INSPECTION REPORT

Alaska Department of Environmental Conservation

Division of Water

410 Willoughby Ave, Juneau, AK 99811

ADEC Inspection Form
Last updated (4/08)

Inspectors: Kenwyn George, 907-465-5313
Pete McGee 907-451-2141

Section A: General Data

Inspection Date	Permit #	Borough	Receiving Waters	Weather	Facility Type
October 8, 2009	AK-005057	N/A	E. Fork Slate Creek	Current Conditions: Fine, temperature in the 40's. Rainfall in prior days: Showers.	Tailings Disposal Facility

Discharges to: Surface Water ☒ Ground Water ☐ | **ANNOUNCED** Inspection

Section B: Facility Data

Name and Location of Site/ Facility Inspected

Kensington Lower Slate Lake (LSL)
Dam construction and Acid Rock Drainage area adjacent to LSL.

Loc: Lat: 58d 49' 58"N
Long: 134d 57' 58"W

Source: **NPDES permit**

Entry Time	**Permit Effective Date**
08:00	September 1, 2005
Exit Time	**Permit Expiration Date**
13:00	August 31, 2010

On-Site Representative
Clyde Gillespie (Surface Ops Mgr), Pete Strow, (Env. Coord.)

Additional Participants:

Responsible Official(s):

Clyde Gillespie, Surface Operations Manager
x Contacted
Clyde: **523-3309** Kevin: 523-3328

LSL: Jen Stetz, AIC Construction Civil Superintendent

	Yes	No
Samples Taken?		X
Photos Taken?	X	
Analytical Results?		X

Section C: Findings/Comments

BACKGROUND

Coeur Alaska is constructing a dam to retain tailings to be placed in a Tailings Disposal Facility (TDF), previously Lower Slate Lake (LSL), now classified by ADEC as a Treatment Works. Adjacent to the dam downstream of the left abutment, material with an acid rock discharge (ARD) was encountered and has been covered by Coeur to minimize metals leaching. The lake is being dewatered to enable dam construction. The purpose of regular DEC inspections is primarily to observe activities associated with the dam and ARD.

Regulatory Status/ Compliance History

Coeur received an NOV on August 26, 2008 to resolve issues with seeps and discharges from the ARD material to LSL.

FIELD INSPECTION

Construction status:

Excavation of the Phase 1 dam construction had progressed such that the graphitic phyllite material had been removed from the "Big Hole" (Photos 1 and 6) and transported to the temporary storage pad. Other unsuitable material (soils) had been removed from the dam foundation area and transported to the west side of the lake at the head of the lake. Bedrock had been struck at a depth of around 10 feet below the natural surface; however it was expected to be up to 30 feet below the natural ground level in other places. The majority of the diorite material from adjacent to the mill had been transported to the storage areas alongside the dam access road. A crusher was set up and soon to be ready for crushing rock for the dam construction.

Construction activities in progress:

A tracked excavator was preparing the USL bypass pipe route on the east side of the dam. It traversed across to the opposite embankment where pits were dug (Photo 2) for the geologist (Clint Degenhart/Henry Follman are two of the three geologists on site) to make a determination as to whether there was graphitic phyllite present at that location.

Preparation was under way to install two pumps capable of pumping up to 1200 gpm through filter bags to reduce the sediment load from the TDF.

An access road had been constructed to the proposed plunge pool location.

Proposed construction activities for the following 1-2 weeks:

Continue with excavation of unsuitable material from the foundation area of the dam. Commission additional pumps and filters for TDF dewatering.

Other:

Tailings Disposal Facility / Lower Slate Lake:

Approximately October 1st the lake / TDF experienced what appeared to be a turn-over event. The water went overnight from being clear to brown and turbid (Photo 3). Pumping had been cut back to around 1000 gpm to reduce turbidity impacts to East Fork Slate Creek, and the sediment loading to the dirt bags into which the pumps discharge prior to the water going to East Fork Slate Creek. Additional pumps and fine mesh filter bags were being installed to allow additional discharge of this turbid water. Because the sediment is very fine colloidal material, it will take some time to settle again within the impoundment. The water from Upper Slate Lake was running clear, with a turbidity of 2 NTU.

Acid generating rock on the east bank of East Fork Slate Creek:

Seep water treatment

Contractors were in the process of moving the treated water storage tank and flocculent tank to an elevation above and beyond the dam footprint. Due to a contractor misunderstanding, water from the storage tank was being discharged over the bank (Photos 4 & 5). The normal discharge location for this water was into the “Big hole”. Since the discharge location was incorrect the contractor closed the valve at the time of the site visit and they were directed by Clyde Gillespie that the water from the tank must be placed on the roads. Water from the plant is used to water the roads when possible or piped to the Big Hole. Coeur informed ADEC that the water flowing over the bank was captured in ponds in the diversion pipe excavation and pumped back to the plant for treatment and discharge to the “Big Hole”.

Seep water disposal

The possibility of land disposal of seep water within the TDF watershed was discussed with Clyde Gillespie; a plan of their proposal is needed prior to ADEC issuing or agreeing to a Compliance Order by Consent (COBC) for the discharge of this water.

Graphitic Phyllite storage cell (Photo 6):

This cell is in Pit 3 (as it is called in the POO, otherwise called Pit 4 by surface operators). Material had been placed here from the “Big Hole” and from the road access to the plunge pool adjacent to East Fork Slate Creek. Approximately 200 cy of material had been placed on the pad. The water drains from the pad into a covered sump (Photo 7), thence to a 20,000 gallon storage tank prior being transported to the seep water treatment plant at the TDF. Adjacent to this cell is another cell where hydrocarbon contaminated soil is stored for future remediation. This cell also drains to the same sump as the graphitic phyllite cell, however there is no water draining from it, and the contaminated soils have been covered over with polyethylene to keep rainwater off the pad. The remediation cell, which requires circulating water, will not be used while water is draining from the graphitic phyllite pad for transportation to the seep treatment plant. Also, should a hydrocarbon sheen form within the sump, the hydrocarbons will not be pumped into the storage tank because the suction in the sump is below the water surface. A polyethylene cover had been placed over the graphitic phyllite pad and material. The seal at the liner/drain contact from the pad appeared in good condition such that one would not expect a leak where the pipe passed through the liner.

Comet water treatment plant:

Prior to visiting the TDF, a tour was conducted of the Comet water treatment plant and NPDES 001 outfall. The plant was operating well; effluent turbidity was 0.057 within the plant and 0.054 at the NPDES sampling location in a shack adjacent to the effluent pipe. A vac truck was located adjacent to the first pond. Sediment from mine drainage water has collected in this pond to a depth of about 4 feet and is to be removed by the vac truck.

Storm water drainage:

Ditches were not overly-loaded with sediment. Road improvements were under way in the Spectacle Lakes area of the dam spur road, however there was no rain at the time of the site visit and sediment ponds appeared to be operating adequately.

SAMPLING ACTIVITIES – None conducted. **RECORDS REVIEW**– None conducted.

SUMMARY

Any issues requiring action by Coeur or the state agencies?

1. Prevention and ensuring no additional treated seep water flows directly to East Fork Slate Creek.
2. Submittal by Coeur of plan for the disposal of treated ARD seep water to the land around and adjacent to the TDF.

Section D: Compliance/Recommendations

ADMINISTRATIVE VIOLATIONS

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POTENTIAL WATER QUALITY VIOLATIONS

Treated seep water has elevated Cadmium (when using receiving water hardness), sulfate and TDS.

Section E: Appendices

1: Photographic record.

Signature	Signature only acknowledges receipt of this report. Inspection report given to:
Kenwyn George AND PETE MCGEE 11/17/09	
Inspector Division of Water — Date	Company (if applicable): — Date

PHOTO ADDENDUM – KENSINGTON LOWER SLATE LAKE – OCTOBER 8, 2009

PHOTO 1. **EXCAVATION OF DAM FOUNDATION**

PHOTO 2. **EXCAVATOR DIGGING EXPLORATORY PITS**

PHOTO 3. **TURBID LAKE/TDF WATER**

PHOTO 4. **DISCHARGE OF TREATED SEEP WATER**

PHOTO 5. TREATED SEEP WATER. PLUNGE POOL BEYOND, NEXT TO DIRT BAG.

PHOTO 6. STORAGE PAD FOR GRAPHITIC PHYLLITE

PHOTO 7. SUMP AT PAD / FLOW FROM PAD.

PHOTO 6. ARIAL VIEW OF DAM SITE AND COVERED ARD AREA.