

# MEMORANDUM

State of Alaska

TO: Distribution List DATE: March 7, 2008

SUBJECT: Kennecott Greens Creek Site Visit February 13, 2008

FROM: Kenwyn George, ADEC, Water Quality Section

Attendees: Kerry Lear, Chris Wallace, KGCMC  
Johanna Kovarik, Sarah Shoemaker, USFS  
Kenwyn George, ADEC

**Purpose of visit:** to observe sampling techniques

The oversight visit was arranged by the USFS and DEC was invited to attend.  
Weather: temperature around 36 deg. No rain or snow during the sampling.  
Conditions: snow melt from heavy snowfall in early February and a cold period during that same period.

**Sites sampled:**

Greens Creek sites 6, 48 and 54 and Bruin Creek site 49. Bruin Creek site 46 (adjacent to Greens Creek) would have been sampled, but it was frozen. The three sites on Greens Creek are also known as Upper (site 48), Middle (site 6) and Lower (site 54) Greens Creek.

Samples were taken for dissolved metals, physicals (includes pH, conductivity, alkalinity, and hardness) and sulfate. A field blank was executed while at site 49.

It was noted that the samples for the physicals and sulfates were not triple rinsed; Kerry Lear said that this was not routinely done. The current field procedure followed is based on recommendations made during a prior FWMP sampling event that was observed by David Cox of the USFS. During that sample event, the physicals bottle was uncapped prior to emersion in the stream, filled once, and then capped. Mr. Cox's recommended that the sample bottle be uncapped while immersed but made no comments regarding the lack of triple rinsing as prescribed in the FWMP. After review of the FWMP program and other field sampling protocol documents (USGS, EPA) Greens Creek agrees that field rinsing of the physicals and sulfate bottles is the correct procedure to follow and will ensure that all future FWMP sampling events adhere to that protocol.

Prior to the sampling the lab was inspected where an outdated reagent (December 2007) was discovered. The reagent in question was a high value conductivity standard (2,000 uS) that is not used during the standard calibration procedure followed for the current field instruments. It had not been used and the contents were discarded. Chris Wallace said he regularly checks dates and discards outdated reagents. He stated that instruments

taken to the FWMP sites are typically calibrated within 36 hours of the sampling event then re-verified immediately prior to sampling.

Sampling was conducted from 8:00AM to 1 PM.

During the tour the area of the hydrogen peroxide spill was inspected. The tote with the break was at the site. There were no signs of the spill. Any drainage from this area reports to Pond A; from there it goes to the treatment plant. Other totes containing Methyl Isobutyl Carbinol were at the site in similar containers to the Hydrogen Peroxide. All these totes will be stored within a contained area that is to be constructed in 2008. At the far side of the warehouse were several 350 gallon totes containing various hydrocarbon products (motor, gear, and lube oils and hydraulic fluid). There is no secondary containment for these should there be a leak. This was pointed out to Kerry Lear who said they had been discussing containment for these totes. The USFS will note this for attention in their site report.

It was noted that a lot of road rock is within the snow graded off into the ditched beside the road. This results in ditches needing to be cleaned out more frequently than would otherwise be necessary in some locations. KGCMC has implemented new BMP's for the ditches, including seeding for vegetative growth. Where feasible the ditches will not be cleaned for several years to reduce sediment carried off during storm events.

The new water treatment plant at the tailings facility is totally enclosed and work continues within it. KGCMC has employed windbreaks at the top of the tailing pile to reduce dust transport, which can occur during periods of cold, dry winter weather. Tailings dust may account for elevated metals concentrations in some shallow wells surrounding the facility.

Photos from the visit:



Greens Creek site 54



Greens Creek site 6



Greens Creek site 48



Hydrogen peroxide spill area, damaged container to the left.



Break in container



Creating the field blank.



Hydrocarbon totes located behind the 920 warehouse.



Storm water drain located on the lower Hawk Inlet truck pad.



Windbreaks on top of the tailings