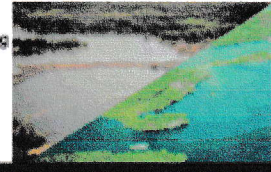




Schist Lake, Manitoba, before and after reclamation, Hudson Bay Mining and Smelting Co., Limited



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September 8, 2006

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3.0 CASE STUDIES

3.3 Mount Washington Mine, British Columbia

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3.3.1 Brief History ▲

The Mount Washington Mine, on Vancouver Island near the community of Courtenay, BC, was a small, open-pit copper mine that began operations in 1964. Mt. Washington Copper and Cumberland Mining Company, in a joint venture, leased the base-metal rights from the Esquimalt and Nanaimo (E&N) Railway and the precious metal rights from the province.

The mine operated from 1964 until the fall of 1966. Ore was milled until 1967,

after which time the company went into receivership and the site was abandoned.²⁵ Today, Better Resources owns the precious metal rights, TimberWest has surface rights, and Canadian Pacific Railway has the subsurface rights.

Large piles of ore and waste rock were left on the mine site, and mill tailings were left at the mill site 4 km southeast of the mine site. The pyrite-bearing ore and sulphidic waste rock, left exposed to air and water, began generating acid mine drainage (AMD) and leached dissolved copper into Pyrrhotite, McKay, and Murex Creeks, all tributaries to the Tsolum River. The dissolved copper was then carried downstream, to the fish spawning and rearing grounds of the lower Tsolum River.²⁶ The problem of AMD was exacerbated in 1979 when Esso Resources Limited added sulphuric acid and iron-oxidizing bacteria to the remaining ore to try to extract metals. The high levels of copper, however, were not discovered until water sampling was done in 1985.

The Tsolum River historically had large salmon runs. In the 1950s, runs of 100 000 pink salmon and over 7500 coho were reported, as well as healthy populations of cutthroat trout, chum and steelhead salmon.²⁷ Since that time, several factors have affected the river and its aquatic life: development and logging along the banks of the Tsolum increased sedimentation in the river and its tributaries; the

removal of gravel from the streambed for an airstrip at CFB Comox destroyed fish habitat; and water removal for irrigation for agriculture affected water flows and temperatures.²⁸

Although the community was aware of the decline of fish in the river, it wasn't until 1982, when a pilot hatchery released 2.5 million pink fry into the Tsolum River and none returned, that the seriousness of the problem was discovered. Subsequent water monitoring in 1985 revealed high copper levels. The source of the contamination was the Mount Washington mine, which had been abandoned almost 20 years earlier.

While the other factors (e.g., logging and gravel removal) affected conditions in the watershed, the high levels of copper directly affected fish. The maximum recommended concentration of copper in water is 7 parts per billion (ppb)²⁹— concentrations above this level begin to be toxic to fish. The range in the Tsolum River below Murex Creek was between 17 and 110 ppb.³⁰ Sampling directly below the mine site, in Pyrrhotite Creek, showed concentrations as high as 17 000 ppb.³¹

The Ministry of Environment, Lands and Parks estimated that for the Tsolum River to meet the water quality objectives stated above during the spring freshet, the reclamation should reduce copper loading from the mine site by 95%.³²



3.3.2 Nature and Level of Community Involvement

Several community members were concerned about watershed issues in the Comox Valley, particularly the loss of the fishery in the Tsolum River. From the time of the discovery of high copper levels in 1985, through to 1997, the local branch of the Steelhead Society of BC (Comox Valley Chapter) began to look at the reclamation of the mine site and the enhancement of the Tsolum River as a major project.³³ A campaign of letter writing, media outreach, and working with federal and provincial ministries brought community attention to the mine problem and helped to bring about partial remediation for the mine site. Between 1988 and 1992, the Ministry of Energy, Mines and Petroleum Resources put \$1.5 million into remediation at the site. A till cover was placed over waste rock in the East dump and lower North pit. The purpose of this till cover was to prevent the infiltration of oxygen and water to the waste rock. Other projects included application and testing of an experimental asphalt emulsion/geotextile cover; and, calcium hydroxide was applied to the pit walls and floor to attempt to raise the pH and reduce metal loading. Water monitoring results from 1993 to 1996, however, revealed no reduction in copper levels, and the reclamation efforts

were considered to be a failure at that time.

Yet the increased profile of the watershed concerns led to a symposium in 1992 called "Water: Lifestream of the Comox Valley" (which was organized with the assistance of the Salmonid Enhancement Task Group). A report produced following this symposium stated as one of its key recommendations:

To create the community's desired organization, group of bodies or system that includes a full range of water and related land use management activities involving public participation, education, planning, policy formulation, regulation, monitoring, inventory and advocacy. The organizational details should be undertaken after widespread community discussion has approved the concept. The details should be designed by a broad-based interim committee using the options presented in this report and other input.³⁴

As illustrated by this recommendation, there was a desire for community involvement and participation in decisions involving the area's watershed. Subsequently, the Comox Valley Watershed Assembly was formed with the broad objective "to restore and protect water quality, and fish and aquatic habitats."³⁵

The Assembly ran as a monthly public meeting (and still does), where any citizen could present a watershed issue with which they were concerned. Focus groups would be formed to discuss concerns, and through "co-operative problem-solving" solutions would be developed.

In 1995, a focus group called the "Tsolum Team" was formed in response to concerns raised about the health of the Tsolum River.

3.3.2.1 Formation of the Tsolum River Task Force (TRTF)

The Tsolum Team held a "Healing the Tsolum" workshop in April 1997, which was attended by over 200 local residents. The next day, the Tsolum River Task Force was formed with the goal of restoring the Tsolum River to historic levels of health and productivity. The Task Force initially approached the provincial Minister of Employment and Investment and the federal Minister of Environment, both of who encouraged TRTF to apply to Fisheries Renewal BC and the Environment Youth team for funding. In the summer of that year, the Department of Fisheries and Oceans gave the Task Force two years worth of funding (\$270,000) for the Tsolum River Restoration Project, which was to deal specifically with fish habitat restoration on the Tsolum. Since the funding was from DFO, it was targeted specifically at activities and research falling under DFO's mandate, but the TRTF was

free to find other funding for projects outside of that mandate. Other contributors to the TRTF were: Environment Canada; Fisheries Renewal BC, BC Ministry of Energy and Mines, BC Ministry of Environment Lands and Parks, Youth Options BC, Regional District of Comox-Strathcona Area C, BC Hydro, and Comox Valley Commercial Fishermen.

3.3.2.2 Task Force Membership

The TRTF was a multi-stakeholder advisory group made up of representatives from various groups and agencies. Stakeholders identified were: various government agencies (provincial: Ministry of Employment and Investment – Energy and Minerals Division, and Ministry of Environment, Lands and Parks (MELP); federal: Department of Fisheries and Oceans, and Environment Canada); fishing industry (Pacific Trollers Association); forest industry (TimberWest and the International Woodworkers of America); mining industry (Better Resources Ltd., Canadian Pacific Railway, North Island Exploration, Westmin Resources); First Nations (Kwakiutl Territorial Fisheries Commission); local representatives (Comox Valley Naturalists Society, Comox Valley Watershed Assembly, Courtenay Fish and Game Club, Comox Valley Project Watershed Society, Farmers Institute, Merville Area Residents and Ratepayers

Association, Oyster River Watershed Management Committee, and Steelhead Society); and elected representatives (MP, MLA, and Comox Strathcona Regional District Area C Director).

No groups identified were excluded from the process, and in the Terms of Reference of the Task Force (see below), it was stated that any person or organization could apply to the Task Force Steering Committee for membership on the Task Force. The First Nation committee involved, Kwakiutl Territorial Fisheries Commission, eventually quit attending Task Force meetings. This was not because of any conflict, but rather because the Fisheries Commission moved north on Vancouver Island.

3.3.2.3 Task Force Structure, Funding and Protocols

On November 7, 1997, the Tsolum River Task Force adopted the Terms of Reference. TRTF's mission and purpose was defined as "restoring the Tsolum River watershed to historic levels of health and productivity." ³⁶

TRTF formed a steering committee and six working groups. Representatives from each working group would sit on the steering committee and attend monthly meetings. The six working groups, formed around particular areas of concern, would provide scientific and technical advice to the steering committee, and monitor the progress of restoration

projects. The six working groups were:³⁷

- Stock Enhancement
- Acid Mine Drainage and Mine Reclamation
- Habitat Restoration and Assessment
- Flows and Storage
- Water Monitoring
- Media and Community Relations

As stated above, the Task Force was open to the general public insofar as any community member could ask to be involved. People from the general public were asked to participate, and the working groups facilitated this process, as it was easier to get people involved in the more focused working groups.

The Task Force's funding allowed for two paid positions: one full-time coordinator, and one half-time administrative staff person. The coordinator managed restoration projects, supervised project staff, assisted the working groups in developing project plans, and reported to the Steering Committee on the progress of restoration projects. The coordinator also produced the final report of the Task Force, entitled *State of the Tsolum River: A Comprehensive Report on Work Completed by the Tsolum River Task Force, April 1997-March 1999*.

The administrative staff person was responsible for setting up meetings, keeping Task Force members informed of meetings and other administrative information,

and typing up and distributing minutes. While members' time for meetings was donated and only some travel expenses were covered, it was the paid staff who made the meetings possible (e.g., did all the set up, arranged meetings, and printed up and distributed minutes). Task Force members reported this as being crucial not only to the effectiveness of the committee but also to its wider profile in the community. Staff made sure minutes were available on the TRTF web site, and that media were informed of TRTF's activities.

The TRTF adopted some aspects of the Comox Valley Watershed Assembly's organizational model. Decisions were to be made by consensus whenever possible, with attempts being made to meet all Task Force members' interests and concerns. If consensus could not be achieved, a vote on any issue would require the approval of two-thirds of those members present. The Steering Committee would meet, on average, once a month, though the working groups and the Steering Committee would meet more often as the projects dictated. Working groups would bring forward ideas for projects to be approved by the Steering Committee.

Task Force members were generally very satisfied with how the meetings were run. They had access to experts and legal counsel, and most felt they were there to learn from each other. Despite the

different areas of expertise on the Task Force, no one interviewed felt silenced or discouraged from speaking at the meetings. Task Force members who felt they held minority views still admitted to being given the opportunity to express their opinions. The success was due in part to professional facilitation at most of the meetings. TRTF was set up to represent a wide array of views and perspectives, and members of the Task Force understood this. Having a facilitator/mediator run the meeting helped this process. All members of the Task Force reported that the structure allowed for conflict to be dealt with fairly.

Members of the TRTF reported that they felt they all had the same goal, and this focus helped when differences arose. The Task Force was "the best community action group" they had. Members felt that they learned together, and that the multi-disciplinary nature of the Task Force accurately reflected all of the issues in this "watershed problem."

With the various government agencies on the Task Force, the community was kept up-to-date on water monitoring information and was given information on technical reports regarding possible mine site remediation.

The TRTF achieved a great deal in the two years it operated, particularly with respect to habitat restoration, stock enhancement, mapping, water monitoring, and watershed management. Late in 1997, Project

Watershed provided Streamkeepers training to interested local residents, and the Tsolum River Streamkeepers Group was formed. These volunteers worked to protect fish habitat in the Tsolum River watershed. In 1998, the Task Force lobbied to have Tsolum and the Puntledge Rivers declared BC's most endangered rivers, raising the profile of TRTF's efforts in the broader community.



3.3.2.4 Process Stalls

With respect to mine site remediation, however, the process has been far less effective. Water monitoring in 1998 revealed a 50% reduction in copper levels. Some felt this was the result of the remediation work that occurred on the mine site from 1988 to 1992, though this has not been conclusively proven. Despite this good news, the Task Force had not come to any decisions about further remediation work at the mine site. SRK Consultants had been hired to look at mine site remediation, but there was some conflict between MELP and Environment Canada on how to proceed. In 1999, TimberWest began looking at using wetlands to treat contaminated water, but no action has been taken.

While having all stakeholders, including the government, on the Task Force was very useful for the sharing of information and ideas about possible solutions, the process began to slow down when no

government agency or industry would take responsibility and take action. According to some TRTF members, the process "ground to a halt." It is unclear whether this is because there was no political will within government, no funding to cover the cost, or whether rumours of legal action taken by Environment Canada against the site owners were true.

The level of frustration was high. Part of the problem may be that community members believed government was at the table with a view to taking some action. Expectations were raised that something would be done. MELP maintained they were there only in an advisory capacity, but this may not have been understood by members of the Task Force. Some government members felt the community stopped pressuring the Ministers for action once the Task Force was meeting – if this was the case, it may indicate that the community members felt their desires for action were being relayed to the decision-makers via the government members on the TRTF.

Many community members felt that the inaction after all the work of the TRTF was a "breach of public trust." Members had enthusiastically put in all this time, but in the end, nothing was done. The momentum was lost and the community was left with a huge sense of disappointment and frustration. Many felt the provincial government failed

by not coming up with the money to do something.

When the Task Force was operating, there had been some optimism about finding a solution and implementing a plan. But by the end of the TRTF, it seemed to be "spinning its wheels," especially with respect to the mine site remediation. Despite the fact that copper levels have decreased and that some habitat has been restored, there are still copper "spikes," i.e., occasional releases of large amounts of copper to the river, which will prevent the full return of salmon to the Tsolum. Remediating the mine site, therefore, is crucial to restoring the Tsolum River.

The community at large was generally supportive of the Task Force. When it was operating, members said they couldn't go anywhere in the valley and not be asked about what was happening with the Task Force. In terms of capacity building within the community, the Task Force was an extremely useful tool in bringing together all the interested groups. These channels of communication can be used for other problems that arise in the community as well.

Some members felt that leadership was lacking, especially when it came to implementing a plan. One member complained that "total democracy" doesn't work because no one takes leadership and gets things going. While most of the committee disagreed with this and thought that the decision by consensus was

a good method, there was widespread frustration with the lack of action.

One government Task Force member felt the barriers to the remediation were the complexity of the question, and the question of who would do the work. It was felt that the government or industry should be responsible, but acknowledged that the community got involved precisely because nothing was being done. It was also believed that funding for such a Task Force was essential, but that this funding shouldn't be targeted and under the mandate of one government agency. While they worked around it, the DFO mandate did limit the focus of the Task Force. More importantly, it needed to be decided who or what agency would be ultimately responsible for the site, and from where the funds for implementing a plan would come.



3.3.3 Current Status

When the Tsolum River Task Force's funding ran out, the Tsolum River Restoration Society (TRRS) was formed (in the spring of 1999) to continue the work. The society's funding is not as stable as the TRTF, and tends to be granted on a project-to-project basis. While there is one paid coordinator, the society does not have the same level of funding and relies heavily on volunteer support. As with many non-governmental organizations,

much time is put into the acquisition of funding, and this diminishes the amount of work done to further the goals of the society.

The Tsolum River Restoration Society does not run the same type of multi-stakeholder meetings as the Task Force, although through the community capacity that was built through the TRTF's many of the established communication channels are still used.

The Society's projects include fish counting, enhancement projects, and water storage and augmentation. The funding cuts in the province have affected TRRS and its ability to carry out its projects. The loss of funding for Fisheries Renewal BC and Urban Salmon Habitat Programs (usHP) has left many of the watershed stewardship community groups without funding to continue habitat restoration. Federal funding has also been cut (e.g., Habitat Restoration and Salmonid Enhancement and Public involvement Programs), and as a result many fish stocking programs now have to be done without funding.

TRRS works with the Ministry of Water, Land and Air Protection (previously MELP) and Environment Canada on water quality monitoring of the Tsolum, but again, funding for the monitoring program is an on-going concern. In 2001, TRRS paid half of the yearly monitoring costs (which totaled \$8,800) and MELP and Environment Canada paid the other half.

The combination of funding shortages, volunteer burn-out, and frustration at the lack of action has meant that the society is less effective than the Task Force, particularly with respect to communicating to the larger community. Community members, particularly those involved with the Task Force, are "disheartened, frustrated, disappointed, and disgruntled."

Although the Society focuses on habitat restoration, it is willing and eager to help with the mine site remediation if action is taken by industry or government. Since the Tsolum River Task Force ended, the community has been waiting to see if any action will be taken at the mine site.

Environment Canada has declined to comment on the Mt. Washington mine, as "it is the subject of an Environment Canada Inspector's Directive." Some community members have heard that Environment Canada is using fisheries legislation to force work to be done by TimberWest and CPR. The community is unclear as to what is happening with this apparent legal action.



3.3.4 Lessons Learned

As a Task Force, the TRTF was very successful as it brought together all the stakeholders and allowed for a discussion of issues to

take place. It enabled different community members and organizations to share information and to present their concerns about the Tsolum River. Four key reasons for its success that were repeatedly noted by Task Force members were:

- 1) Having paid staff to keep the administrative tasks done (setting up meetings, communicating with members, distributing minutes, and communicating with wider community) was crucial to making the Task Force work. It took the burden off of the Task Force members and lessened the problem of "volunteer burn-out."
- 2) In terms of building trust, it is important to get community involved and all parties communicating early on. Setting the priorities at the beginning, and having the common goal "to restore the Tsolum River to historic levels of health and productivity" kept the Task

Force focused.

3) using professional facilitators at meetings so everyone had a chance to speak and that all interests were represented greatly helped the meetings. This is especially important when there is a wide range of interests represented at the table and the issues are complex.

4) Working groups can be an effective way to run a Task Force if there are multiple and complex issues involved. A member from each working group sits on the Steering Committee and this reduces the length and depth of detail discussed at Steering Committee meetings.

Funding is crucial, and it should not be tightly targeted especially when the issue is complex. In this case, DFO is to be credited for setting up the Task Force; the funding was necessarily tied to the mandate of the agency. If

possible, however, joint funding or funding from a more broadly based agency should be made available that allows for assessment and implementation of complex remediation projects.

It is important to have community involvement early on so that they understand the complexity involved in the decision-making. It is important to have access to technical and legal experts, and for everyone on the Task Force to be committed to understanding one another. Yet it must not be used as a stalling tactic, keeping industry or government from taking action.

It is important to have government agencies and industry represented at the table to ensure information is shared and that the community understands the complexity of the issues and decisions to be made. It should be made clear in what capacity the government and other members are on the Task Force so expectations are not unrealistically raised. If jurisdiction is unclear, this should be discussed at the onset. Community members may place unrealistic expectations on individual bureaucrats at the table who do not have the power to make the decisions the community is hoping for.

The general public, including community groups, needs to recognize, especially when it relates to government funding, that bureaucrats cannot make arbitrary decisions to allocate public funds. The allocation of

public funds and/or acknowledging responsibility for the reclamation of Orphaned/Abandoned Mines by government is often a political decision. If expectations get raised but no action ends up being taken, frustration levels and burn-out can heighten and leave committee members disheartened and frustrated.

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