STATE OF ALASKA

DEPARTMENT OF ENVIRONMENATAL CONSERVATION

SOLID WASTE & WATER PROGRAMS

SARAH H. PALIN, GOVERNOR,

410 WILLOUGHBY AVE., SUITE 303
POB 111800
JUNEAU, ALASKA 99811-1800
PHONE: (907) 465-5353 – Solid Waste
PHONE: (907) 465-5313 - Water
Fax: (907) 465-5164

FIELD INSPECTION REPORT
HECLA GREENS CREEK MINING COMPANY

Inspection Date:	May 28, 2008, 10:30 AM to 3 PM.
Report Date:	June 5, 2008
Weather:	Warm and sunny
HGCMC Personnel:	Jennifer Saran (whole visit), Tom Zimmer and Eric Sundberg (Pond 6, WWTP, well 2 and PE pipe), Pete Condon and Kerry Lear (well 2, PE pipe, Site 23)
State Personnel:	Kenwyn George, ADEC
Documentation:	Photos were taken and are available for inspection at ADEC in Juneau

Purpose of visit:

1. To observe contractor practices at the tailings pile/Pond 6 excavation. Vehicles in contact with tailings had been seen by the USFS on three occasions traveling on "clean" roads. This is a violation of the DEC Solid Waste regulations 18 AAC 60 and the Waste Management Permit.
2. To discuss construction practices for the new 18" pipeline,
3. To discuss and observe Pond 6 excavation work,
4. To observe and discuss road silt impact at well 2 and
5. To observe progress at the new water treatment plant.

Pond 6

Upon arrival at the mine a teleconference was held with Ed Emswiler of the DEC Solid Waste Program to discuss the activities and proposals for Pond 6. This discussion was very informative. At HGCMC were myself, Jennifer Saran, Tom Zimmer and Eric Sundberg. Points from this discussion included:

1. Excavation work preparing Pond 6 had commenced. DEC informed HGCMC that approval of all plans of this nature is needed prior to construction activities. Plans for the construction of Pond 6 area were submitted April 21, 2008. ADEC has reviewed the plans and is preparing a response. KGCMC needed to get started on the project as the construction season has begun and the weather was opportune for excavating sediments and organics from the pond. DEC acknowledges that the window for construction activities is limited in Southeast Alaska. Bearing this in mind, and taking into consideration the heavy workload that periodically occurs, ADEC asks that construction plans be delivered farther in advance of construction activities. It was noted during the conversation that HGCMC will use the low hydraulic conductivity glacial till as a liner to the tails since this material acts well as a liner and since artesian pressures exist beneath the till which prevent downward migration of tails seepage waters.
2. A 14" pipe will be installed from the proposed wet well "A" to be installed at the Pond 6 low point that will allow free drainage of the whole tailings site post-closure to the marine outfall. Pipes from existing wet wells #2 and #3 in the old pile discharge to Pond 6 by gravity flow.
3. A new "dirty road" constructed around the outer perimeter of the pond will raise the berm height and a raised cutoff wall will be constructed within the berm. However, because seepage water will be pumped during operation and flow by gravity post-closure from Wet Well "A", it is not expected that there will be any head of seepage water against this cutoff wall.
4. Sand will be placed over the glacial till to protect it from damage by the placing and compaction of tails. This may occur late in 2008 or in early 2009, as may an initial placement of tailings over the sand.

An inspection of the site showed the following:

1. A new access road had been constructed to enable trucks with rock from Pit 5 to access the pond from the "clean" road without having to travel on a "dirty" road.
2. Trucks with sediment and organics do not now have to maneuver on "clean" roads.
3. The same trucks are used to move dirty and clean materials from/to Pond 6. Prior to changing from one mode to another (which occurs periodically rather than frequently) the trucks pass through the truck wash when exiting the tailings site prior to going to Pit 5.
4. Organics were being carefully removed from the underlying glacial till material with a bucket equipped with a flat blade.
5. If the weather cooperates, the remainder of the sediments and organics will be out of the pond within 2-3 weeks.

It was noted when driving past the tailings facility that, in accordance with required procedures, a contractor's pickup truck entered the truck wash as it left the tailings facility before entering the "clean" road system. No vehicles were observed driving from "dirty" roads to "clean" roads.

Water Treatment Plant

While in the Pond 6 area a walk-through of the new treatment plant was conducted. Logistics controls were being installed for equipment. Tanks were full of water. The plant commissioning may start within a week or so. Initially both treatment plants will be kept operational until the new plant is seen to operate without any significant issues. The new treatment plant will be able to process 2500 gpm. The mill plant can process 1000 gpm, so, if it is possible to move this amount of water out of the marine outfall pipe, the maximum discharge to hawk Inlet in a large storm event could reach a maximum of 3500 gpm.

Monitoring well 2S

Because the USFS had observed milky flows in the vicinity of this well from road runoff storm flows, the site was inspected to discuss the issue. This shallow well has indicated influence from tailings pollutants possibly from airborne dust or from surface water flows. Very fine material could penetrate down through organics to the well, which is at a depth of 8 feet. One suggestion offered up by the writer was to isolate the well by using an impermeable barrier that would penetrate into the organics at some distance from the well. However, there was debate as to whether the function of the well was to show the impacts of all activities or not. If so, isolation of the well from these surface waters would defeat this purpose. Comparing impacts to shallow well 2S with those at 1S, it may be possibly to determine whether impacts are from air or water-borne particles (or a combination of both at well 2S). Surface particle or soil analysis in the vicinity of the wells was also discussed, however Pete Condon thought the natural soil variability in the area may complicate interpretation of the results.

New 18" polyethylene pipe

DEC would like to see additional protection of this pipeline because spills of thousands of gallons of process or contaminated storm waters have occurred from polyethylene pipelines damaged by equipment while conducting maintenance activities. Eric Sundberg outlined how they intended to install the line as far away from the road as practical where feasible. Where there were restrictions in the right-of-way due to rock cuts they would look at re-location of culverts to diminish or eliminate the need to excavate sediments from ditches in those restricted areas. To better manage spill control, flow rate and volume measurement at the beginning and end of the pipe were discussed. However, there have been problems with maintaining a full pipe (e.g. even on up-gradient sections of pipe, possibly due to siphoning effects). A new flow measuring device has been installed at the treatment plant, but there continue to be problems with maintaining a full pipe at the head of the line.

Site 23 pad

The new pad was briefly visited. Placement of the 3-foot thick layer of Class 3 rock above the liner was in progress. Kerry Lear said that the proposal is to raise waste rock levels on each side of the pile. This will allow access from the sides to enable removal of older material before more recently placed material. Covering the material was also discussed. This will only be done to control moisture content. It will not be necessary to cover the materials to neutralize oxidation products; there will be 1% lime added and this will retard acid generation during the short term that the materials will be located at site 23. An acceptable plan has been submitted and ADEC is preparing a modification of the WMP for this pad. As in Item #1 under Pond 6

above, approval of all plans of this nature is needed prior to construction activities. The original plan was submitted to ADEC on April 16, 2008. There was an insufficient amount of time between the submission of the original plan and HGCMC's construction of the pad. Again, ADEC asks that construction plans be delivered farther in advance of construction activities.

"B" Road

New bales had been placed in ditches alongside the road. In some locations rock berms were located ahead of the bales. This enhances settlement in certain locations. Ditch cleaning had been conducted; this was questioned since one of the BMP's is to allow sediment to remain in ditches until it is really necessary to remove it so that plants can grow in the ditches to help trap fine particles. Kerry said the ditch crew was still learning what was required with these recommendations.

Action Items

1. Pete Condon will provide a report on the possible road silt interaction/effects at well 2S, suggestions for how best to analyze whether there may be an impact, possible mitigation methods to prevent further sediments being carried to the area, and possible comparison of wells 2S and 1S. The report will discuss the possibility of effects upon the wells from both wind-blown tailings and water-bourn fine sediment.
2. Eric Sundberg will provide information on how HGCMC intends to install the new 18" PE pipe alongside the "B" road, in particular at locations where rock cuts prohibit lateral separation of the pipe from the ditch adjacent to the road, and various mitigation methods used to reduce the likelihood of damage to the pipe by equipment with spills similar to those that have occurred historically.
3. Provide DEC a written report by June 30, 2008 on the actions taken to prevent contractor and other vehicles from carrying tails offsite when changing from travel on "dirty" roads to "clean" roads and on any actions taken to remove tracked tails from clean roads to prevent their escape or influence outside the permitted facility.
4. Submit Engineered plans well in advance of construction work to allow ADEC sufficient time to review the plans and discuss aspects of the design with HGCMC, if necessary.
5. If plan approval has not been received by HGCMC in a sufficiently timely manner, contact ADEC to inform us that work has to commence on the project and provide a date when the work will commence.

Photographs from the visit

Pond 6 excavation showing the new access road constructed to the right of the photograph to bring rock in from the "clean" road.

Pond 6 showing sediment and organics to be removed.

Pond 6 showing the clay glacial till layer with organics carefully scraped off.

New BMP's to capture sediments from the lined ditch at mile 1.2.

New BMP's to capture sediments from the lined ditch at mile 1.2.

Site 23 pad with sand and class 3 rock over synthetic liner.