units.



Photo 7 – Outfall 001 to Sherman Creek.



Photo 8 – Oil beneath old excavator at Comet Beach.



Photos 9 & 10 – Graphitic phyllite at the north mud dump and the far end of the TTF.



Photo 11 – TTF and raised dam.



Photo 12 – Phase 2 dam raise.



Photo 13 – Spalling shotcrete



Photo 14 – Seeps on new shotcrete



Photo 15 – Seep, possible cavity in shotcrete.



Photo 16 - Seeps at the spillway plunge pool.



Photo 17 – Muriatic / hydrochloric acid in the graphitic phyllite WTP.



Photo 18 – Filter cake from graphitic phyllite WTP.



Photo 19 – Oil beneath the Bobcat at Pit 3.