

BUCKHORN BULLETIN

Okanogan Highlands Alliance

May 2009, Vol 3 No. 2



Mine Fined \$40k For Water Quality Violation

Ten days after issuing an administrative order determining that Crown Resources has violated their NPDES (National Pollutant Discharge Elimination Permit), on April 27, 2009 the Department of Ecology informed them that a civil penalty of \$40,000 was due within 30 days. While the computation for the penalty actually came to \$1,216,000 discretion was applied since it was Crown's first violation and the penalty is not intended to be punitive in nature. According to the recommendation for enforcement action, "Penalties are intended to change the behavior of the violator, penalize the violator for permit exceedances and act as a deterrent."

The enforcement recommendation goes on to say, "This was the first documented violation of this type at the Buckhorn Mine. The fact that this was a first time violation leads us to issue a penalty on the low end of penalty possibilities, but does not excuse the company from receiving a penalty because of the seriousness of the violation. We cannot downplay the seriousness of the violation committed by Crown. Failure of the required capture zone released a plume of contaminated ground water that has affected groundwater quality and surface water quality. The concentration, extent and ultimate impact of the plume on ground water and surface water is only partly documented from the existing monitoring network. Exceedances of groundwater or surface water quality criteria pose a risk to public health and the environment.

(See page 2 for details)

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Forest Service Proposes Approval for Additional Buckhorn Exploration

The USDA Forest Service (FS) proposes to approve exploration on National Forest land near the Buckhorn Mine. Crown Resources submitted a plan to have Echo Bay Exploration Inc. do drilling, geophysical and soil surveys. The FS has produced an Environmental Assessment for the explorations in which unavoidable impacts associated with the project are documented. The public comment period for the proposal is a limited. Comments must be postmarked by May 20th. (See suggested comment on Page 4)

COMMENTS NEEDED



Water Quality Violation and Penalty Details

Crown is ordered to implement actions in the Adaptive Management Plan (AMP) to reestablish the required capture zone and determine the extent of ground water contamination caused by the failure. To operate the mine all water, that is intercepted by mine workings, must be treated before being released into the environment. The discharge is regulated under the NPDES permit. Permit condition S1D requires that Crown maintain a groundwater capture zone around the mine operation including all underground workings, the surge pond, and all surface stockpiles of ore and development rock. The purpose of the capture zone is to ensure that ground water impacts from the mine are contained and routed to the treatment plant before water is discharged.

Ecology issued the violation for failure of the mine to establish and maintain the capture zone.

Further, the NPDES requires implementation of the AMP for Water Quality. The AMP requires Crown to annually prepare a water table map for low and high groundwater to demonstrate the extent and effectiveness of the capture zone and to evaluate the water level data to ensure compliance with permit conditions.

Monthly monitoring data shows water quality in down gradient ground water monitoring wells adjacent to the mine workings adversely impacted from mine seepage due to failure to maintain the capture zone. In a letter dated March 26, 2009, Ecology called the increases of certain water quality parameters to Crown's attention and gave Crown until April 15th to formulate a plan to respond to the trends. At the time of the letter Ecology had not been informed of the failure of the capture zone. After receiving a document prepared by Golder & Associates for the annual reporting on March 30, 2009, Ecology connected the dots between the capture zone and the degraded water quality. Ecology states that Crown should have notified them as early as June 2008 of the failure of the capture zone.

It Is Ordered That:

1. Within 75 days Crown must install additional dewatering wells and piezometers needed to create, maintain and demonstrate the extent of the ground water capture zone.
2. Upon installation of new wells and piezometers, Crown must monitor and report monthly.
3. Upon installation of new wells and piezometers, Crown must prepare and submit a monthly report that demonstrates the extent of the ground water capture zone and compliance with permit condition.
4. Crown must increase the frequency of ground water sampling from quarterly to monthly.
5. Crown must begin water quality sampling of the spring discharge into Gold Bowl Creek created by discharge from buried pipeline from the treatment plant.
6. Crown must within 45 days prepare a Trend Report, for Ecology's review and approval, that explains the increasing trends in water quality monitoring results from ground water, springs and seeps, and surface water during the period from January 2004 through March 2009. The report shall include recommendations for locating additional ground water quality monitoring wells and surface water monitoring sites to identify the extent of the release of contaminants.
7. Crown must within 60 days of approval of the Trend Report, install ground water monitoring wells identified in that report and begin monthly water quality sampling.

How Crown's Penalty Was Calculated

Clean Water Act violations can carry a maximum penalty of \$10,000 per violation per day. Ecology calculates Crown's failure to maintain a capture zone back to June 1 2008 or 310 days. Part of the calculation applies seven "gravity criteria" and a rating from 0-3 for responses of; No, Possibly, Probably, Definitely respectively.

Crown received No points for "Failure to obtain necessary permits" and one point each for possibly having "Public Health Risk" and "Economic Benefit from Noncompliance" and maximum points for definitely having "Environmental Damage", "Willful or Knowing Violation", "Unresponsive in Correcting Violation" and "Improper Operation or Maintenance"

When applied to the penalty Component chart the 14 points could bring a penalty of \$4,000 per day, but since it was Crown's first violation Ecology applied discretion and only fined them \$4,000 per month for the 10 month or \$40,000. (see story on page 1)

First Annual Reporting & Coordination Meeting

Purpose: To provide input towards the discussion of the adequacy of the monitoring plans, to monitor the hydrologic aspects of the Buckhorn Mine and mitigation, and to suggest modifications that might be needed for adaptive management.

Once a year the regulatory agencies get together with Crown/Kinross to discuss the adequacy of the mine's monitoring program. The annual reporting requirements are extensive.

After brief introductions including representatives from Washington State Department of Ecology, and Washington State Fish & Wildlife, the USDA Forest Service, Crown/Kinross, Golder Associates and OHA, OHA started the meeting off with an overview of our issues and concerns and a presentation by our consultant Ann Maest of Stratus Consulting.

OHA expressed grave concern over the failure of Crown/Kinross to submit reports required by the Hydrologic Monitoring Plan that are needed to understand the impacts of the mine. Crown/Kinross consultant, Golder submitted nine technical memos to the agencies that related to the Adaptive Management Plan. The memos were not integrated and were poorly organized. There was no table of contents or index and it was difficult to discern if requirements were met. We expressed our concern and frustration that there was not enough time to accomplish the objectives of the annual coordination meeting in the four hours allotted to it.

Some Highlights from OHA's Independent Review

Annual Reporting Requirements

- Hydrologic Monitoring Plan (HMP)
 - No annual reports received
- Adaptive Management Plan (AMP)
 - Memos not integrated; hard to discern if requirements are met
 - Memos are not reports
- Ecological and Aquatic Resources Management Plan
 - Annual reporting incomplete.

Baseline:

Conditions that existed before construction and mining

- Baseline water quality values are different for Kinross and Ecology
- Some baseline values are higher than current concentrations
- Baseline should be reevaluated so changes from baseline water quality conditions are apparent

Analytical Issues:

- Detection limits
 - Some numeric values not in database
 - Some metals detection limits are too high compared to baseline/standards
 - Required detection limits are not noted in permit
- Dissolved vs total measurements

OHA presented a series of graphs and maps showing:

- levels increasing from baseline of nitrate, sulfate, ammonia, and chloride
- location of increased levels

Missing Analysis

- On site precipitation data
- Continuous flow inflow/effluent data
- Surface water monitoring points
- SW-15: flow and water quality
- According to HMP, flow should be measured, but no frequency was set. Data are available from Kinross but not in monthly monitoring database.
- Groundwater - Depth to water at Infiltration Gallery should be reported as depth below ground surface (permit condition) rather than below casing.

Mine Inflow Water Quality: Measured vs. Predicted

- Southwest Zone: higher than predicted Sulfate, aluminum, arsenic, fluoride, lead, manganese, nitrate, and zinc
- Makes treatment more difficult than expected

Flow Evaluations

- Myers Creek augmentation study
- Adaptive management
 - Measured vs. predicted flows
 - Locations recommended for additional flow

Myers Creek Augmentation Study

- The objective of the work was to see if augmentation of the stream with Lost Creek well water would increase flow at the international border (SW-15).
- Flow at SW-15 was not monitored during the test.
- The augmentation study occurred just after a major storm, making results difficult to interpret.
- Study should be repeated under better weather conditions, and flow should be measured at SW-15.

Forest Service Proposes Approval of Additional Exploration

COMMENTS on Environmental Assessment

NEEDED by May 20, 2009

On the heels of a serious violation of the Buckhorn Mine discharge permit, the USDA Forest Service (FS) proposes to approve exploration, on National Forest lands, to determine the feasibility of possible expansion. The FS Environmental Assessment (EA) only analyses the exploration proposal submitted by Crown Resources to have Echo Bay Exploration Inc do drilling, geophysical and soil surveys, as if it is an isolated event, having nothing to do with the existing mine. OHA believes the FS and the company should show us that they can mine in a way that protects our land and water before expansion is considered.

In the EA the FS explains that the law of the land, requires them not only to approve but also to encourage and facilitate the exploration based on laws enacted in the 1800's. We assert that more recently laws have been enacted that set national policy for protecting the environment and ensure that information regarding decisions are available to officials and the public.

While the EA documents some of the unavoidable impacts that are associated with the proposal, they are relegated to a level of insignificance and the connection between the proposed exploration and the existing mine is ignored.

It is important that the FS hear from you!

Comments should be addressed to:
Forest Supervisor Rebecca Lockett Heath,
c/o District Ranger Mark Morris
1 West Winesap, Tonasket, WA 98855

by email:

Send as part of email, as pdf, Microsoft Word, or rich text:
comments_pacificnorthwest_okanogan_tonasket@fs.fed.us
subject: 2008 Buckhorn Exploration Project

Let Them hear loud and clear that:

- The EA fails to inform decision makers and the public about the extent of extensive mining claims that the proponent owns or controls in the area. This is important in understanding the foreseeable future cumulative impacts.
- The EA eliminates analysis of cumulative impacts based on a conclusion that it would not be significant. The FS can not bifurcate a project so that incremental parts are not significant. The FS must look side to side, beyond what the proponent submitted and look at what is occurring and what would reasonably be foreseeable.
- The EA fails to acknowledge that the purpose of the exploration is an expansion of the mine.
- The EA fails to document that Crown Resources and Echo Bay Exploration are both fully owned subsidiaries of Kinross Gold Corp.
- The EA fails to describe the existing environment. If the exploration proposal is a stand alone project as expressed in the EA, then the documentation must also stand alone. The public and decision makers can not be expected to wade through the extensive files for the mine to understand the environment where exploration is proposed.
- The EA fails to be clear on where the exploration water would come from. According to the EA, one possibility is mine water. Treated mine water has higher than background concentrations of various pollutants including sulfates, nitrates, ammonia and chloride. The EA fails to document the impacts of this proposed action.
- The EA states that the geophysical survey would entail 6 lines that total 13 miles of horizontal distance. Each layout of wire and receptors is about 3,000 feet in length. A quick mathematical calculation of 6 times 3,000 equals 18,000 feet or 3.4 miles. Where does the 13 miles come from? How many receptors?
- The EA fails to contain any documentation or references to support the conclusion that the large scale Induced Polarization is a noninvasive process.
- It is disingenuous for the FS in the EA to amend the Buckhorn Mine mitigation (WF-1) for wildlife road closure to open the road only to the invasive exploration activity while maintaining the public closure and also closing an additional 6.8 miles of the public's use of its estate as mitigation for the proponents proposal.
- The FS should require bonding for long term weed control.
- Any approval should be conditioned on full compliance with discharge permits for the mine.
- The EA fails to provide a realistic description of how the unavoidable impacts of the exploration on National Forest lands would impact the amenities we value such as natural beauty, natural sounds and starry nights.

OHA's Review Identifies Shortcomings

OHA's analysis after almost one year of operations was hindered by incomplete annual monitoring and reporting of data. The monthly monitoring of surface and ground water around the mine shows that specific constituents continue to rise above baseline although they remain below standards. We consider the lack of annual monitoring reports specific to each requirement of the Hydrologic Monitoring Plan a potential permit violation. OHA acknowledges that some of the required information may be included in the Adaptive Management Plan memos but, we do not believe this meets the permit requirements. Kinross has expressed a commitment to get it right.

Possible Violations

- No on-site meteorological data as required
- No reporting of flow data for SW-15 (Myers Creek at international border)
- Outfall 002 is discharging from pipe to rubble, not to stormwater pond as required
- Inflow/effluent - continuous flow data required but not reported

Other Issues

- Failure to complete conservation easements for mitigation properties
- Failure to submit annual reports in a timely fashion
- Failure to make a good faith effort to administer monitoring plan
 - Many surface water points monitored only from June-Sept
 - Some required data in AMP reports; no HMP reports
- Water use data statistics and photos missing
- Stream flow data missing
- Evaluation of predictions in groundwater flow model not adequate
- Reporting of additional monitoring (NPDES S3.D)
- Water level or flow are required by the HMP and implementation of HMP is required as a conditions of the NPDES – then flow should be required as part of the NPDES permit

Measured vs. Predicted Flow Issues

- Measured low flows (fall/winter) are often substantially lower than modeled baseflows
- FEFLOW model does not adequately simulate pre-mining conditions
- Need precipitation data from the mine and historic stream flows as input to model

Recommendations

- Fix weather station at Buckhorn Mountain
- Re-evaluate modeled baseflow with data from Buckhorn Mountain weather station and historic data
- Monitor and report flow at SW-4, SW-12, SW-13, SW-15
- Re-do Myers Creek augmentation evaluation with monitoring point at SW-15
- Re-evaluate baseline water quality for surface water and groundwater
- Analytical issues
- Detection limits
- Dissolved and total metals for surface water
- Continue to improve treatment to better remove sulfate, nitrate/ammonia, chloride; consider using less explosive
- DMRs and composite database should include flow monitoring and OHA settlement monitoring
- "Frozen" monitoring points should be photo-documented
- Provide water use data
- Need integrated annual reporting
- Mine site (groundwater, surface water, influent/effluent, dewatering wells)
- "Mitigations" (compensation projects)
- The next annual meeting should be a full day long and reporting submitted when due.

Locations for Additional Flow – Adaptive Management

- Monitor and report flow at SW-4 (Lower Gold Creek), SW-12 (Lower North Bolster Creek), or SW-13 (Lower South Bolster Creek) – not currently required
- Flow monitoring is required at upstream locations on Gold Creek (SW-10), North Bolster Creek (SW-11), and South Bolster Creek (SW-14)
- Depletions are predicted for SW-4, SW-12, and SW-13
- Monitoring at downstream locations provides better picture of dewatering effects
- Monitor and report flow at SW-15 (Myers Cr at International Border)

Failure To Report Sedimentation and Erosion

One might think that requirements concerning something as basic as the discharge from the treatment facility would be crystal clear (no pun intended) however while OHA has gathered more information regarding the erosion and slope instability incident we encountered on a site visit last Fall, there is still no report documenting the incident. After more than six months of persistence and discussion asking for documentation, we dredged up three entries referring to the incident but little explanation that would be useful for adaptive management.

1) In a facilities inspection report 10/30/08: Picture #5 [of the report] is supposed to show the reclamation work done in response to the slump below the surge pond berm. The slump was likely caused by rerouting the discharge from the treatment plant after the July inspection. The slump has been armored with riprap, and hay bails and the silt fence reinforcement provide mitigation.

2) A letter from Ecology 12/8/08 to Kinross asking for clarification of the point of discharge for Outfall 002.

3) Engineering Report (ER) Revision 12/29/08 Section 6.0 Wastewater Treatment and Discharge basically amends the ER to reflect the changes that had already been made.

Ecology's Position

The water quality permit official at the Department of Ecology has expressed that he is not inclined to stick with the letter of the permit. He has argued that although the discharge causing erosion is a violation of the water discharge permit, no report is needed since the problem has been cleaned up and that is their bottom line. OHA continues to express dissatisfaction with this approach, stating that not only is it important to future regulators to have an official record of violations and paper trail of why it happened and how it was addressed, a written report is required by the permit unless a waiver from reporting had been granted, which it was not.

Questions That Should Be Answered

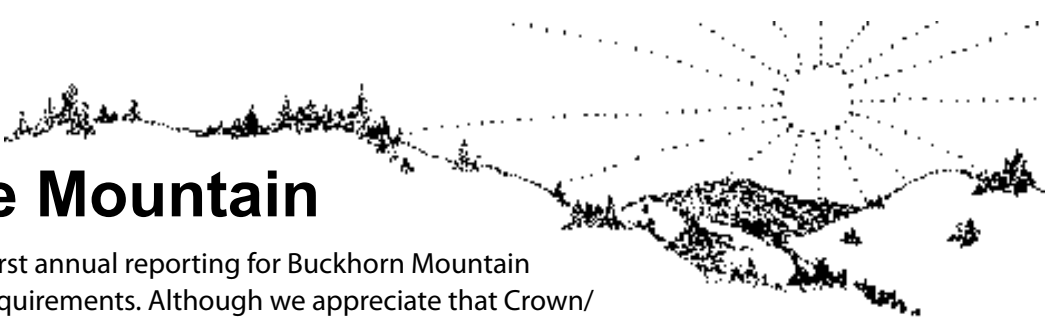
- 1) Why isn't there an incident report documenting a violation of the NPDES permit?
- 2) Why was the treated mine water discharged from a pipe down the hillside instead of infiltrating through the stormwater pond as the plans call for?
- 3) Why was the discharge pipe extended further down the hillside and to the surface?



Erosion and sediment in Gold Bowl Creek caused by the discharge of treated mine water.



Pipe that was discharging treated mine water over the rubble above Gold Bowl Creek



State of the Mountain

From OHA's perspective, the first annual reporting for Buckhorn Mountain Mine does not meet the permit requirements. Although we appreciate that Crown/Kinross has expressed the desire and commitment to get it right, at this point the company has not provided the thoughtful analysis of the monitoring data to know how the impacts of the mine compare to what was predicted. The company seems very efficient at extracting gold, we expect the same efficiency in complying with permit recording and reporting requirements.

One of the more consistent themes of this mine has been the transient nature of mine and agencies personnel. The latest company change, to our disappointment, is the departure of mine manager Lauren Roberts. His attention to detail and responsiveness has been exemplary. The company has expressed its willingness to continue the commitments Lauren has made towards making this mine a model of environmental stewardship.

New environmental manager Brent Bailey, is still mining through mountains of documents trying to understand the plans, permits and responsibilities. He has asked the Kinross corporate efficiency people to produce a comprehensive matrix or list of all the monitoring and reporting requirements from the various permits. The agencies also seem to be lacking a definitive list.

OHA's consultant Geochemist/hydrologist Ann Maest PhD presented an independent analysis of the mine's monitoring data emphasizing the disturbing trends of certain pollutants with the caveat that much of the required data has not been reported. The agencies expressed similar concerns about the missing data and expressed concern over increases in some pollutants at the mine.

OHA is still working to develop a program to help landowners protect and improve streams, wetlands and other water resources for present and future generations.

Your support and encouragement over these many years has made our continued advocacy possible. Thank you again.

Steadfastly, 

OHA Membership Meeting & Potluck
- Sunday, June 7, 2009 - 3pm -

Location To Be Announced
Call for Directions - 509-485-3361

Your annual membership dues support our conservation efforts. Thank you!

____ I want to be a member of OHA at: ____ \$25. ____ \$50. ____ \$100. ____ other

____ I would like to receive email alerts and other information about mining.

____ Send me a 14x14 tote bag ____ denim ____ black for \$15 with
____ wetland picture ____ Pure Water Motto

____ Send me an apron for \$20. with the ____ wetland picture ____ Pure Water Motto

____ Send me a T-shirt with the picture to the right for \$15. size: ____ XL ____ L ____ M

____ Send me a T-shirt with the original design for \$15. size: ____ XL ____ L ____ M



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This edition of OHA's newsletter
written and edited by:
David & Hanna Kliegman

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kliegoha@televar.com.

For more information see:
www.okanoganhighlands.org

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Okanogan Highlands Wetland and Stream Restoration Mini-Grant Program

Utilizing mitigation funds from the settlement agreement, OHA is developing a wetland and stream restoration mini-grant program to restore and enhance aquatic resources in the Okanogan Highlands.

Our goal for the Wetland Restoration Mini-grant Program is to support the capacity of landowners, educational institutions and conservation organizations to understand, restore, enhance or improve the ecological health of streams and wetlands in the Okanogan Highlands. We envision collaboration with agencies, groups, and landowners that have similar restoration goals.

While the mini-grant program is not expected to be initiated until later this year, we welcome letters of interest and inquiries. They can be sent to david@okanoganhighlands.org.



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“The more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction.”

-Rachel Carson