

ALASKA LEGISLATURE COMMITTEE FILES 1999-2000 8672

9977 HOUSE RESOURCES

## **BRITISH COLUMBIA RESPONSE TO ALASKA DEC WATER QUALITY CONCERNS**

### **ITEM 1**

#### **“Monitoring plans for baseline data collection”**

Monitoring of baseline water quality has already commenced through initiation of an Environmental Effects Monitoring plan in the spring of 1998 as per the recommendations of the Project Committee Report. This program includes monitoring of all infrastructure components, including the access road, as well as potential discharge sites and is the responsibility of Redfern Resources Ltd.. A report on the first year of monitoring results is in preparation and will be sent to DEC in three to four weeks. Further modifications are anticipated as data are interpreted and the program will continue through 1999 in advance of actual construction.

#### **“Baseline water quality data (spring is a good time to sample)”**

Baseline water quality sampling was initiated in May of 1994 and has been collected on a continuing basis since that time. Data for years 1994 through early 1997 were presented in the Project Report and made available to DEC and other Alaskan Agencies in July of 1997. Further sampling and data acquisition continued through 1997 and has been supplanted by the EEM program, referenced above, in 1998.

#### **“Representative (predicted) effluent composition”**

Representative (predicted) effluent composition was presented in the Project Report in 1997. This was obtained from analyses and pilot tests of process water from process evaluation studies. These waters were treated in the proposed water treatment plant with excellent results. Tests were also made of mixed process water and run-of-mine water with similar results. Predicted mixing zone calculations were presented in the Project Report available to DEC with further detailed work to be presented as part of the future Discharge Permit application under the BC *Waste Management Act* to be submitted prior to construction.

#### **“Toxicity testing (pilot testing for acute & chronic toxicity with representative effluent samples)”**

Toxicity testing of representative effluent for acute toxicity was presented in the Project Report (July, 1997) with LC96 100% survival for rainbow trout and *daphnia*. Chronic toxicity testing is pending.

#### **“Risk evaluation, based on representative effluent and receiving environment, including biota”**

Risk evaluation is pending completion of EEM program and will be included in the application for the Discharge Permit.

**“Details and effectiveness of the treatment process, including how cyanide will be treated”**

Treatment process details and effectiveness were described in the Project Report (op cit). This work included analysis of effective reduction of all metals and compounds of interest including cyanide.

**“Mixing zone prediction, including adequate water flow throughout the operation seasons and effects on biota”**

Mixing zone prediction was done in a preliminary fashion in the Project Report with more detailed analysis pending for the Discharge Permit application.

**“Impacts from moving the discharge pipe to a second stream channel (strategy if experiencing low flow at the initial point of discharge) ... requires collection of additional baseline flow and habitat data”**

Analysis of effects of moving the discharge site will be included in the Discharge Permit application.

**“Water quality monitoring and management plans”**

Water quality monitoring beyond the current EEM baseline program will be stipulated under the future Discharge Permit in order to track potential effects in the receiving environment.

**“Groundwater quality and monitoring data for tailings disposal considerations”**

Groundwater quality and monitoring for future tailings facility was presented in preliminary fashion in the Project Report based on measurements and samples conducted in the period 1995 to 1997. Further sampling was specifically recommended in the Project Committee Report and agreed to by Redfern as a commitment in the Certificate. This has been implemented in the ongoing EEM sampling program discussed above.

**“Plans for control of the leachate from all the contaminated waste rock piles”**

Control of leachate from all waste storage is an integral part of the current mine design and is discussed in the Project Report. All potentially acid generating waste (based on very conservative prediction methods) will be segregated on a lined pad with collection and treatment of run-off and leachate. This material is

planned to be returned to underground storage in the empty stopes as partial backfill for permanent safe storage on closure.

**“Design plans for closure and reclamation”**

Full details of the design, collection and treatment options for this material will be integrated in the pending BC *Mines Act* permit applications. Design plans for closure and reclamation were covered in concept in the Project Report. Details will be provided in the Reclamation Permit application prior to construction

**ITEM 2**

N/A

**ITEM 3**

**GENERAL**

**“The Canadian approach to make project changes after starting operations causes us some concerns.”**

**Response**

The BC/Canadian approach is not structured so as to necessitate design changes during permitting nor after start-up. This impression may be the result of our responses to the many “what if” questions posed during the review and subsequent technical dialog. What we, as regulators, must do is cover off the inevitable risk associated with some project components with a requirement for contingencies which may involve changes to some systems. This is not believed to be very different from other jurisdictions.

**SPECIFIC BULLETS**

**“Unless they perform baseline studies and gather data for potential project changes before the project starts, how will they have necessary information for the redesign of the project?”**

**Response**

Again, we are not anticipating a wholesale redesign of the project. The geological, engineering and environmental review work completed to date has adjusted, refined and focused the project to its present scope. We agree, however, that any necessary contingencies must be covered by an appropriate baseline data set. Ongoing data gathering as referenced in Item 1 will fill this need.

**“Will there be assurances that during the initial startup there will be no discharges that could wipe out the habitat?”**

**Response**

As has been stated several times previously during the review, in the project report, during the November, 2000 Vancouver meeting and in the follow-up correspondence, there will be no acutely toxic discharges allowed. None are anticipated. Contingencies will be in place to deal with upset conditions should they occur. The assurances associated with this stem from: a robust design as presented and tested in the project report supporting documentation; intensive monitoring; contingencies to cover any remaining risk and ultimately an effective enforcement deterrent to non-compliances.

**“If changes are needed, it will be difficult to shut a project down for redesign and construction changes once project operations have started.”**

**Response**

The project utilizes standard treatment technologies which have proven reliable at other mining operations. Any changes are anticipated to be minor. However, if conditions develop where the discharges do not meet the legislated permit limits, and there is no defining supporting information available to us (and our referral agencies including Alaska DEC in this case) in the form of a permit amendment application, the continued discharge will be in non-compliance with the permit under the *Waste Management Act*. Each day in violation of the permit constitutes a separate count and is subject to penalties up to \$1,000,000 per day.

**Testimony of Don Weir, President of the  
TAKU WILDERNESS ASSOCIATION  
before the Alaska State Legislature on  
Senate Concurrent Resolution No. 7**

3-26-99

I am the president of the Taku Wilderness Association in Atlin, BC. We are a grassroots organization who oppose the reactivation of the Tulsequah Chief mine in the Taku watershed. We have serious reservations about the mine site, the location of the tailings pond, and other technical issues that we feel could lead to problems in the long term. Our main concern, however, is with the creation of a 100-mile road into the Taku. Aside from wilderness values and the closing off of other economic opportunities, the main issue is the lack of proper long-term planning. To put it bluntly, there is NO PLAN.

This is not 1950, and to move into a large tract of essentially untouched land without a clear idea of what is in the best long-term interest of all the stakeholders from both sides of the border is foolhardy and dangerously irresponsible. Efforts are ongoing at the present time by the Taku River Tlingit First Nation to create a long-term management plan for the region, and this proposal by Redfern Resources and the provincial government to open up the area circumvents these local initiatives.

From the point of view of other stakeholders, the key question should be whether the assessment of this process properly addressed the short and long-term impacts of this project. Another question is whether the mitigation measures created by the provincial government to cover up flaws in Redfern's Project Report will adequately deal with long-term impacts. The best way to make this determination is to look at British Columbia's track record on other mining projects. The record does not provide much assurance.

We have been told by numerous government officials that due to severe budgetary cutbacks it will be difficult to properly investigate and remedy the inevitable problems that will come about from this project. Should stakeholders from both sides of the border trust that the BC government will take care of their interests? It's Alaska's call on that one, but to make an informed decision you need to be aware of the BC government's record.

Numerous lawsuits have been filed against the provincial government because of inadequate regulatory standards on past projects. The following will give you an idea of some of the problems with the environmental assessment of the Huckleberry and Kemess mines.

In the past, APPROVALS AND PERMITS have been ISSUED BY THE PROVINCIAL GOVERNMENT DESPITE A DEFICIENCY OF INFORMATION.

During the Kemess environmental assessment, the company's mill site selection was deemed geotechnically acceptable on the basis of three boreholes. Not surprisingly, the

assessment turned out to be erroneous-the bedrock was not competent enough to support the mill. By the time this was revealed, however, the province had already granted a Project Approval Certificate.

- The province issued pre-production construction permits for the mine and mill site with woefully inadequate information. A proper evaluation of the newly proposed mill site had not been conducted by the province; the federal assessment of the project was not yet completed; the Fisheries Act authorization for permission to destroy 17 km of fish-bearing stream had not yet been granted by the federal Department of Fisheries and Oceans; there was no materials handling plan, sediment control plan, or effluent permits ;

- After a series of disastrous sedimentation problems leading to an eventual Pollution Abatement Order in July of 1997, it was acknowledged by provincial government that the problems were due, in part, to the fact that the government did not have guidelines for sedimentation control during the construction phase, nor did they require advanced approval of sedimentation or materials handling plans.

✓ **THE KEMESS and HUCKLEBERRY PROJECTS HIGHLIGHT THE INABILITY OF THE GOVERNMENT TO ENSURE COMPLIANCE WITH REGULATIONS and CONDITIONS SET OUT IN THE EA CERTIFICATES, PERMITS AND AUTHORIZATIONS.**

The following is a condensed list of violations at the Kemess mine site:

- July 4 1997 - creek diversion is a **VIOLATION OF** the Water Act; sediment levels were in **VIOLATION OF** the Project Approval Certificate, Mines Act permit, and the Fisheries Act.

- July 16 1997 - a **POLLUTION ABATEMENT ORDER** was issued under the Waste Management Act, because construction activities were causing elevated levels of total suspended solids in Kemess Creek and its tributaries.

- as of Sept. 12 1997, the company had still **FAILED TO MEET REQUIREMENTS** of the July 16 pollution abatement order

- February 9, 1999 - **FAILURE TO COMPLY** with a January 29, 1999 order to raise the height of the tailings dam. A letter from the Ministry of Energy and Mines told the company that any delay in meeting the schedule would create a hazard, i.e., breaching of the dam and flooding of the valley downstream, would place the dam, workers and downstream environment at serious risk.

There were similar violations at the HUCKLEBERRY mine site:

- August 1996 - **FAILURE TO PRODUCE** water quality data; **LACK OF** Sediment Control Plan, even though it was a permit requirement;

- Sept. 1996- the Sediment Control Plan was submitted, but it was NOT ADHERED TO.
- June, 1997 - the company was OUT OF COMPLIANCE with Mines Act Permit because they began excavating East Zone Pit prior to submitting required Acid Rock Drainage information; many of the required monitoring reports were submitted LATE; in VIOLATION OF its Mines Act permit, the company constructed roads and a saddle dam out of potentially acid-generating materials!!

Finally, it appears that the tools used by the province to ensure environmental protection at mines sites are being traded away. Last month, the BC government (Job Protection Commission) waived their right to increase the reclamation bond payments for two years as part of a bailout package for the Huckleberry Mine. In so doing, the province accepted the possibility that public funds would have to be used to fund some of the mine's reclamation costs. This use of environmental securities as an economic and political negotiating tool represents a major breach of the public trust in terms of protection against environmental liability posed by poorly financed junior mining companies.

A more detailed written analysis of the problems with the BC assessment and regulation of Kemess and Huckleberry mines is available. It highlights additional potential problems that may be encountered at the Tulsequah Chief mine if the same lax regulations and monitoring occur with this controversial project.

The final question that I want to put forth is whether or not an IJC will address all of the concerns that residents on both sides of the border have on this project. I don't have the answer to that question. But it's clear that a more thorough analysis of the controversial and flawed BC environmental assessment process that gave approval to the Tulsequah Chief project must come under closer scrutiny.

The judicial review initiated by the Taku River Tlingit First Nation will hopefully elucidate the way the province interfered with a proper assessment on this project. We ask that you reserve judgment on this resolution until the facts come out on this court case. There is too much at stake to do anything less.

Thank you for giving me the opportunity to speak.

Don Weir  
Taku Wilderness Association

## **Lessons from the Environmental Assessment process of the South Kemess Copper/Gold Mining Project**

The Kemess South Project is an excellent case study of the consequences of ineffective environmental assessment, certification, permitting, enforcement and monitoring.

### **1. PROCESS FLAWS**

#### **1.1 DECISIONS BASED ON LACK OF ADEQUATE INFORMATION**

· During the EA process, the Project Committee accepted the company's selection for a mill site, despite the fact that the geotechnical adequacy of the site was determined on the basis of three boreholes. Not surprisingly, the assessment made on the basis of three boreholes turned out to be erroneous-the bedrock was not competent enough to support the mill. This was not, however, determined until after the company had received their Project Approval Certificate. If more detailed technical information had been provided, the appropriate mill site could have been selected DURING the EA review, and the process would have been far more credible.

#### **1.2 PROVINCIAL AND FEDERAL ASSESSMENTS NOT COORDINATED**

· The company then proposed to revert back to a mill site that had been one of the alternatives proposed during the EA process but was rejected early on for environmental and economic reasons.

· When informed of the proposed changes, the Department of Fisheries and Oceans (DFO) immediately asked the Canadian Environmental Assessment Agency to put the federal environmental review on hold pending an assessment of the new mill site. Before the federal environmental assessment of the project had been completed, however, the provincial MEI went ahead and issued permits for pre-production construction to begin, which included the relocated mill and facilities.

· Thorough studies were never properly conducted nor a proper evaluation undertaken of the alternative mill site. Clearly, the provincial government did not have enough information to assess competently the adverse effects of the mill site change, and there was no plan in place detailing how to mitigate or prevent potential adverse effects prior to issuance of the construction permit. The process was not open or accountable, since the MEI did not consider public or even federal input on the mill site change prior to issuing the permits.

1.3 Permits were issued by the provincial government despite a deficiency of information.

At the end of the BC EA process, there were too many information gaps to

have a clear idea of how the project was going to proceed. Yet MEI issued permits for the pre-production construction phase even though:

- there was no Mitigation Plan and Construction Phase Environmental Program
- the Fisheries Act authorization for permission to destroy 17 km of fish-bearing stream had not yet been granted by DFO ;
- the company had not finalized the Independent Supervisor Terms of Reference.
- a materials handling plan,
- a sediment control plan, and
- effluent permits from structures (tailings impoundments, open pits).

After the series of disastrous sedimentation problems leading to an eventual Pollution Abatement Order in July of 1997, it was acknowledged by provincial government representatives that the problems were the due, in part, to the fact that neither MEI nor MELP have guidelines that apply to the construction phase for sedimentation control, nor do they require advanced approval of a sedimentation or materials handling plans.

## 2. IMPLEMENTATION FAILURES

2.1 Changes to the Certificate led to a failure of the independent environmental monitoring program, with subsequent adverse environmental impacts.

- The Project Approval Certificate required Royal Oak to cover the cost of the environmental supervision program. However, MEI and Royal Oak later negotiated a bilateral agreement that the amount the company would pay would be capped at \$100 000, after which MEI would cover the costs. Within four months Royal Oak's budget was spent, and so MEI assigned one of its employees to take on monitoring. During the second summer of construction, severe sedimentation problems were occurring all over the mine site; problems which, according to a DFO official, the Reclamation Inspector (through no fault of his own) lacked the necessary expertise to assess.

2.2 The Kemess project also points out the inability of the government to ensure compliance with conditions set out in the EA certificates, permits and authorizations.

- August 1996 - during construction of the pit no soil salvage was carried out and that fill was placed directly on the topsoil, contrary to the soil salvage requirements of the permit. The report also notes poor maintenance of the Omineca Mine Access Road (OMAR), and resultant impact on the Sustut River
- September 1996 - serious sedimentation occurs in the Upper Sustut River, a valuable salmon spawning tributary of the Skeena, due to careless upgrading of the OMAR

- October - an Environmental Complaint was laid with MELP in by service men working at the mine. They made allegations of illegal burning of oil, improper storage of oil and heavy equipment crossing Kemess Creek, which were later substantiated by the Reclamation Inspector
  - February 1997 - Reclamation Inspector stated that an aggressive program of seeding the disturbed areas along the road must be implemented prior to the growing season in mid-June. Hydro-seeding did not begin until August, by which time the growing season was practically over.
  - March 3 - improper burning of refuse, improper refuse disposal (i.e., non-permitted wastes including solvents), improper storage of oil, illegal burning of oil
  - July 4 - the diversion of a creek was in violation of the Water Act
    - sediment levels were in violation of the Project Approval Certificate, Mines Act permit, and the Fisheries Act.
    - the company failed to follow its mitigation plan, to install sediment control and runoff works; to begin seeding; to have proactive monitoring; to have appropriate expertise; to have appropriate authorizations; to submit plans and manuals for dams, diversion ditches and associated structures, and to make frequent monitoring data submission.
  - July 16 - a Pollution Abatement Order was issued under the Waste Management Act, because construction activities were causing elevated levels of total suspended solids in Kemess Creek and its tributaries.
  - August 9-16 - in blatant disregard of the Order, Kemess began construction work on the foundations of the tailings dam without any effective sediment control works in place.
    - substantial exceedances of water quality objectives noted in Kemess Creek
  - August 19 - lack of compliance with sewage permits
  - Sept. 12 - as of this date, Kemess had still failed to meet almost every condition of the July 16th order: there were no plans on how to prevent and control sediment prior to the tailings pipeline road construction; plans for open pit/waste rock dump area sedimentation had not been received; reseeding efforts were inadequate.
  - Sept. 24 - Kemess finally shuts down ongoing construction at the tailings pump house until runoff and seepage could be collected and pumped into a drainage ditch on the north side of the tailings pond
  - Oct. 14-21 - less than one month after agreeing to remedy the situation, Kemess violates the agreement with MELP by pumping into the south drainage
- MOST RECENTLY...**
- February 9, 1999 - Royal Oak received a letter from MEM stating that the company had failed to comply with a January 29, 1999 order to raise the dam core crest in adherence to a minimum elevation schedule. The letter stated that any delay in meeting the schedule would create a hazard, i.e., breaching of the dam and flooding of the valley downstream, would place the dam, workers and downstream environment at serious risk.
  - DFO expressed their own concerns in letters to the company and MEM. A

DFO official wrote to MEM: "you will recall that all federal and provincial agencies approval of this mine were contingent upon a zero release tailings system. We believe that a discharge from the tailings impoundment could have significant impacts on the environmental, and be a serious violation of the Fisheries Act. . . we are putting your Ministry on notice, and are considering issuing an Inspectors Direction to your Ministry, as a party who has contributed to the potential release of tailings water from the tailings impoundment as a result of relaxing freeboard requirements of the tailings dam from July 7, 1998 to Jan. 28, 1999."

As of Saturday, March 19, 1999, the required dam elevation had not been met (the target was 1437.5 m, the actual elevation was 1436.41 m). On March 22 a new plan was put forth by Royal Oak's engineering consultants, which stated that using a new design plan the tailings impoundment construction requirements could be met.

MEM gave the company until March 29 to get tailings dam elevation on schedule (if not by March 29). If they fail to do so, they will be ordered to stop mining/milling operations.

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HUCKLEBERRY

1. PROCESS FLAWS

1.1 Inadequate information from the proponent led to significant delays in the EA process.

During the review of the Project Report submitted by Princeton, Huckleberry Mines Ltd. (HML), the Project Committee determined that the standard of information provided by Huckleberry in its application was not satisfactory.

- At a Project Committee meetings in Smithers, in August, 1995, an MEI official stated that the Huckleberry application was "the worst certificate application I've viewed "
- Project Committee participants in the ARD Working Group agreed that the ARD testwork and related predictions in the Application were "insufficient" or even "useless." Due to the poor quality of information provided in the application, the ARD Working Group was assigned the task of bringing the mine proposal into compliance. The reanalysis of the ARD data caused significant delays to the process.
- Lack of accurate fisheries data to determine Fisheries Compensation Plans and Cumulative Effects also caused delays in the EA process. HML's Project Report stated that "there is no fish habitat in the majority of the reaches of the streams that will be affected by the mine." On the

contrary, a MELP biologist concluded that the streams did contain plenty of fish habitat.

- Not only were delays caused by problems with the original data, but a failure to provide information in a timely manner also created delays. For example, the acid-base accounting (ABA) data in the Project Report, submitted in May, contained numerical errors, but HML did not revise the data until September.
- Delays continued into the permitting phase. Review and approval of ARD prediction/prevention information was held up because the company was late submitting their Permit Application document.

1.2 Information deficiencies may cause potential environmental problems HML experienced problems due to deficiencies with the initial inventory studies.

- Based on the original inventory studies, it was predicted that there would be sufficient construction materials (i.e., waste rock till) to build the dam. However, it was recently determined that there is a more mineable ore than originally thought, which means that there is less waste rock (one million tonnes less) than estimated. The new design may pose problems (environmental and/or procedural) because HML is proposing to build the impoundment dam from tailings (cyclone) sand.

1.3 Cumulative Effects not adequately assessed.

A true Cumulative Effects package could not be completed for the Huckleberry Project because the company would not commit to a location for their port facility. The location of the port in Stewart, B.C., was not announced until 15 months after Certificate for development was issued.

## 2. IMPLEMENTATION PROBLEMS

2.1 Non-compliance issues highlight the need for a stronger government commitment to enforcement.

- August 1996 - Effluent Permit for the construction phase was non-existent, and there was no intent to develop any legal permit regulations; water quality data had not been received, despite the Interim Reclamation Permit requirement that water quality monitoring data be reported monthly; as of this date, HML had no Sediment Control Plan, even though it was a permit requirement
- Sept. 1996 - the Sediment Control Plan was submitted, but it was not adhered to.
- June, 1997 - HML began excavating East Zone Pit prior to submitting ARD prediction/prevention information (required in Mines Act Permit Application); many of the required monitoring reports were submitted late; reporting on ARD was inconsistent and late; and monthly construction reports were typically submitted at least three to four weeks following the month of reference; in violation of its Mines Act permit, HML constructed

roads and a saddle dam out of potentially acid-generating materials!!

When there are continuous acts of non-compliance with permits or certificate specifications, governments should step-up their enforcement activities. It is within the provincial government's powers to "halt construction, operation, modification, dismantling or abandonment activities until the proponent obtains a project approval certificate, or complies with conditions of a project approval certificate." Furthermore, "In the event of non-compliance with an order made under the Act, the minister may apply to the Supreme Court for an order to comply.

## 2.2 Structural problems with tailings impoundment

In the summer of 1998, the company, halted construction of their tailings dam after it recorded unusual movements (as much as 400 mm or 16 inches) in the structure. The safety of the tailings pond dam has been called into question by Glenda Ferris, who notes that water is flowing out of impoundment from between the bedrock and the till - but in the original design the impoundment was not supposed to have any seepage. A report by AGRA Earth and Environmental, released in November, highlighted that the lower fill in the dam appeared to be spreading as construction added more weight to the top. In a newspaper article in early February, 1999, an official with MEM noted that there has not been significant movement in the past couple of months, and that he's satisfied the dam is solid. Work resumed on raising the height of the dam at the beginning of February.

## 2.3 BC's commitment environmental protection required by certificates further curtailed.

The government recently traded away one of their strongest tools for ensuring long-term environmental protection at the end of the mine's life, i.e., the mine reclamation bonds. In late February, 1999, the government waived reclamation bond payments for two years as part of a bailout package for the Huckleberry Mine.

John Errington of the MEM said in an email to EMCBC that by agreeing to the deferral of the security, the province accepts the possibility that public funds could be used to fund some of the reclamation costs.

The use of environmental securities as an economic and political negotiating tool represents a major breach of the public trust in terms of protection against environmental liability posed by poorly financed junior mining companies such as Huckleberry Mines Ltd (owned by Imperial Metals). This case sets a poor precedent and does not provide the public with much confidence that there will be environmental protection at potentially environmentally hazardous sites such as the Tulsequah Chief mine site, and implies that the public might have to bear the liability for small companies like Redfern.



ALASKA MINERS ASSOCIATION, INC.

### Testimony Before House Resources Committee

SUBJECT: HCR-4, Regarding Tulesquah Chief Mine

Thank you Mr. Chairman.

My name is Steve Borell, I am the Executive Director of the Alaska Miners Association and I am testifying on behalf of the Association.

Thank you for inviting the AMA to comment on House Concurrent Resolution 4, regarding the Tulesquah Chief project.

The Alaska Miners Association, as well as the mining industry in both Alaska and British Columbia, has followed the exploration and permitting of the Tulesquah Chief project for several years. The original Tulesquah Chief Mine operated from 1951 until 1957 and closed at that time due to low metal prices. The company Redfern Resources Ltd obtained an option for the property in 1987 and their exploration determined that there are sufficient reserves that would make it economically feasible to reopen a mine in the area. The project contains what is called a polymetallic ore that contains Zn, Cu, Ag, Au, and Pb.

Redfern began the permitting process in 1994 and then in 1995 British Columbia enacted a new mine development and permitting law. This new law has been heralded throughout Canada as being very comprehensive and stringent and based on the best science available.

It is my understanding that the new British Columbia mine permitting process involves a general approval-in-principle, followed by the detailed design, whereas the permitting process in Alaska defines more of the details prior to any approval. There are advantages and disadvantages of each approach but the end result is the same.

However, the issue at hand is whether or not the International Joint Commission (IJC) should be the vehicle for mediating the differences between the two permitting approaches and providing assurance that the Taku fisheries will be adequately protected. We do not feel that involving the IJC will be helpful in answering the technical questions regarding the Tulesquah Chief project.

Three primary reasons for not utilizing the IJC come to mind. First, the IJC is not primarily a technical body but, rather, an appointed body and because of this there is concern that the IJC members on both sides may be carrying agendas other than simply the technical evaluation of the project. Second, using the IJC process will likely take two or more years to complete. Finally, because it is not a technical body, the technical questions will not be answered and we will be at the same place we are now.

It has been and remains the position of the Alaska Miners Association that the project should be judged and evaluated on the basis of its technical merits. We continue to recommend that all

parties step back and take a new look at the technical aspects of the project. Both British Columbia and Alaska should bring some "new faces" to the table; people not in the center of the past process; people with experience in permitting mines. To ensure that the project receives the broad-based technical evaluation that is needed, people from all three Departments, i.e. DNR, DEC, and Fish & Game, should be involved in the process. This group should be tasked with review of the project to ensure that it is technically sound and will not adversely impact Alaska's natural resources.

Thank you for the opportunity to comment on this Resolution.

# **RAVEN ENVIRONMENTAL SERVICES**

**NATURAL RESOURCES CONSULTING • PERMITTING • TECHNICAL SUPPORT  
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February 12, 1999

FEB 12 1999

**To: Representative Scott Ogan**

**From: Paul Rusanowski**

**Subject: Tulsequah Chief update**

I thought you might be interested in the attached information concerning a new campaign being launched by the environmental community that I just received from Redfern Resources. It clearly shows the lengths that the environmental community is willing to go to stop any and all development.

The Tulsequah Chief project has a relatively small economic impact on Alaska; but it is substantial for Skagway and AIDEA's ore terminal. Given our present economic conditions, it would be helpful if all opportunities for economic benefit were pursued on an equal footing.

There are no genuine issues to resolve through the IJC process but the State continues to push for it. Differences are perceived as largely process related; and British Columbia and Canada follow a significantly different permitting process than the US and Alaska. You can see from this document how the environmentalists plan to use native sovereignty issues, the State of Alaska Governor's Office, and regional comprehensive planning to block the project. It is significant to note that Redfern itself is targeted for action to prevent investment and cause financial harm.

I have also included the latest round of correspondence between the State of Alaska, US State Department and the Province of British Columbia.

Please make use of this information as you feel is appropriate. If you would like more information from Redfern Resources please contact Terry Chandler at 604-669-4775; or Shawn Magee at Optimum 604-662-4560, Redfern's public relations firm.

### Message points for 3<sup>rd</sup> Party Briefings

#### The document

- Redfern has uncovered a planning document that lays bare a cynical campaign by international environmental groups to stop the Tulsequah Chief Project – in fact, to halt all economic development in the project area.
- The U.S. and Canadian groups involved in this campaign are the same well-connected, well-financed coalition that sank the Windy Craggy Project in 1993.
- What the document illustrates is American environmental groups, utilizing money from American foundations and contacts with American government officials to stop a duly reviewed and approved project in Canada.
- The stated objectives of the campaign are:
  1. Stop the Tulsequah Chief Mine
  2. Stop the mine in a way that provides financial and economic deterrents to future developments in the project area.
- The tactics identified in the plan include:
  1. Leveraging U.S. government officials to utilize the International Joint Commission (IJC) process to delay and/or stop mine development.
  2. Attacking Redfern in the marketplace, by utilizing the IJC threat to scare off existing and potential investors, and limiting the company's ability to raise funds to develop the mine.
  3. Providing financial and legal support for factions of the local native community (TRTFN) predisposed to challenge the B.C. and Canadian government's environmental review and permitting of the Tulsequah Chief mine.
- Key players in the campaign include:
  1. Ric Careless of BC Spaces for Nature;
  2. Alan Young of the Environmental Mining Council of BC;
  3. the Washington D.C.-based American Rivers, which maintains close connections to the Clinton administration through VP Al Gore.
- These three groups also comprised the core of Tatshenshini Wild, the group that successfully fought against development of the largest copper reserve in North America (Windy Craggy) in the early 1990s.
- The Tulsequah Chief coalition has identified a budget of \$170,000 for the first year of its campaign.
- The document identifies more than 20 major U.S. foundations that they expect to fund the campaign, including the Rockefeller Bros. Fund, the Turner Foundation and others.

# TO SAVE THE TAKU RIVER

## **A Coordinated Campaign Strategy Outline**

Prepared by:  
**Michael Magee**  
Sierra Legal Defence Fund  
(604) 685-5616  
magee@sierralegal.org

In coordination with:  
Taku Wilderness Association  
Nakina Centre for Aboriginal Life and Learning  
Sierra Club of British Columbia  
Environmental Mining Council of B.C.  
BC Spaces for Nature  
David Suzuki Foundation  
Northwest Institute  
The River League  
American Rivers

Southeast Alaska Conservation Coalition

*Walter & Duncan Gordon Foundation*

THE CAMPAIGN NEED

The Taku wilderness is under threat of pending developments that impact on the lives and well being of the Taku River Tlingit First Nation (TRTFN) and the ecological integrity of one of North America's last remaining magnificent wilderness areas.

An aggressive, thoughtful and strategic campaign is urgently needed to stop the immediate threats to this area and to establish a plan for the longer term protection of its environmental values and of the people in the region.

In a serious effort to achieve these goals a coordinated strategy was organized in Vancouver of September of 1998 amongst key groups in the U.S. and Canada dedicated to preserving the Taku wilderness.

*not considering*  
The groups who participated in this meeting and will continue to work on this project include:

Taku Wilderness Association  
Nakina C.A.L.L. (Centre for Aboriginal Life and Learning)  
Sierra Club of British Columbia  
The River League  
BC Spaces for Nature  
Sierra Legal Defence Fund  
Northwest Institute  
Environmental Mining Council of British Columbia  
American Rivers  
Southeast Alaska Conservation Coalition

Groups who were not in attendance at the meeting but will play a role in a coordinated campaign include:

The David Suzuki Foundation  
Earthjustice Legal Defence Fund

The purpose of this document is to:

- Provide a multi-organization, coordinated campaign outline that illustrates the specific goals, objectives, strategies, tactics, organizational structures, relationships and funding that will be required to win.

### Background

The Taku River watershed is an 18,000 square kilometer (4.5 million acres) unroaded tract of land near the town of Atlin in northwestern British Columbia, Canada. This immense watershed, equivalent in size to the state of Massachusetts is the traditional homeland of the Taku River Tlingit and contains

habitats representing five biogeoclimatic zones ranging from high plateaus to lush coastal temperate rainforests. It contains some of the richest wildlife habitat on the west coast of North America and is home to grizzly bears, moose, caribou, black bear, mountain goat, salmon and many species of migrating birds. These species thrive here in large numbers due to the area's essentially untouched nature and the fact that it is only accessible by float plane, river boat or by foot. This region is the highest producer of salmon on the southeast shore of Alaska and northwest British Columbia.

This spectacular area is now threatened by a proposal to construct a 160 km access road needed to reopen the Tulsequah Chief Mine located on the Tulsequah River just upstream from B.C.'s border with southeast Alaska. The road is needed in order to transport ore to the shipping tidewaters of Skagway. Proponents, Redfern Resources Ltd., claim that the Tulsequah Chief Mine will provide nine years of profitable mining activity. While this scenario has appeal for some factions, the mine would introduce massive quantities of Acid Mine Drainage to the watershed, endangering water quality and aquatic habitat for salmon and other wildlife. The proposed road also threatens the survival of a recovering woodland caribou population and threatens to disrupt grizzly bear habitat. The cumulative effects of this road would be increased hunting and poaching pressure, roadside developments, spur roads to new mining claims, and logging of the fragile boreal forest and globally endangered temperate rainforest. Wildlife experts both within and outside of government disagree with the proponent's claims that impact on wildlife in the Taku will be minor.

#### **Current Status of Development**

Redfern Resources is continuing to push ahead aggressively with their plans to establish the Tulsequah Chief Mine. There are several obstacles to this which include:

- An review by the International Joint Commission (IJC). The United States has requested that this issue be referred to the International Joint Commission for investigation as there are serious threats it will effect trans-boundary waterways. As this document is being written there has been no formal agreement from Canada refer it to the IJC, however, Canada has requested another meeting with the United States to review the agenda for eventual referral to IJC. The State Department has responded aggressively and is becoming increasingly agitated with the Canadian Federal Government's delaying tactics; this in turn has served to delay some of the Special Use Permits (SUP) into December of 1988.
- Redfern Resources share prices are sinking and the company is increasingly unstable. This vulnerability is more evident when the financial assumptions of the Tulsequah Chief Mine proposal are examined more closely. Given the

current economic conditions there is high probability of exploiting this vulnerability and exposing the mine as financial non-viable.

- There continues to be the possibility that the Taku River Tlingit First Nation (TRTFN) will challenge the provincial mine approval process. Should this take place it would pose a serious threat to the future development of the mine.

### Campaign Goals and Objectives

1. Stop the Tulsequah Chief Mine.
2. To stop the mine in such a way that it ensures a developmental moratorium on the Taku Watershed.
3. To ensure that a comprehensive Land Use Planning process is completed that is agreeable and inclusive of the Taku River Tlingit First Nations (TRTFN).

### Strategies

#### 1. Stop the Tulsequah Chief Mine

The strategic objective in the early stages of this campaign will be to stop the mine from proceeding in such a way that establishes a moratorium on the area for further development. This will be achieved through several tactical components including:

- A coordinated trans-boundary political effort focusing on the US Congress and key legislators within Alaska and Washington DC. Given the mine's potential negative impact on a highly profitable Alaskan fishery and waterway it is highly probable that the U.S. Congress can be leveraged to take further defensive actions against such a threat.
- A comprehensive economic analysis of Redfern Resources. This would include closer scrutiny of Redfern's shareholder interests, current mineral prices and the underlying financial calculations they have used to substantiate the mine proposal. This data will be critical in establishing with the financial community and policy makers of the financial weaknesses of the Tulsequah Chief mine proposal and other similar initiatives that are being explored in the Taku Watershed.

- **Solidarity and support for the Taku River Tlingit First Nation (TRTFN).** The TRTFN have been considering taking further legal and political action based on their aboriginal rights to oppose the approval of the mine. The TRTFN must be given adequate capacity support and resources to defend any such actions should they be taken.
- **The International Joint Commission.** While it would be the objective to stop the mine development long before any IJC reference is undertaken, the reference itself needs to be used to increase profile of the issue. Further pressure needs to be brought to focus on the Canadian External Affairs to make a final decision in referring this matter to the IJC. Most importantly, the process of moving the complaint to a formal investigation by the IJC must be used as a key media opportunity for heightened exposure on the Taku and to support the above noted initiatives

## 2. Ensure a Development Moratorium

The Tulsequah Chief proposal has generated heated debate and attention in the local community, within the TRTFN, with the B.C. government and the U.S. One of the process issues that has been given the most attention is the weaknesses in the provincial approval process for the mine. This has underscored the significant need to develop a comprehensive land use plan that considers the socioeconomic future and ecological integrity of the Taku wilderness. To complete this a moratorium on development will need to be established. It is the objective of this campaign to stop the Tulsequah Chief Mine in a manner that provided ample financial and economic deterrents to future developments until a land use plan is agreed upon.

## 3. Ensure a Taku Land Use Plan

The success of establishing a comprehensible protected area in the Taku will depend largely on the longer term work and credibility of the Land Use Plan. Significant capacity support will have to be established for key groups including the TRTFN to complete work related to scientific, legal and social economic research.

For the purposes of this proposal, we will focus on the first two points. A planning committee will be established to work on the longer term details on requirements of a Land Use Plan. This will be the subject a future proposal.

## **Campaign Structure**

There will be several components to the campaign structure to ensure quick campaign development, decision making and proper tactical assignments. The structure will be as follows:

- **Taku Network:** The Network will include all organizations and individuals who wish to support the campaign initiatives overall. This will be an information sharing network with organizations receiving regular briefs and being called upon for specific actions when necessary.
- **The Taku Steering Committee:** This will be the key groups with a more direct involvement and interest in the Taku campaign. The Steering Committee will assist in guiding overall priorities and policy directions. The members of this committee will include:

Taku Wilderness Association  
Nakina C.A.L.L. (Centre for Aboriginal Life and Learning)  
Sierra Club of British Columbia  
The River League  
BC Spaces for Nature  
Sierra Legal Defence Fund  
Northwest Institute  
Environmental Mining Council of British Columbia  
American Rivers  
Southeast Alaska Conservation Coalition  
The David Suzuki Foundation  
Earthjustice Legal Defence Fund

- **The Executive Committee.** This committee will be a smaller group from the Steering Committee that will set the strategic direction of the campaign, make decisions on a regular basis and coordinate the activities of the key organizations. The Executive Committee members include:

Don Weir, Taku Wilderness Association  
Alan Young, Environmental Mining Council of BC  
Ric Careless, BC Spaces for Nature  
Mike Magee, Sierra Legal Defence Fund

The campaign will have established several working groups to develop the critical strategic components. These working groups will be a combination of groups and individuals from the Network, assigned to groups depending on their area of expertise. Each working group will have a lead organization.

**NOTE:** For the purposes of this proposal, working groups are assigned "global" budget estimates. Specific proposals for working groups would be submitted by the lead organization. These proposals may vary from the global estimates

depending on the scope of the plan produced by the working group. The working groups include:

- **COORDINATION (ie. the Executive Committees):**

This working group will largely be the work of the Executive Committee and a staff coordinator. Lead organization will be the Environmental Mining Council of British Columbia with support from the Sierra Legal Defence Fund. Budget estimate: \$30,000 (CDN)

- **TRANS-BOUNDARY STRATEGIES:**

This working group will include BC Spaces for Nature, American Rivers, Southeast Alaska Conservation Coalition, Earthjustice Legal Defence Fund, Sierra Legal Defence Fund, Taku Wilderness Association. Lead organizations will be BC Spaces for Nature and Taku Wilderness Association. Budget estimate: \$40,000 (CDN)

- **MEDIA AND COMMUNICATIONS:**

This group will assist in cultivating major media stories, executing media strategies for specific initiatives, training and capacity support for key Network organizations. The group will include David Suzuki Foundation, Sierra Legal Defence Fund, The River League, Sierra Club of BC, Earthjustice Legal Defence Fund. Lead organization will be Sierra Legal Defence Fund. Budget estimate: \$30,000 (CDN)

- **ECONOMICS:**

This group will initiate a review of the underlying financial assumptions of the Tulsequah Chief mine and the real costs and benefits of development in the Taku wilderness. The work will include an examination of Redfern Resources. The group will include BC Spaces for Nature, Taku Wilderness Association, Environmental Mining Council of BC. Lead organization will be the Environmental Mining Council of BC with support from BC Spaces for Nature. Budget estimate: \$40,000 (CDN)

- **COMMUNITY DEVELOPMENT AND LIAISON:**

This group will focus on cultivating relationships and understanding in the local community. Work will include on-going relationship building and support for the TRTFN and the Nakina CALL and communications with local industry and government officials. It may, from time to time, include capacity support for the TRTFN. The group will include the Taku Wilderness Association, Nakina CALL, the River League and the David Suzuki Foundation. Lead organizations will be the Taku Wilderness Association and the Nakina CALL. Budget estimates: \$30,000 (CDN)

- **RESEARCH:**

This group will initiate the longer term planning and research that will be required for a proper land use planning process. In the initial stages the group will identify the key socioeconomic, legal and scientific intelligence that will be required to accomplish such a plan. Working group members will include the Nakina CATT, Northwest Institute, Sierra Club of BC and The River League and the Taku Wilderness Association. Budget estimates will be developed as the necessary elements of the research are identified. It's expected this part of the overall strategy will be the subject of future funding proposals in later stages of the campaign.

### WORKING TIMELINES:

For the purposes of this proposal the time lines are broken down into immediate and short term modes. Medium and long term plans will be developed through the working groups and distilled through the Executive Committee for future presentation

**IMMEDIATE TERM:** November 1998 through to January 1999 (3 months)  
The goal in the short term is to establish secure funding for the working groups and to initiate the strategy outlined in this document. Bridge funding will be necessary to hire a coordinator, provide an office and for capacity support to a few key groups such as the Taku Wilderness Association. This will be the work of the Executive Committee with lead initiative from Sierra Legal Defence Fund.

The working groups will have completed their medium and long term campaign plans by the end of January 1999.

**SHORT TERM:** February 1999 through to June 1999 (6 months)  
By this point a coordinator will be well in place, funding secured (or at least identified). The Trans-Boundary Working Group should have well under way it's tactical moves related to the International Joint Commission, Congress, and the Alaskan government. The Economics Working Group should have completed it's initial review of the financial assumptions of the mine, the investor community, shareholder activity and other related economic factors. The Media Working Group should have significant work completed on cultivating major media stories on the Taku including CBC and CTV national news and the NY Times and Washington Post.

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**Draft**  
**Taku Campaign Fundraising Strategy**  
**December 1998**

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Note: All grant amounts in US dollars except where noted. All project goal amounts in CDN dollars.

- A. Coordination: EMCBC is lead organization  
 Goal: \$48-60,000  
 First Priority

Endswell Fund - \$15,000 CDN committed  
 EMCBC core - \$10-15,000 CDN available  
 Weeden Fdn - \$15,000  
 Lichen Fdn - \$10,000 CDN

- B. TRTFN Land Protection Plan (while not central to campaign, critical to ground 1<sup>st</sup> Nation and strengthen the community's commitment to legal challenge of Redfern permit.)

Goal: Short-term \$2,000 for consultant to work with TRTFN to develop proposal.  
 Long-term \$200-300,000 over 2-3 year period to complete the plan.

Robt Schad Fdn- Bolton, Ontario  
 Hewlett Fdn  
 Packard Fdn  
 W.Alton Jones Fdn  
 Rockefeller Bros. Fund  
 Paul G. Allen Forest Trust??????

- C. TRTFN Litigation and Community Liaison: SLDF is lead organization and fiscal agent for the TRTFN.

Goal: \$180,000 of which \$150,000 is the total estimated cost of Art Pape's representation of the TRT. \$30,000 for AitIn community nurturing.

Litigation:

Brainerd Fdn - \$20,000 March 1999 docket  
 Endswell Fdn - \$10,000 CDN committed  
 W&D Gordon Fdn - \$20,000 CDN  
 W.Alton Jones Fdn - \$30-50,000  
 Lannan Fdn - \$50,000/yr. Possible 2 yr Approach?  
 Wilburforce Fdn - \$30,000  
 David Suzuki Fdn - \$30,000 CDN

Community Liaison:

Tides donor funds - \$20,000  
 True North Fdn - \$10,000  
 Turner Fdn - \$10,000 ???

**D. Media and Communications**

Lead group: SLDF

Goal: \$30,000 for direct media work and training for TRTFN and other core actors. —

Lichen Fdn	- \$10,000 CDN
Kongsgaard/Goldman Fdn	- \$10,000
Surdna	- \$20,000 ?

**E. Community Support**

Lead groups: Taku Wilderness Association (TWA) and Nakiis CALL

Goal: \$30,000

Fdn for Deep Ecology	\$10,000 — Contact John Davis
W&D Gordon Fdn	\$20,000
Kinney Watershed Fdn	\$10,000 US committed 12/98 to TWA

**F. Transboundary Strategies**

Lead groups: BC Spaces for Nature and TWA

Goal: \$40,000 \*Does not include support for US groups in SE Alaska

W&D Gordon Fdn	\$20,000 CDN
Weeden Fdn	\$10,000
K/G Fdn	\$ 7,500
True North	\$10,000
Lazar Fdn	\$ 7,500

**G. Economics/Corporate financing strategy**

Lead groups: EMCBC + BC Spaces for Nature

Goal: \$30,000

Fdn for Deep Ecology -	\$10,000
Tides Fdn - donor funds -	\$10,000
Lichen Fdn	\$10,000

## GLOBAL BUDGET

NOTE: Lead organizations will submit funding proposals for specific components of this coordinated campaign. The budget figures presented here reflect the general needs that will be created by lead organizations taking on their respective work in coordination with other groups. These budget figures may alter once the Working Groups finalize their work plans in the immediate term. The global budget was derived to establish a coordinated pattern for submission of proposals to funders from lead organizations.

COORDINATION	\$30,000
TRANS-BOUNDARY	\$40,000
ECONOMICS	\$30,000
MEDIA AND COMMUNICATIONS	\$40,000
COMMUNITY DEVELOPMENT and LIASION	\$30,000
RESEARCH	future pending

**TOTAL GLOBAL BUDGET (1 year)      \$170,000**

**TULSEQUAH CHIEF PROJECT  
ENVIRONMENTAL ASSESSMENT PROCESS AND AFTERMATH**

In September, 1994, Redfern Resources Ltd. entered the Mine Development Assessment process in British Columbia by filing an application to re-develop the former Tulsequah Chief Mine in northwest B.C. The application was subsequently transitioned to the B.C. Environmental Assessment Act (BCEAA) process in July 1995. The BCEAA review of the Tulsequah Chief Project involved the governments of B.C., Canada, Alaska and the United States, as well as public and First Nations stakeholders. Key milestones in the review process included:

September 1994	Application
February 1995	Public Review of Application
July - Nov 1995	Draft Project Report Specifications developed
Nov 26, 1995 - Jan 30, 1996	Public and Project Committee review draft Project Report Specifications; formulation of Final Project Report Specifications
Nov 25, 1996	Redfern submits Project Report to Project Committee for screening to determine if Report meets Specifications
Nov 25, 1996 - Jan 21, 1997	Project Committee completes screening and does not accept Report for review pending resolution of deficiencies for environmental studies related to barge access and First Nations traditional land use studies.
March 14, 1997	Redfern submits Application to amend Project by removal of barging as an access option due to technical and economic infeasibility.
March 15 to June 18, 1997	Project Committee reviews and accepts Amendment application.
July 4, 1997	Redfern submits revised Project Report for screening by Project Committee.
August 1, 1997	Project Committee unanimously accepts Project Report for full review.
Sept 8 - Nov 6, 1997	Project Report undergoes full public review. Redfern holds advertised public consultation meetings in Atlin, Whitehorse, Skagway and Juneau.
Nov 7, 1997 - Feb 13, 1998	Project Report reviewed by Project Committee - 19 meetings of the full Project Committee and/or sub-committees are held to review resolution of project issues.
Mar 5 - Mar 13, 1998	Draft Project Committee recommendations report circulated to Committee members for comment, incorporating resolutions to issues from Committee and sub-committee review findings.
Mar 19, 1998	Certificate granted by BC Government

## POST-CERTIFICATE EVENTS

In late March 1998, Alaska Governor Tony Knowles referenced the Tulsequah Project in a letter to Secretary of State Madeleine Albright, in which he called for additional review of the mine proposal through the International Joint Commission (IJC). Mr. Knowles' letter made it clear that he perceived there to be inadequate information and/or insufficient review conducted to assess the technical risk of the Project on shared resources, namely fish and waters.

In response to the statement of concern, the B.C. Environmental Assessment Office ("EAO") and federal Canadian agencies, through the auspices of the federal Department of Foreign Affairs, visited Washington, DC on April 16, 1998 to meet with Alaskan and federal US government representatives. The meeting was held to answer American concerns, where possible, and to explain the differences between the American and Alaskan permitting process relative to the Canadian and BC provincial review and certification process. As a result of the meeting a commitment was made to provide a follow-up document addressing specific issues and providing further clarification for Alaskan and US agencies.

Following further discussions between various US and Alaskan technical personnel and their Canadian federal and provincial review agency counterparts, a document was compiled by the BC EAO to answer the specific technical concerns raised. This response document was forwarded on May 21, 1998 to the US State department, US EPA, and the Governor's Office, State of Alaska. Copies were also sent to Canadian Department of Fisheries and Oceans, Canadian Environmental Assessment Agency (CEAA) and External Affairs in Ottawa.

On August 28 the US State Department sent a letter to Canadian Foreign Affairs requesting that Canada agree to an IJC review of the Tulsequah Project. A second round of bilateral government meetings were held in mid-November, and a further series of response documents have been forwarded in December to demonstrate the lack of substantive technical issues. A final meeting to present the response to Alaskan-US concerns over stability of the tailings area was held on December 23, 1998. It is our understanding, from discussions with the participants, that the US technical representatives were largely satisfied with the tailings design and stability assessment responses.

For additional information on the content of the May Alaskan response document please refer to:  
[http://www.eao.gov.bc.ca/PROJECT/MINING/TULSEQUA/US\\_Concerns/toc1.htm](http://www.eao.gov.bc.ca/PROJECT/MINING/TULSEQUA/US_Concerns/toc1.htm)

## Key Facts

### Environmental Assessment Review

- The Tulsequah Chief Project received its Project Approval Certificate from the British Columbia provincial government on March 19, 1998. Signed by B.C.'s Minister of Energy, Mines and Northern Development (Dan Miller) and Minister of Environment, Lands and Parks (Cathy McGregor), the certificate grants approval for the mine's proponent, Redfern Resources Ltd., to re-open the historic underground mine and build an access road to Atlin, B.C. for the transportation of concentrates from the mine to the port of Skagway, Alaska.

- The government's decision was based on recommendations put forward by the Tulsequah Chief Project Committee, which was formed in November 1994 by the B.C. Environmental Assessment Office (EAO) to conduct the necessary review and make recommendations on the project. The committee was comprised of representatives from the following groups:

Provincial Agencies:

Environmental Assessment Office  
Ministry of Environment, Lands and Parks  
Ministry of Energy and Mines  
Ministry of Small Business, Tourism and Culture  
Ministry of Transportation and Highways  
Ministry of Forests

Federal Agencies:

Department of Fisheries and Oceans  
Canadian Coast Guard  
Environment Canada

Local Government:

Atlin Advisory Planning Commission

First Nations:

Taku River Tlingit First Nation

Yukon Territorial Government:

Dept. of Community and Transportation Services

Alaska State Government:

Division of Governmental Coordination

United States Federal Government:

Environmental Protection Agency  
Department of Interior

- The environmental assessment of the Tulsequah Chief Project was comprehensive and exhaustive. During the 3½ year review period, the following issues were studied in detail:
  - Geology
  - Geotechnical structures
  - Mine development and mining methods
  - Mineral processing and metallurgy
  - Access alternatives and access management
  - Climate and precipitation
  - Hydrology
  - Water chemistry
  - Water quality
  - Fish and fish habitat
  - Other aquatic life
  - Vegetation
  - Wildlife and wildlife habitat
  - Culture, sustenance and archaeology
  - Land use
  - Water management
  - Tailings management
  - Air quality and noise control
  - Materials and waste management
  - Acid rock drainage
  - Socioeconomics
  - Accidents and malfunctions
  - Cumulative effects
  - Environmental supervision and monitoring
  - Reclamation, decommissioning and closure

- The Tulsequah Chief Project Committee indicated in its majority report that all technical and policy issues related to the project are considered manageable, and that the project is not expected to cause significant adverse environmental effects.
- British Columbia's review process is thought to be one of the world's most rigorous standards of environmental assessment in the world. The Tulsequah Chief Project assessment met the requirements of the B.C. Environmental Assessment Act (BCEAA) as well as the Canadian Environmental Assessment Act, under the Canada-British Columbia Agreement for Environmental Assessment Co-operation.
- As one of the first mines to be comprehensively studied under BCEAA, which was introduced in 1995, Tulsequah Chief may be the most exhaustively studied mining project in B.C. history. Since the environmental assessment review of the project began in 1995, Redfern has:
  - Invested an estimated \$8 million in environmental, socioeconomic and engineering studies;
  - Held 10 public open house meetings in Arlin, B.C., Whitehorse, Yukon, Skagway and Juneau, Alaska, in addition to numerous meetings with stakeholders;
  - Established a community office in Arlin to provide information and liaise with the local community;
  - Worked closely with the Taku River Tlingit First Nation to identify the native community's priorities and study archaeological, cultural and traditional use issues in the project area.
- Extensive public and First Nation consultation above and beyond that required under the BCEAA occurred at each stage of the review process, including:
  - Three formal public review periods;
  - Stakeholder input in project committee meetings following the end of the public review period;
  - 10 open houses;
  - 300 public submissions;
  - Ongoing meetings with the public and stakeholder groups;
  - Provision of intervenor funding to third parties to participate in the review;
  - Hiring of an Aboriginal Liaison Officer to allow for information exchange with Taku River Tlingit directors and members.
- During the review process, the government granted four extensions to the legislated time limits for review of the project, in order to allow additional time for the public and the Tulsequah Chief Project Committee to complete the assessment of the project.
- The next step for Redfern is to obtain the routine permits required in order to begin construction and eventual operation of the mine.
- Redfern is currently involved in discussions with joint venture partners to secure project financing. The company estimates that capital investment in the Tulsequah Chief Project will total \$160 million, including \$148 million for construction costs and an additional \$12 million for working capital.

**For more information:**  
**Janice Loukras**  
**(604) 669-4775**

TONY KNOWLES  
GOVERNOR



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STATE OF ALASKA  
OFFICE OF THE GOVERNOR  
JUNEAU

January 6, 1999

Mr. Strobe Talbott  
Deputy Secretary of State  
U.S. Department of State  
2201 C Street, NW, Room 7220  
Washington, DC 20520-7512

*Strobe*  
Dear Mr. Talbott:

Thank you for the Department of State's December 4 letter to Minister Higginbotham, Embassy of Canada, reiterating the United States' concern that no prejudicial action be taken regarding development of the Tulsequah Chief mine while our bilateral discussions continue. In addition, I am writing to let you know that the State of Alaska continues to have strong concerns about the proposed Tulsequah Chief mining project in northwest British Columbia. I seek your assistance in referring this proposed project to the International Joint Commission (IJC) for further review.

The Tulsequah Chief mine is a proposed underground base/precious metals mine located 40 miles from Juneau, Alaska in the Tulsequah River valley, in northwest British Columbia, Canada. Redfern Resources Ltd., the project proponent, seeks to construct an 80-mile road through the Taku River watershed to reopen a previously closed underground mine. The project site is located about 18 miles upstream from the B.C./Alaska border. The proposed mine is located on the Tulsequah River, a tributary to the Taku River, which is a transboundary river under the International Boundary Waters Treaty Act.

The Taku River, and its near pristine watershed, is a prolific producer of all five species of Pacific salmon. These fisheries are fundamental to Southeast Alaska's subsistence, sport, and commercial fishers, and the communities in which they live. The Taku River is also a transboundary river under the Pacific Salmon Treaty with Canada, and fishers from both sides of the border have benefited from joint salmon enhancement projects. By putting salmon habitat at risk, the Tulsequah mine project also puts at risk this successful program to conserve and sustain salmon. As you know, the allocation of this important

Mr. Strobe Talbott  
January 6, 1999  
Page 2

salmon fishery has already been the source of difficulties between Canada and the United States.

Alaska has reviewed all key Tulsequah Chief mine project documents and has participated in numerous project meetings over the past four years. We have, on numerous occasions, made our concerns clear; but they have largely been ignored. The most recent project meeting, held in Vancouver in mid-November, ended with an apparent acknowledgement on the part of Canada that our outstanding concerns were legitimate and deserving of attention through appropriate scientific and land use studies. In spite of this acknowledgement, outstanding concerns have not been resolved.

The state is now in an untenable position. Canada has acknowledged the need to gather basic information on key aspects of mine siting, development, and operation, yet refuses to acknowledge this new information may indeed point to potential critical flaws. Our views appear irreconcilable; and, as such, we believe the matter is suitable for referral to the IJC, as we have maintained since my letter to Secretary Albright last March.

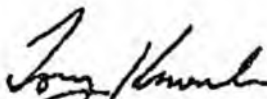
In addition, it has come to our attention that while we participate in bilateral negotiations with Canada, the mine/road permitting process continues to move forward. British Columbia appears poised and ready to issue a special use permit that would allow road construction. We find these permitting actions distressing. Most recently, the preparations for building a winter road, which crosses our joint watershed, are proceeding in spite of the December 4 letter from the State Department to the Canadian Embassy clearly stating the U.S. position that no action should take place on the ground until there is a mutually agreeable conclusion to ongoing discussions. To our knowledge, this is the first time in IJC history that permitting for a project has continued while the project is under review for an IJC referral.

Not only are the Tulsequah Chief mine issues fully ripe for IJC review and recommendation, we are at this impasse just as the IJC is expanding its role to include major watershed review. Specifically, the U.S. and Canadian governments have recommended the IJC look at the possibility of forming binational boards for several major watersheds along the joint border, including the Taku River. We believe IJC involvement is imperative *before* the Tulsequah Chief project irrevocably changes the watershed. These irrevocable acts would offend and preclude the very purposes the two nations are trying to achieve through a watershed approach.

Mr. Strobe Talbott  
January 6, 1999  
Page 3

I would be happy to provide you further detail to ensure that Alaska's level of interest and concern is clear. I believe it is time for the Department of State to firmly urge Canada to work with the United States in a joint IJC referral of the Tulsequah Chief mine development. I look forward to hearing from you about this important matter.

Sincerely,

  
Tony Knowles  
Governor

cc: Victor Comras, Director, Office of Canadian Affairs  
Brooks Yeager, Deputy Secretary, Department of the Interior  
Willie Taylor, Director, Office of Environmental Policy and Compliance  
Department of the Interior  
Mary Beth West, Director, Office of Oceans and Environment Department of State  
Pete Christich, Director, Office of International Affairs Environmental Protection  
Agency



BRITISH  
COLUMBIA

January 22, 1999

Right Honourable Jean Chrétien, P.C., M.P.  
Prime Minister of Canada  
House of Commons  
Ottawa, Ontario  
K1A 0A6

Dear Prime Minister Chrétien:

On September 29, 1998, I wrote to you expressing my firm belief that the Tulsequah Chief Mine can be developed in an environmentally sound and responsible fashion, consistent with the conclusions of three and one-half years of review under British Columbia's and Canada's statutory processes for environmental assessment. I emphasized the cost of the threat of a referral of the Tulsequah Chief Mine to the International Joint Commission (IJC) - not only to this project, but also to the broader prospects for responsible development in British Columbia and elsewhere in Canada.

Following the environmental assessment (EA) review, over nine months of comprehensive, cordial and constructive discussions on specific technical aspects of the project have been completed. These discussions involved officials of the Governments of British Columbia, Canada, the United States and the State of Alaska. Meetings were held in April 1998 in Washington, D.C.; on November 16 and 17, 1998, in Vancouver; and on December 23, 1998, in Seattle. Technical information has also been exchanged on several occasions. During these interactions, officials have responded to the technical concerns identified by the United States by indicating in detail how British Columbia and Canada have or will address these concerns - in nearly all cases along the lines proposed by U.S. and Alaskan officials.

The remaining points of disagreement relate to matters of difference in statutory processes for environmental assessment and development of such projects, and to timing of issuance of permits. They do not relate to questions of environmental standards. Indeed, the various parties are substantially in agreement on this matter; B.C./Canadian standards generally meet or exceed equivalent Alaskan and U.S. standards.

.../2

Office of the  
Premier

Mailing Address  
PO Box 9041 Stn Prov Govt  
Victoria BC V8W 9E1

Location:  
Parliament Buildings  
Victoria

It is therefore my strong belief that this matter can and must be brought to a close, in the interests of moving ahead with orderly economic development in the northwestern part of our province.

Despite the progress made on technical issues and the good relations maintained between our officials, I have learned that the Office of the Governor of the State of Alaska continues to press for a referral to the IJC. This action appears to be based on inaccurate and misleading information.

Concerns over loss of salmon habitat and fish mortality are unfounded. It has been made clear to U.S. officials that the underlying principles established by the Department of Fisheries and Oceans and the Province's Ministry of Environment, Lands and Parks and applied to this project are: zero fish mortality, zero loss of habitat. The claim that Alaskan concerns have been largely ignored is simply wrong; indeed, written agreement on technical issues and commitments for further action which accord with recommendations of the U.S. participants (including Alaskan representatives) have been made by British Columbia and Canada on every issue identified by the U.S.

The harmonized EA review has allowed British Columbia and Canada to conclude that there are no critical flaws in the general design of the project. Further investigation of all elements of the project will take place at subsequent detailed design and permitting stages. In the unlikely event that these investigations reveal a significant problem, British Columbia has committed to take appropriate action to ensure applicable federal and provincial environmental standards are met and maintained, including, if necessary, declining the authorization of further development activity.

While these technical discussions with the U.S. were underway, B.C. has been obliged to meet the requirements of its statutory permitting and authorization processes in response to the proponent's applications to proceed with the project. The U.S. has repeatedly been invited to participate in these processes, but to our regret has consistently declined. It should be noted that no construction activity has begun to date, and the Province is not aware of immediate plans to proceed. Approval to proceed with any construction activity, including on the access road, will require further detailed data collection and design.

.../3

- 3 -

Nonetheless, Alaska appears to have concluded, based on information of questionable accuracy, that it is now in an untenable position and finds itself obliged to press the Department of State to urge Canada's participation in a joint IJC referral.

British Columbia and Canada have made extensive efforts to address U.S. and Alaskan concerns. Our harmonized EA process has concluded that the project poses no significant transboundary threat and can proceed to the next stage of our review process. British Columbia is obliged by provincial law to meet the requirements of our statutory processes in response to applications for further permitting.

While British Columbia remains committed to full and open cooperation with all concerned parties, I must reiterate the Province's view that a referral to the IJC is unwarranted. I urge your Government to instead seek explicit assurances from Department of State that the U.S. is prepared to continue the dialogue we have maintained over the past nine months by working within British Columbia's and Canada's statutory processes to ensure that our mutual interests in respect of the environment are taken into account as the project progresses.

I look forward to the continued support of your Government in bringing closure to this most important matter.

Sincerely



Glen Clark  
Premier

pc: see attached list

G LTR TO ADDRESSSEE  
 YES TO:

DEPARTMENT OF STATE  
 WASHINGTON

'99 JAN 27 05:54

January 27, 1999

Dear Governor Knowles:

I am writing in reply to your letter of January 6 regarding British Columbia's Tulsequah Chief mine.

The Department of State, the Department of the Interior and the Environmental Protection Agency fully share Alaska's deep concern about the potential adverse effects that reopening the Tulsequah Chief might have on the Taku River watershed and the salmon fisheries there. Federal and State of Alaska agencies have cooperated closely over the past ten months in presenting our concerns to the Governments of Canada and British Columbia and seeking the proper remedial actions.

The U.S. side has been willing to try to settle these issues directly with the interested parties, to see if our concerns can be met. In so doing, however, we have made clear to Canada our expectation that no action will be taken on the project that would prejudice this matter while it remains open between us. We have reiterated that we would proceed to a reference to the International Joint Commission (IJC) should such prejudicial action take place.

Upon learning that the British Columbia permitting committee was meeting to consider the granting of an access road construction permit, we immediately sought clarification from the Canadian government. We reminded the Canadians that construction on the road would be among the actions that we would consider prejudicial. Since then we have been assured by British Columbian and Canadian federal officials that the permit being considered for the road will be conditional on the mining

The Honorable  
 Tony Knowles,  
 Governor of Alaska,  
 P.O. Box 110001,  
 Juneau, Alaska 99811-0001.

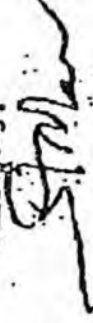
-2-

company first carrying out further investigation of the environmental impact of the construction. Together with Alaskan officials and other federal agencies, we will review closely the conditions set by the permit process to ensure that they are acceptable from the standpoint of impact on the injured watershed of the Takli. We also are setting further assurances that construction on the road will not be undertaken while U.S. concerns about its impact remain unresolved.

As a result of the November meeting in Vancouver and an additional technical meeting in Seattle in December 1992, the U.S. experts have received additional technical and environmental information concerning the project. Federal and state agencies are assessing this information. We will remain in close touch with your office as we work together to press for resolution of U.S. concerns regarding the Tulsquah Chief.

I welcome your thoughts on this matter at any time, and hope you will not hesitate to contact me in the future.

Sincerely,



Strobe Talbott  
Acting Secretary

FAX COVER SHEET

DATE: \_\_\_\_\_  
PHONE: \_\_\_\_\_  
TO: STEPHANIE  
FROM: KIM  
SUBJECT: \_\_\_\_\_  
COMMENTS: CONFIDENTIAL  
\_\_\_\_\_  
\_\_\_\_\_

This document is 3 page(s) excluding this cover sheet.

Reply to: (907) 586-1476 (fax)  
(907) 586-1776 (voice)

Fwd: ANC PFC Testimony

**Subject:** Fwd: ANC PFC Testimony  
**Date:** Thu, 18 Feb 1999 12:14:08 -0800  
**From:** Cliff.Argue@AlaskaAir.com, Susan.Mellin@AlaskaAir.com  
**Organization:** Alaska Airlines  
**To:** trust@ptialaska.net


Kim, as we discussed/Susan

Here is the "final" version of my testimony at tomorrow's hearing.

Bob--Please note company position. I understand Kim at AACA, while officially staying neutral, may be doing some behind the scenes lobbying against PFC's at ANC. No action needed now, but you may want to be alert at the next Board meeting.

Cliff

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 PFC Testimony.doc	<b>Name:</b> PFC Testimony.doc <b>Type:</b> Download File (application/msword) <b>Encoding:</b> base64
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TESTIMONY OF  
CLIFFORD T. ARGUE  
ALASKA AIRLINES  
BEFORE THE  
ALASKA STATE LEGISLATURE  
JOINT HEARING  
SENATE TRANSPORTATION COMMITTEE  
AND  
HOUSE TRANSPORTATION SUBCOMMITTEE

February 18, 1999

Mr. Chairmen and Members of the Committees:

My name is Clifford Argue. I am Staff Vice President of Properties and Facilities for Alaska Airlines and also serve as Chairman of the Anchorage/Fairbanks Airlines Airport Affairs Committee, an organization representing the some 25 airlines who have signed operating agreements at and serve the two airports. My comments today reflect the position of Alaska Airlines as well as several other members of the committee including Reeve, Delta, Northwest, Fed Ex, United and American, some of whom you will also be hearing from directly.

I would like to commend your committees for your interest in Passenger Facility Charges (PFC's), and for holding this hearing today.

We support the imposition and use of PFC's, at the \$3 amount, as an appropriate funding source for airport projects which meet the statutory and regulatory criteria of safety, security, capacity, noise mitigation, or enhancement of competition AND which have been otherwise reviewed and approved by the airlines as necessary. There is a very well defined airline consultation process set forth in the PFC law and regulations which must be followed by the airport operator separate and apart from any approval required in the airline/airport operating agreements.

The Terminal Expansion Project at Anchorage International Airport is certainly one for which PFC funding makes sense. Most of the airlines would endorse the imposition and use of PFC's to help fund this project, either through direct capital payments or to help offset debt service on the \$179 million in revenue bonds already issued or the forthcoming additional \$25 million to be issued in the near future to bridge the FAA Letter of Intent.

Further, there are various other projects at Anchorage and some at Fairbanks as well that would be worthy candidates for PFC funding to reduce the impact on airline rates, fees, and charges paid to the airports. These projects include planned airfield, ramp, and terminal work at both locations.

You have heard and will continue to hear that Alaskans are already paying PFC's everytime they travel out-of-state, and none of this money benefits State DOTPF airports. This is very true. In the rest of the country, some 300 airports serving all sizes of communities have PFC's in place with a total collection estimated at more than \$23 BILLION over the next 20 - 25 years. ANC and FAI are among the only airports of their size not collecting PFC's. In state, passengers departing Juneau and Ketchikan airports are now paying \$3 PFC's.

Despite initial concerns by some airlines and communities, there has been no hard evidence that the addition of PFC's to the ticket cost has made any difference in air travel demand, even in those markets where the personal auto, bus, or train are reasonable transportation alternatives.

PFC's, at the current \$3 level, used correctly and with prudence, are a good funding source for justified airport projects, allowing the user - the passenger - to pay directly for the facilities enjoyed. PFC's were contemplated in the process of developing the plan for the Anchorage Terminal Expansion. Now is the time to begin the formal application process with the airlines and FAA to get PFC's in place as quickly as possible.

Thank you for the opportunity to offer these comments. I'll be glad to answer any questions you may have.

# FAX TRANSMITTAL SHEET

## STATE OF ALASKA TONY KNOWLES, GOVERNOR

Office of the Governor  
P.O. Box 110001  
Juneau, AK 99811-0001

PHONE: (907) 465-3500  
FAX: (907) 465-3532

Please deliver to: FAT CARTER Location: \_\_\_\_\_

Fax number: 3872 Phone number: \_\_\_\_\_

Number of pages including transmittal sheet: \_\_\_\_\_

Comments: STROBE TALBOTT'S RESPONSE

Date: 2/18 From: MATTHEW Phone: 3939



# ALASKA MINERS ASSOCIATION, INC.

3305 Arctic #202, Anchorage, Alaska 99503 FAX: (907) 563-9225 Telephone: (907) 563-9229

December 16, 1998

Honorable Tony Knowles  
Governor  
State of Alaska  
Capitol Building  
Juneau, AK 99801

Dear Governor Knowles,

Thank you again for speaking at the Northwest Mining Association. Throughout the remainder of the conference I heard many positive comments about your speech. Your presence at the conference and your speech set a very positive tone for Alaska. This was in sharp contrast to the very negative view mining companies have of some other western states. I trust that you and your staff enjoyed the event also.

After such a positive experience as the NWMA conference, it is unfortunate that I need to bring a more serious issue to your attention. It appears that Alaska's opposition to the Tulesquah Chief project is about to become a major international incident. I know from your past comments to me that you honestly believe the Tulesquah Chief project constitutes a serious threat to salmon stocks. However, it is our concern that you may not have been given all the relevant facts in this matter.

I first learned about the latest political escalation of the Tulesquah Chief issue last week. Since then I have done some additional investigation of the issue. Here are some of the facts as I now understand them:

1. The mine review and permitting process used for Tulesquah Chief is a new process and this project is among the first major mines to be permitted under it. This process was developed over several years and is considered to be the best, most effective, most stringent, etc. ever used in Canada. This process has been touted throughout Canada and internationally as how environmental permitting should be handled and is considered to be at least as thorough as the U.S. permitting process.
2. Many see the Tulesquah Chief issue as political fallout from the B.C./Alaska "fish wars."
3. Canadians see Alaska's opposition to the Tulesquah Chief as an affront to Canadian sovereignty.
4. The Canadians point to the recent meeting in Vancouver as an indication that Alaska is not interested in addressing the technical facts of the project. They point out that *with the possible exception of one person from DEC, no one familiar with the technical aspects of the project were*

involved in the meeting. Represented at the meeting were: US State Department, 2 persons; US Fish & Wildlife Service, 3 persons; EPA, 3 persons; ADF&G, 2 persons, DEC, 1 person. No one was present that was acquainted with or would understand the mining, geotechnical, engineering, etc. aspects of the project.

5. It is also the view of B.C. officials that, even though project owner Redfern Resources Ltd. spent over \$100,000 answering Alaska's questions about the project (in addition to the several million dollars spent on environmental studies and the permitting process), Alaska has not reviewed or seriously evaluated those answers.

6. The Tulesquah project will clean up currently existing historic acid rock drainage and will seal all such rock in mined-out underground workings.

7. Several Canadian provinces are now becoming concerned and energized over the Tulesquah Chief issue. It is their concern that any industrial activity in Canada that is in a watershed which flows into the US will become a target for environmental extremist challenge through the International Joint Commission. This would include resource development activities as well as farming and any other industry or municipality. If an activity 10 miles inside Canada (Tulesquah) can be challenged, they are concerned that activities 20 miles, 50 miles, 80 miles, etc. inside Canada could also be challenged anywhere along the U.S.-Canada border.

8. Some officials in Canada believe that American Rivers, Sierra Club Legal Defense Fund (now known as Earth Justice) and Vice President Gore are involved in this issue, just as they were in blocking the Windy Craggy project.

9. Members of Parliament from several provinces are preparing to raise this issue in the House of Commons in the near future.

As stated earlier, you may not have all the facts in this issue. We urge that the Tulesquah Chief project be given a new and thorough review by staff that understand mining, acid rock generation and control, construction of tailings impoundments, avalanche hazards, etc. If the Tulesquah Chief project is allowed to become an international incident, it will be to the detriment to our relationship with our closest neighbor and long term friend and to the detriment of the mining industry in Alaska. A significant part of the new mineral investments occurring in Alaska are by Canadian companies and an international incident between our countries would make Canadian investors very skeptical of supporting such investments.

We felt that it was important to communicate our concerns in this matter to you directly. If there is any way we can be of assistance in this matter please contact me.

Sincerely,



Steven C. Borell, P.E.  
Executive Director

# **TAKU RIVER RECREATION ASSOCIATION**

**P.O. Box 240295  
Douglas, AK 99824**

March 21, 1999

Senator Drue Pearce  
Alaska State Legislature  
Capitol Building  
Juneau, AK 99811

Representative Brian Porter  
Alaska State Legislature  
Capitol Building  
Juneau, AK 99811

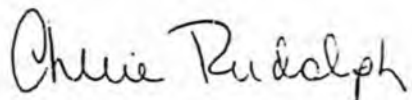
Dear Senator Pearce & Representative Porter:

Our organization represents over 130 recreation cabin and lot owners and users of the Taku River. Several members were introduced to the Taku river by their parents and have river background and experiences dating back more than fifty years. TRRA members are very familiar with the history of the various mines that have operated on both sides of the border in the Taku valley.

When the previous owners of the Tulsequah Chief announced plans to evaluate the potential for re-opening the mine fifteen years ago, we established and have maintained contact with them to insure current communications. Our group has continually stated that we neither support nor oppose the mine. The project is located in Canada and the approval of all permits is their responsibility. We have asked Redfern at several public meetings and by letter (copy attached) to please address our concerns about downstream water quality. To date, we have never received a response. Redfern or any operator of the Tulsequah mines must be prepared to insure the environmental quality of the river as it flows through Alaska. We do not want to experience a situation like the soil contamination at Skagway's waterfront. Alaska had no opportunity to secure a commitment or ownership of any environmental problems stemming from the Anvil mine had no responsibility to assist the state in dealing with these problems.

Before adopting resolution SCR NO.7 or HCR NO. 4, we request the legislature's support in urging Redfern Resources to answer the water quality issues important to the cabin owners on this side of the border. American Rivers are pushing hard to obtain a "Wild & Scenic River" designation on the Taku because of downstream concerns. We are opposed to this effort but it would help if Redfern would improve communications and not remain cavalier to our questions. The Taku River has been a major commercial trade and recreation route into the interior for hundreds of years and we want to keep it that way.

Sincerely

A handwritten signature in cursive script that reads "Cherie Rudolph". The signature is written in dark ink and is positioned above the printed name and title.

Cherie Rudolph  
President

Cc: Members of the Alaska Legislature

# TAKU RIVER RECREATION ASSOCIATION

P.O. Box 240295  
Douglas, AK 99824

October 28, 1997

Mr. Norm Ringstad  
Project Committee Chairman  
Environmental Assessment Office, Second Floor  
836 Yates Street  
Victoria, B.C. V8V 1X4

REF: Tulsequah Chief Mine Project

On behalf of the members of the Taku River Recreation Association, we thank you for coming to Juneau on October 3<sup>rd</sup> with officials from Redfern Resources Ltd. to explain the current status of their plans to reopen the mine. The TRRA members represent the 130 plus property owners and users of the Taku river below the border. Because the project is located in Canada, we do not intend to take a position on the permit under review, but after the presentation, we do have several questions and concerns we would like to raise.

While the mine location and the road will lie in Canada, the water flow heads toward the U.S. border and is in Alaska in less than five miles. We wonder why there has been no contact or dialog with any property owner below the border? Our members have years of local experience on the river and many remember when the mine was operating in the 1950's. Local knowledge should be useful in understanding the impacts of the annual Tulsequah floods-especially on Flannigan's slough: on fish and wildlife migration patterns and on navigation upon the river itself (just to name a few). Why has the Alaskan side of the Taku river been excluded from any dialog during the preparation of the environmental assessment?

Additional questions are:

1. How and where will the equipment be staged that will build the road? Will it be flown in by helicopter in pieces and reassembled at various road headings? How will the fuel be hauled into the project before the road is complete? Officials indicated that Juneau would see minimum impacts during operation of the mine, but nothing was said about the impacts during the construction phase.
2. The impacts of the annual Tulsequah floods do affect Flannigan's slough and the lower Taku river. The Redfern presentation discounted the significance of these floods and stated that impacts on Flannigan's and other areas below the confluence of the Tulsequah and Taku would not be addressed. The Alaska border is 85 ft. above sea level which means the mine site will be over 100 ft. All liquid discharges, both natural and operationally created, will head directly into the Taku and twenty miles downstream to tidewater. After many years of

experience on the river, our members respectfully disagree with your current position and would ask that the impacts be addressed.

3. Will there be occasional uses of barges originating on the U.S. side? Where will they stage? What are the sizes, type of propulsion and planned frequency? If they are used, even during the construction phase, how will accelerated bank erosion be reduced? The river on the Alaska side is not as "wild & scenic" as some would like the public to think. There are 135 deeded lots and over 40 recreation cabins built between the border and the Taku Lodge, a span of about ten miles. Alaskan's have been using this area for a variety of recreational purposes for more than sixty years and the Tlingits sailed up and down the river for hundreds of years. The Taku river valley is not an untouched, seldom visited area as claimed by the project opponents.
4. What is the frequency and nature of flights originating in Juneau and flying up the valley? Often our coastal weather conditions may make Juneau the only "open" airport. Is Juneau a backup for routine flights or only in the case of emergencies?
5. Redfern should not overlook the need to control access to the road at the lower end (mine site), especially after the project is ended. During mine operation, we assume access will be controlled, but what happens after the mine is reclaimed. Boats could easily haul "four wheelers" to access the road at the mine. Will the entire length of the road be removed to prevent passage by any type of motorized vehicle?
6. Finally, what financial instrument will be required (such as a performance bond) to insure fiscal resources are available to clean-up or correct problems that might occur on the U.S. side of the Taku river as a result of mine operations? Where will water quality monitoring stations be located on the Alaska side? Where there is a difference in water quality standards between the U.S. and Canada, which regulations will prevail?

Thanks for giving us the opportunity to comment on Redfern's plans and communicate our concerns and questions. We look forward to their responses.

Sincerely yours,

Cherie Rudolph  
President

cc: Membership of TRRA  
Senator Ted Stevens  
Senator Frank Murkowski  
Congressman Don Young  
Alaska Dept. of Fish & Game  
Alaska Office of Governmental Coordination  
U.S. Forest Service  
Community Development Dept. - City & Borough of Juneau

FISCAL NOTE

STATE OF ALASKA  
1999 LEGISLATIVE SESSION

BILL NO. HCR 4

Revision Date: 3-23-99  
Title: Tulsequah Chief Mine  
Sponsor: SPEAKER PORTER  
Requester: \_\_\_\_\_

Dept. Affected \_\_\_\_\_  
BRU \_\_\_\_\_  
Component \_\_\_\_\_  
Component Serial No. \_\_\_\_\_

Expenditures/Revenues (Thousands of Dollars)

OPERATING EXPENDITURES	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05
Personal Services	0.0	0.0	0.0	0.0	0.0	0.0
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

CAPITAL EXPENDITURES						
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CHANGE IN REVENUES [ ]						
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FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
1091 Designated Program Receipts						
<b>TOTAL</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY98) cost: \_\_\_\_\_

POSITIONS

Full-time						
Part-time						
Temporary						

ANALYSIS: (Attach a separate page if necessary)

No Fiscal Impact

Prepared by Lorali Meier, House Resources Aide Phone 465-3715  
Lorali Meier Phone \_\_\_\_\_  
Date 3-23-99

# ALASKA STATE LEGISLATURE

SPEAKER OF THE HOUSE BRIAN PORTER

## Sponsor Statement

### House Concurrent Resolution 4

#### Tulsequah Chief Mine

HCR 4 supports continued cooperation with British Columbia in working towards environmentally responsible resource development on the Tulsequah Chief Mine. The resolution further urges Governor Knowles to withdraw the request for a referral of the project to the International Joint Commission under the Boundary Waters Treaty.

The Tulsequah River basin has been an active mining area since the 1920's. The downstream surroundings of the Tulsequah and Taku Rivers have continued to produce healthy runs of salmon throughout mining activity.

The owners of the Tulsequah Chief Mine have gone through extensive environmental research and consultation for three and a half years. This process included numerous public meetings on potential local and transboundary impacts. The ministries of Canada and British Columbia have graciously notified the permitting agencies of Alaska and the United States of their findings.

The permitting process used for the Tulsequah Chief Mine is a new process that has been developed over several years. The Canadian government considers this process to be the best and most effective ever used in Canada. This process has been internationally touted as how environmental permitting should be handled. It is considered to be *at least* as thorough as the Alaskan/U.S. permitting system.

*The government of British Columbia found that after more than three and a half years of public comment and review by numerous permitting agencies, there were no overwhelming environmental concerns that could not be adequately addressed in the subsequent individual permitting processes. On March 19<sup>th</sup>, 1998, following comment by a 13 member international committee, the B.C government issued the overall environmental assessment certificate.*

HCR 4 demonstrates the Alaska State Legislature's support for the sound, responsible, development of the Tulsequah Chief Mine through the Canadian permitting process.

**ENVIRONMENTAL ASSESSMENT OFFICE**  
**TULSEQUAH CHIEF PROJECT**  
**TECHNICAL ISSUES RAISED BY US AGENCIES**  
**BACKGROUND - OCTOBER 1998**

In the context of the government-to-government discussions planned for Vancouver on November 16th and 17th, this paper provides more information and explanation of how issues raised by U.S. review agencies have been resolved or are known to be resolvable during the next stage of federal and provincial statutory permit and approval application review and decision. Also, at the Vancouver meeting Canada and B.C. request clarification and further explanation by key U.S. review agencies regarding issues raised, in order to provide a focused agenda for proposed further technical discussions.

This response document has been compiled by the British Columbia Environmental Assessment Office, with the input and assistance of:

- British Columbia Ministry of Environment, Lands and Parks (BC-MELP);
- British Columbia Ministry of Energy and Mines (BC-MEM);
- Department of Fisheries and Oceans (DFO); and
- Environment Canada (EC).

It should be noted that in general terms the working relationships between British Columbia and Canadian federal agencies and their counterparts in the U.S. (both Alaska and U.S. federal) can be characterized by cooperation and professionalism. This has been the case for the overall EA reviews of the SNIP, Eskay, Sulphurets, Premier Silbak mines, as well as the Tulsequah project. In all project reviews and permitting, British Columbia and federal Canadian agencies have taken into consideration the potential for transboundary water quality and fisheries issues during permit application reviews, follow-up monitoring and compliance assessment. Continual efforts are made to ensure information exchange and opportunities to review and comment on applications and monitoring results, based on the interests identified by U.S. agencies. To date, this relationship has worked well, and issues such as those raised by the U.S. agencies in the Tulsequah review have been addressed within the process. As well, Canada and British Columbia have formally invited Alaska State and U.S. federal review agencies to fully participate in the review of major statutory permit, license and approval applications and authorizations, as the project development proceeds.

In each of the cases identified, significant project-specific continuing relationships have been maintained with U.S. agencies, during the statutory permitting stage and after the EA review has been completed. The Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, U.S. National Marine Fisheries Service and Region 10 EPA have continued to be involved. BC-MELP staff has endeavoured to ensure that when downstream U.S. residents and/or agencies raised any concerns, BC-MELP staff have consistently taken the opportunity to work with U.S. counterparts to resolve all concerns and issues.

An example would be the concerns raised by the citizens of Hyder, Alaska in 1990 regarding rumours of a massive cyanide discharge from the Westunin Premier gold mine, 26-km

upstream on a tributary of the Salmon River which enters the Portland Canal at Hyder. In order to gain the confidence of the public regarding the regulation and monitoring of the mine, Alaskan and U.S. federal regulators met with the BC-MELP and EC counterparts. The regulators toured the minesite, reviewed the monitoring data, interviewed mine personnel and conducted a public meeting in Hyder to present findings and answer questions. The program was successful and all regulators were satisfied that there was no truth to the rumour, and that the pollution control works, regulations and monitoring of the mine were satisfactory.

As part of the Eskay Gold/Silver project EA review, on a tributary of the Unuk River, existing water quality monitoring data and information from the site on the river at the Canada-U.S. border were provided by the mine proponent in its EA report. There have been no issues raised regarding the potential for transboundary water quality or fisheries resources.

The SNIP gold mine located near the Lower Iskut River received an EA approval in 1990 and is currently in operation. An environmental effects monitoring program is in place and, to date, the results show that all aquatic resources in the Sky Creek and Monsoon tributaries upstream of the Iskut River are being fully protected.

There is an existing Canada-BC agreement that monitors and reports on water quality at Canada-U.S. border stations on a regular basis. There are a number of such stations located on rivers in northwestern British Columbia and there is a process for review and assessment of the results.

### SUMMARY OF TECHNICAL RESPONSES

The following technical responses are in order of those issues raised in the August 28, 1998 letter from the U.S. State Department to the Canadian Embassy in Washington.

#### 1. MINESITE DESIGN INCLUDING LONG-TERM SITE MAINTENANCE

The following further information and clarification from the U.S. EPA technical specialists has been requested by the geotechnical and mine inspectors of BC-MEM. With this additional information available at the Vancouver meeting, BC-MEM staff will be able to understand the perceived issues so that BC-MEM can explain how such issues are addressed in BC-MEM's permitting process.

- What are the U.S. methods used for determining flood and mass movement events?
- What U.S. criteria are used to determine that a proposed facility (e.g. earth dam impoundment) would be considered a permanent structure?
- Alaska DEC advised BC-MELP and BC-MEM of the U.S. methods<sup>1</sup> that would be used to determine the 200-year flood. Given the time period that data is available for the site, how would this approach differ from the approach used during the Tulsequah Chief project assessment?
- The Shazah Creek alluvial fan is post-glacial. What mine design parameters would be

<sup>1</sup> Stanley H. Jones and Charles B. Fahl, 1984. Magnitude and Frequency of Floods in Alaska and Contiguous Basins of Canada. U.S. Geological Survey Water Resources Investigations Report 93-4179

- impacted by refining the age of the Shazah Creek alluvial fan?
- A suitably conservative flood and mass movement event will be used for design. What mine design parameters would be impacted by identifying all potential debris in Shazah valley?
- What US methods would be used to determine scour, and from what level of event?
- What forms of erosion protection are proposed as alternatives to a launching apron? Why are they to be preferred?
- Large equipment will remain on site after closure and the site will be accessible by air. What is the technical requirement for a feasibility study related to long term access?
- What forms of erosion protection are proposed as alternatives to the launching apron?
- What technical benefit would they provide to the launching apron?

## 2. LONGTERM CUMULATIVE ENVIRONMENTAL IMPACTS

British Columbia and Canada review agencies conducted a review of the potential for cumulative effects in the Tulsequah River watershed, and the processes currently in place to deal with such future activities. In the near term, the potential for re-opening the historic Polaris-Taku gold mine across the river from the Tulsequah Chief project was the only other mine project identified. All existing water quality data and information for this site was used in a semi-quantitative cumulative effects assessment, the results of which were provided as part of the overall Tulsequah project review.

Although additional mineral claims exist in the Tulsequah and Taku River watershed, there are no plans for exploration or potential development that could be found during the review of the Tulsequah project. As well, the British Columbia Ministry of Forests has indicated that no significant commercial forest values exist in the area of the Tulsequah and Taku valleys currently without access.

A land use planning process, to begin in the future (about 5 years) will include a further assessment of other resources values, land use potential in the area, and long-term land use designations. It is within this planning and land use decision-making process that future land uses and potential for effects and management strategies can be better defined.

The information and analysis provided in the Tulsequah project review, and further elaborated in the May 1998 response document, has fully considered the issues raised and the future processes have been fully described.

## 3. WATER QUALITY

The following brief synopsis of procedures related to regulation of discharges at mining operations pursuant to the British Columbia *Waste Management Act* (WMA), is provided to assist U.S. review agencies in understanding the rigorous project specific permit limits, monitoring and compliance assessment programs that will be in place as the Tulsequah project is developed and operated.

### Permit Limits

Outlined in more detail below is a description of how BC-MELP sets effluent permit quality and quantity standards from receiving water criteria and objectives (sometimes called guidelines) and in consideration of provincial effluent objectives and the *Metal Mining Liquid Effluent Regulations* limits of the *Canadian Fisheries Act*. These permit standards are designed to be protective of the most sensitive receptor in the receiving environment and are necessarily conservative, usually more so in the early years of a mine operation.

### Monitoring

Monitoring begins with the accumulation of a baseline characterization of all receiving waters for the project. For the Tulsequah Chief project this is described in the Project Report and through agreements reached during the project certification process, and will be ongoing until project construction begins.

When operations begin the WMA permit will specify a comprehensive monitoring program for the discharges and the receiving environment, including the Taku River at the US border. This will include chemical, physical and biological components. The receiving environment portion, referred to as environmental effects monitoring (EEM), will be ongoing during operation and closure and influence any decisions regarding the adequacy of the permit standards for quality, quantity and monitoring. The mine proponent is responsible for conducting or contracting the work. The accuracy of the monitoring is assured by:

BC-MELP Pollution Prevention Program staff undertaking audit sampling; and  
the BC Environmental Data Quality Assurance Regulation which certifies and audits sampling, analyses and laboratories.

If requested, these data can be shared on a routine basis with U.S. agencies.

### Compliance Assessment

In accordance with the BC WMA permit, monitoring data for the Tulsequah Chief mine will be reported on a weekly and/or monthly basis and reviewed for compliance. Any noncompliance automatically triggers an Enforcement Routing Sheet that outlines the non-compliance, and is circulated on a first priority basis for determination of the appropriate enforcement action according to an escalating response policy. This ensures any exceedence of a permit limit is brought to the attention of both regulators and the mine proponent, and a body of evidence is gathered in an orderly fashion for the courts if warranted.

In addition, a noncompliance list is published by BC-MELP on a semi-annual basis that lists all operations, which have had significant noncompliances for the reporting period.

### Suggestions for Addressing Outstanding Concerns

Having reviewed the issues raised in the August 28, 1998 letter from the U.S. State Department, BC-MELP staff provides the following suggestions as to how technical reviewers can move towards resolution of the issues. These suggestions arise from previous discussions with Alaska DEC staff, and follow-up correspondence with them (May 8 and 19, 1998 letters

to Deena Henkins) regarding how BC-MELP's WMA permitting process, including ongoing baseline studies, are comparable to the Alaska Mixing Zone Regulation. Several aspects of the current regulatory system may alleviate concerns about the uncertainties related to the ultimate fate and impact of contaminants generated by the mine and contained in mining related discharges.

WMA permit(s) for the mine operation will set limits that minimize the total contaminant loading to the environment to acceptable levels. Permit conditions will include discharge concentration and volume limits for contaminants of concern, which will be based on provincial effluent objectives and federal standards. In addition, published water quality criteria and/or site specific objectives (as defined by the Alaska Mixing Zone Regulations) will be met at the mixing zone boundary. Permit conditions will also include spill cleanup and contingency planning, as well as contingencies (groundwater pumping and treatment) to eliminate the potential for impacts from tailings pond seepages and contingencies (built in additional impoundment capacity) for waste water handling and treatment system. Permitting will also include regular government inspection, auditing and enforcement of the mine's environmental performance throughout the life of the project and the post closure period. As well, the development and use of an environmental effects monitoring (EEM) program dealing with all contaminant loading sources associated with the project (road and minesite) which may enter aquatic environments will be implemented as required by the BC WMA permit. The EEM program will be used to fine tune discharge limits as required on an ongoing basis. Each of these permitting and monitoring components will be developed using the accumulated knowledge and experience of Canadian and British Columbia regulatory agencies, as well as the advice of U.S. Federal and Alaska State agencies.

In answer to specific technical concerns outlined in the letter, the following responses are provided.

*Fate of contaminants in the aquatic environment:*

Contaminants, which are discharged under BC WMA Permit, will by design be quickly diluted and dispersed in the mixing zone of the Tulsequah River. Even so, conditions in the mixing zone will be non-acutely toxic to fish. The design of the treatment and discharge system will be such that suspended particulate sources of contaminants are minimized so that secondary reservoirs of metals in the river which could become available to aquatic life do not occur. Further efforts are also underway to document where there may be sediment depositional zones in the discharge course so that they can be monitored for contaminant accumulation as part of the EEM program. The annual glacial outburst cycle in the Tulsequah River watershed will tend to overwhelm any impacts associated with the development of secondary reservoirs of metals in depositional sediments, if they occur. These seasonal events create major changes in channel morphology and are associated with a huge amount of bedload movement past the minesite and mixing zone.

*Chronic toxicity:*

It is the practice of the Pollution Prevention Program of BC-MELP to include chronic toxicity testing wherever possible in mining proposal evaluation. At the pre-development stage, BC-MELP has not had the opportunity to acquire representative samples of the range of discharges from the mine site to conduct a comprehensive suite of site specific chronic toxicity tests.

However, this will be required prior to discharges occurring, and as opportunities associated with milling or treatment plant tests arise. It will also occur as a main component of the ongoing EEM program that will be required under BC WMA permit. In addition to this safeguard, BC-MELP experience with chronic toxicity testing at the Eskay Creek mine project using the same wastewater treatment technology as proposed for Tulsequah Chief, indicates a satisfactory record.

Most recently chronic toxicity test results from the EEM program have been used to trigger toxicity identification evaluation (TIE) procedures aimed at eliminating a toxic component of the mill flotation process.

#### *Discharge chemistry predictions:*

Discharge chemistry prediction is an iterative process that began as part of the EA review, and will continue as required under the BC WMA permit. While the EA review determined that the project warranted an "approval in principle", the EA review did not pre-determine the outcome of any of the proponent's required permits or licences. With the EA review's "approval in principle" the proponent now has permission to apply for all of the licences and permits required for the works associated with the project. With regard to effluent, there are two key legislative requirements one, under the Canadian *Fisheries Act*, and one under BC's WMA. The terms of both laws must be met prior to any effluent discharge.

The BC WMA prohibits the discharge of effluent without a permit. The proponent is required to apply for a BC WMA permit, and the permitting process requires that the company characterize effluent discharge chemistry prior to a BC WMA permit being issued. BC-MELP staff, in consultation with other provincial and federal agencies, determines the necessary quality standards of the effluent, and require treatment to those standards as a term of the permit. Treatment required under the permit must be established prior to discharges occurring. BC WMA permitting includes ongoing discharge and environmental effects monitoring.

BC-MELP has determined at a conceptual level that the treatment plant technology proposed by the company, and accompanied by "real world" examples of its use and performance, is capable of meeting the legislative requirements of the BC WMA which are comparable to the Alaska Mixing Zone Regulation. However, it is through the permitting process that the company is required to demonstrate that the BC WMA requirements will be met.

In combination, the requirements of the Canadian *Fisheries Act* and the BC WMA permit ensure that any discharge is not acutely toxic and that there will be no measurable impacts beyond the initial zone of influence.

#### *Risks associated with low flow periods:*

Data available to date have provided a coarse (and therefore conservative) estimate of winter low flows in the Tulsequah River, which may be available for dilution of discharges. These estimates are being refined as new data is made available and an adequate database for setting practical limits will be available at the end of 1999 as required by the project report specifications under BC's *Environmental Assessment Act*. A number of measures, that will be made part of the BC WMA permit as necessary, are available to ensure that low flow conditions are recognized and dealt with in terms of discharge planning, so that impacts within

the mixing zone are avoided. These include the use of more than one of the several river channels for discharges if needed, thus taking advantage of additional low flow dilution, and the use of impoundment storage capacity to limit discharge volumes at critical winter low flow periods, if they occur. It is important to keep in mind that discharge will not be acutely toxic and that there will be no measurable impacts beyond the initial zone of influence.

*Use of unproven diffuser technology:*

Diffusers for wastewater discharges are common in BC. The proponent has acknowledged that the dynamics of seasonal flows of the Tulsequah River will present some challenges for their use at this mine. BC-MELP will require the proponent to optimize the design to achieve immediate dilution of discharges, especially in critical low flow periods. Based on the analysis of further data and information, it may be determined that diffuser use is reserved for seasonal periods, or used as a contingency when shoreline or "end of pipe" mid channel discharge equipment does not afford adequate immediate dilution.

*Current discharges at the minesite and transboundary effects:*

BC-MELP is working with the proponent to ensure that a permanent solution to this historic problem will be in place at the earliest possible time, given the constraints of access, and the fact that mining the Tulsequah Chief deposit provides the best options for solving the problem.

*Responsibility for remediating current discharges:*

The proponent is currently under direction of BC-MELP and is responsible for the remediation of the historic discharge problem at the Tulsequah Chief mine site. If the proponent fails to meet this direction and abandons the property, then British Columbia has the right to take action, using the proponent's posted reclamation security. It should be noted that the development of the project is the most cost effective and proven approach to the remediation of the existing Tulsequah drainage.

*Factors influencing toxicity:*

The risk assessment developed by BC-MELP in consultation with the Alaska DEC, and currently being implemented by the proponent addresses the concerns cited in the letter. These include long term exposure to mixtures of metals which may be additive in nature; bio-availability of these metals; physiological effects on reproduction and growth and effects through dietary routes of exposure. In response to the suggestion that there may be issues associated with alteration of pH in the Taku Inlet, BC-MELP has determined that this type of effect is not possible, due to the magnitude of dilution available in the intervening distance.

*Impacts identified prior to certification:*

BC-MELP shares the same goal as U.S. state and federal agencies, in striving to have all of the environmental issues associated with the Tulsequah Chief mine proposal resolved prior to proceeding with project development. It appears as if the concern about when issues will be resolved may stem from the differences in the respective regulatory and institutional structures.

BC-MELP believes that the magnitude of risk associated with the mine proposal was dealt with sufficiently by the Project Committee in rendering an approval in principle certificate decision under BC's *Environmental Assessment Act*. This certificate approval does not fetter the regulatory authority or obligations under other statutory permitting legislation to continue issue resolution prior to any development taking place. BC-MELP is committed to an iterative approach, fully involving U.S. state and federal agencies to ensure that all reasonable measures are implemented to ensure that the Tulsequah Chief project is developed, operated and decommissioned using the most environmentally safe means possible.

*Sedimentation impacts:*

BC-MELP shares the concern regarding "deposition of fine particulate matter on the stream bottom" as it relates to "...quality spawning habitat and productive invertebrate habitat". As a result of this concern, BC-MELP has developed a terms of reference (TOR) for additional baseline sampling and EEM work focussing on areas of the proposed road and minesite where these types of impacts have the potential to occur. These TOR were circulated to U.S. agencies as they were being developed during the project review period, and staff from these agencies participated in discussions used to edit and revise them. Subsequent to this, additional detailed baseline study plans have been developed and implemented by the company, based on the TOR, with further reporting to occur, as new data becomes available. It is intended that the level of study associated with these EEM efforts will be sufficient to qualify as a major advance in impact assessment in both Canada and the U.S. BC-MELP welcomes the input from U.S. federal and state agencies to ensure joint benefits can be realized.

*Toxicity associated with metals in fine sediments:*

It is acknowledged that the impact mechanism as stated is a legitimate concern. BC-MELP proposes to deal with it through the use of WMA discharge permit limits which will control suspended particulate loadings in mine related discharges, and the use of both total and dissolved metals concentration limits for these discharges, as necessary.

#### 4. FISHERIES

Fisheries issues raised in the August 1998 letter focus on aspects of risk assessment. The U.S. response provided two suggestions:

- identify acceptable risks to fisheries resources and
- fully evaluate potential impacts of the project.

Canada and British Columbia confirm that these two issues are indeed the focus of the next stage of the assessment process and of continued consultation with stakeholders including U.S. state and federal agencies. The following provides an explanation of how risks have been evaluated, how the impact assessment process will continue and invites clarification from U.S. state and federal agencies on the specifics of their outstanding concerns regarding fisheries resources.

### Identification of Acceptable Risks to Fisheries Resources

As stated in previous sections, project assessment is an iterative process. At the EA review stage of project assessment, Canada and British Columbia concluded that the proponent's approach to identification of the risks to fish and their habitats was acceptable. The method of identification included an inventory and assessment of risks to fish and fish habitat over all of the proposed road corridors, and the mining discharge receiving environment. The proponent also identified areas where fisheries values existed and where potential impact mechanisms (both infrastructure and causative process impacts) were found to pose risk on those fisheries values.

Once the risks were identified by the proponent in accordance with accepted methodology, the Project Committee (which included Canadian and US federal and provincial and state regulators), assessed the risks and made a judgement regarding whether the impacts can be avoided or adequately mitigated with known technology. Because impacts were found to be avoidable or mitigable with known technology, the Project Committee concluded that the project was not likely to cause significant adverse environmental effects and recommended approval-in-principle of the project.

The next stage of project assessment is the permitting-process and authorizations stage. This stage ensures that the best, most up-to-date information available for designing and regulating the project is used. The following is a listing of the issues which have been considered in the certification process, and which will be the subject of continued evaluation by Canada and British Columbia in the development and issuance of permits and authorizations:

- full identification of sensitive fish habitat and populations near areas where construction will take place;
- full identification of areas posing risk of mass wasting and sediment release resulting from road and mine development, for example, the effects of sediment release on early life history on fish, particularly in combination with metal-rich tailings supernatant or seepage (see "Outstanding U.S. Concerns on the Tulsequah Mine Project" page 3, section 4-Fisheries, second bullet);
- adequacy of sediment control mitigation - evaluation of effectiveness of mitigation measures using Canadian standards for protection of aquatic life and other uses;
- adequacy of sedimentation monitoring and impact assessment;
- maintenance and re-prescription of sediment control measures;
- adequacy of construction timing windows to protect fish during bridge culvert and causeway construction and decommissioning;
- effective controls on unauthorized fishing effort;
- adequacy of environmental reporting and enforcement;
- control of metals leaching from the tailings pond into Shazah Slough;
- adequacy of compensation measures to offset causeway intrusion into fish habitat in the Tulsequah River;
- post closure integrity of the tailings dam and other structures through detailed design and ongoing monitoring and evaluation; and
- effectiveness of mine road decommissioning to control surface erosion and mass wasting.

U.S. state and federal agencies are invited to participate in all further iterations of risk evaluation and mitigation planning, including clarifying outstanding issues and concerns

relating to identification of acceptable risks. Clarification is sought from U.S. state and federal agencies so discussions can commence at the proposed up-coming bilateral meeting in November, 1998.

#### **Fully Evaluate Potential Risks to Fisheries Resources**

In general, a full evaluation of potential risks involves:

- characterization of likely impacts;
- identification, examination and evaluation of proposed mitigation measures; and
- assessment of potential residual impacts after mitigation has been applied.

The EA review is the first stage of full evaluation of potential risks. Full evaluation of potential risks occurs through the combination of the EA review and the permitting-process/authorizations stage.

During the EA review the majority of likely impacts must be identified and characterized, and related mitigation measures evaluated. The significance of a potential impact is determined after mitigation has been applied. This requirement focuses the proponent's and Project Review Committee's efforts in developing measures which will mitigate the magnitude and likelihood of potential impacts. This is done to avoid the pitfalls of developing detailed evaluations of the effects of unmitigated worst-case impacts. This approach provides an opportunity to limit the scope of risk assessment (at the EA stage) within the limits of practicality, while dealing with the range of potential risks of the project as designed.

During the next stage, i.e. permitting/authorization, the focus is on:

- more detailed characterization of likely impacts;
- assessment of potential residual impacts after proposed mitigation has been applied; and
- refinement of mitigation measures to meet regulatory requirements (i.e. conditions for issuance of permits and authorizations).

As mentioned above U.S. state and federal agencies are invited to participate in the full evaluation of potential risks to fisheries in the permitting/authorization stage. Clarification of outstanding issues to be fully evaluated is sought from U.S. state and federal agencies at the up-coming bilateral meeting in November 1998.

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DEPARTMENT OF STATE  
WASHINGTON

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January 27, 1999

*Handwritten initials*  
Dear ~~Governor~~ Knowles:

I am writing in reply to your letter of January 6 regarding British Columbia's Tulsequah Chief mine.

The Department of State, the Department of the Interior and the Environmental Protection Agency fully share Alaska's deep concern about the potential adverse effects that reopening the Tulsequah Chief might have on the Taku River watershed and the salmon fisheries there. Federal and State of Alaska agencies have cooperated closely over the past ten months in presenting our concerns to the Governments of Canada and British Columbia and seeking the proper remedial actions.

The U.S. side has been willing to try to settle these issues directly with the interested parties, to see if our concerns can be met. In so doing, however, we have made clear to Canada our expectation that no action will be taken on the project that would prejudice this matter while it remains open between us. We have reiterated that we would proceed to a reference to the International Joint Commission (IJC) should such prejudicial action take place.

Upon learning that the British Columbia permitting committee was meeting to consider the granting of an access road construction permit, we immediately sought clarification from the Canadian government. We reminded the Canadians that construction on the road would be among the actions that we would consider prejudicial. Since then we have been assured by British Columbian and Canadian federal officials that the permit being considered for the road will be conditional on the mining

The Honorable  
Tony Knowles,  
Governor of Alaska,  
P.O. Box 110001,  
Juneau, Alaska 99811-0001.

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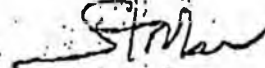
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company first carrying out further investigation of the environmental impact of the construction. Together with Alaskan officials and other federal agencies, we will review closely the conditions set by the permit process to ensure that they are acceptable from the standpoint of impact on the shared watershed of the Taku. We also are seeking further assurances that construction on the road will not be undertaken while U.S. concerns about its impact remain unresolved.

As a result of the November meeting in Vancouver and an additional technical meeting in Seattle in December 1998, the U.S. experts have received additional technical and environmental information concerning the project. Federal and state agencies are assessing this information. We will remain in close touch with your office as we work together to press for resolution of U.S. concerns regarding the Tulsequah Chief.

I welcome your thoughts on this matter at any time, and hope you will not hesitate to contact me in the future.

Sincerely,



Strobe Talbot  
Acting Secretary

Table 1. Summary of EA Project Committee and Subcommittee Meeting Dates, Locations and Purpose

Project Committee Meetings	Location	Purpose	Attendance by US reps.
February 27-28, 1995	Vancouver	Application review workshop <ul style="list-style-type: none"> <li>• Transportation options</li> <li>• Water quality</li> <li>• Fisheries</li> <li>• Tailings pond</li> <li>• Acid rock drainage</li> </ul>	Alaska State rep provided workshop information to state, US federal and US local governments <ul style="list-style-type: none"> <li>• Alaska State</li> <li>• Dept. of Environmental Conservation</li> <li>• EPA</li> <li>• US Army Corps of Engineers</li> </ul>
March 15, 1995	Vancouver	Acid rock drainage Follow-up Workshop	
March 29, 1995	Vancouver	Wildlife Workshop	
July 26, 1995	Smithers	Ad-Hoc Project Committee Workshop	
December 13, 1996	Vancouver	Project Report s.26 Review/Discussion of Deficiencies	State of Alaska
January 13, 1997	Conference Call	Project Report s.26 Conclusion/Clarification of Deficiencies	State of Alaska
March 24, 1997	Conference Call	Status of Review/Change of Project Director	State of Alaska unable to attend
April 18, 1997	Conference Call	Economic Specialist's Meeting -- Barging Option	State of Alaska
April 30, 1997	Conference Call	Status of Review/Discuss Application to Remove Barging From Scope of Project	<ul style="list-style-type: none"> <li>• State of Alaska</li> <li>• US Department of the Interior</li> <li>• US Army Corps of Engineers</li> </ul>
June 17, 1997	Conference Call	Conclusion on Application to Remove Barge and Recommendation to Executive Director	<ul style="list-style-type: none"> <li>• US Department of the Interior</li> <li>• State of Alaska</li> </ul>
September 17, 1997	Conference Call	Project Report Review Update and Discussion of Next Steps	<ul style="list-style-type: none"> <li>• State of Alaska</li> <li>• EPA declined to attend</li> <li>• US Department of the Interior declined to attend as there were no outstanding issues now that barge option had been removed</li> <li>• US Army Corps of Engineers declined to attend as there were no permit requirements and no issues as barge option had been</li> </ul>

			removed
December 15, 1997	Conference Call	Project Report Review Update/ Review Tasks and Timelines to Complete Overall Review and Referral to Ministers by January 21, 1998	<ul style="list-style-type: none"> <li>State of Alaska</li> <li>EPA able to attend first 25 minutes only</li> </ul>
January 15, 1998	Vancouver	Receive Subcommittee Recommendations and Reach Conclusions and Recommendations	<ul style="list-style-type: none"> <li>State of Alaska</li> <li>US Department of the Interior</li> <li>Alaska Dept. of Fish and Game</li> <li>US Fish and Wildlife Service</li> </ul>
<b>ARD/Metal Leaching/Water Quality Subcommittee</b>			
October 22, 1997	Vancouver	Set up Subcommittee and Begin Issue Identification and Resolution Process	State of Alaska
December 11, 1997	Smithers	Discuss Preliminary Responses to Issues Raised	
January 13, 16, 1998	Vancouver	Resolution of Outstanding Issues	<ul style="list-style-type: none"> <li>State of Alaska</li> <li>US Department of the Interior</li> <li>Alaska Dept. of Fish and Game</li> <li>US Fish and Wildlife Service</li> </ul>
January 19, 20, 21, 1998	Teleconference	Resolution of Outstanding Issues	<ul style="list-style-type: none"> <li>EPA/state of Alaska invited but did not participate</li> </ul>
<b>Wildlife/Aquatic and Access Subcommittee</b>			
March 22, 1996 (Ad Hoc)	Richmond	To Discuss and Clarify Information Requests in Project Report Specifications	
October 29, 1997	Vancouver	Set up Subcommittee and Begin Issue Identification and Resolution Process	
December 2, 1997	Victoria	Outline Approach to Developing Grizzly Bear CEA	
January 14, 16, 1998	Vancouver	Seek Resolution of Outstanding Issues and Acceptance of CEA TOR Prepared by Independent Consultant	<ul style="list-style-type: none"> <li>State of Alaska</li> <li>US Department of the Interior</li> <li>US Fish and Wildlife Service</li> </ul>
January 27, 1998	Teleconference	Resolution and acceptance of CEA TOR, Grizzly Monitoring program and to discuss winter trail and road alignment issues	US Dept. of Interior declined to attend

February 12, 13, 1998	Teleconference	Resolution of outstanding wildlife issues	
<b>Cumulative Effects Subcommittee</b>			
November 14, 1997	Vancouver	Set up Subcommittee and Reach Agreement on Scope of Study	
January 13, 1998	Vancouver	Review and Acceptance of Report prepared by Independent Consultant	<ul style="list-style-type: none"> <li>• State of Alaska</li> <li>• US Department of the Interior</li> <li>• US Fish and Wildlife Service</li> </ul>
January 29, 1998	Teleconference	Key participants to discuss follow-up and monitoring plan	

Please note that all Project Committee members, which included the US Department of the Interior, State of Alaska, US Army Corps of Engineers and Environmental Protection Agency, were invited to attend each Project Committee meeting. As most PC members responded to invitations verbally, only those cases where lack of attendance was noted in the minutes, or the PC member wrote in their regrets are noted in the table.

**Table 2. Public Consultation – Summary of Open Houses and Public Meetings in the US**

Date	Location
Open House presentation March 8, 1995	Juneau Alaska – advertised in Juneau Empire newspaper
Open House presentation March 9, 1995	Skagway Alaska– advertised in Juneau Empire newspaper
Open House presentation October 1, 1997	Skagway Alaska– advertised in Juneau Empire newspaper
Open House presentation October 3, 1997	Juneau Alaska– advertised in Juneau Empire newspaper

# COMMENTARY

THE GLOBE AND MAIL • TUESDAY, MARCH 16, 1999

## Fair's fair: The Tulsequah Chief Mine should go ahead

The Tulsequah Chief Mine property lies in remote northwestern British Columbia near Alaska. The project has passed every environmental hurdle known to federal and provincial governments with flying colours and has its approvals. It still can't get started, because of pressure directly from or financed by American so-called environmentalists. This is a case where we decide whether we are a sovereign country.

Some basics follow, of fairness, economics and the environment.

Active work to prove the feasibility of the project has been under way since 1987. The owner is Redfern Resources, a company listed on the Toronto Stock Exchange. About \$27-million has been spent to date to do things right, and a lot of small shareholders have bought stock to finance that.

The company went through extensive research and consultation over 3½ years, including public meetings to deal with all the necessary local-impact issues. This involved ministries of the permitting governments of Canada and B.C., the small town of Atlin and the Taku River Tlingit Band based there, and various branches of the governments of neighbouring Yukon, Alaska and the United States.

On March 19, 1998, after comment by a 13-member international committee, the B.C. government granted a Project Approval Certificate. These mining folks had done all they were required to do, a lot of it no doubt flat-out ridiculous. They had jumped through all the hoops. Fairness



GORDON GIBSON

### IN VANCOUVER

says the mine should go ahead.

As for economics, this project would provide construction jobs for 400, and continuing work for at least 260 for at least nine years (the ore-body limits are not known). It would see an investment of \$160-million (much to Ontario suppliers, no doubt), pay company taxes of \$20-million a year and pay personal taxes in addition to that, while extracting ore (mostly metals, some gold and silver) worth about \$1.2-billion.

Mining jobs are the best-paying in the province. Even city dwellers (and we are an overwhelmingly urban nation now) who tend to think that food comes from supermarkets and money comes from banks should dimly understand that you could pay for a few schools and hospitals out of all this.

As for the environment, not only is this mine clean (sulphites are even replaced underground), but it would also mop up residue from an older, smaller operation. The haulage road would be single-lane gravel, with 12 truck trips a day and access

controlled around the clock (to keep out wildlife poachers and tourists). The mine is underground, not open-pit. We are not talking about the heavy footprint of man.

So, to review: These are good, clean jobs, earning foreign exchange to boost the loonie, paying taxes for social services. Enter the enviros.

A group close to Alaska Governor Tony Knowles persuaded him to ask for an International Joint Commission review last March 31. The IJC is a Canada-U.S. body set up to consider cross-border issues. The stated case had to do with fish and water quality, matters already definitely resolved. Retaliation for Glen Clark's salmon wars may have had something to do with it.

The U.S. State Department conveyed the request and Canada gave a detailed technical response in May. Mysteriously, pressure continued.

Eventually a Sierra Legal Defence Fund document was leaked, describing a multi-eco organization campaign last fall to exploit the "financial weaknesses" of the mine project and to secure a development moratorium on the entire Taku River watershed — about 2 per cent of B.C. Funding over three years of more than \$600,000 was planned, mostly from American sources.

The IJC was a favoured instrument of attack. Redfern is financially stressed. Enough delay (the IJC can be very slow) could kill the deal. And of course, as the document stated, the IJC would be a "key media opportunity."

Allies were needed. The 400-member Taku River Tlingit Band is negotiating a treaty in the area, and the leaked document proposed that up to \$300,000 be spent to "strengthen the community's commitment to legal challenge of the Redfern permit," nudge, wink. A lawsuit has indeed been filed by the band.

Last November and December, every environmental issue was again satisfactorily answered by Canadian negotiators, whose approval is needed for an IJC reference. The American government was even offered continuing oversight of the process. However, that does not resolve the company's financing problem. You can't raise money to fund a mine that could be endlessly on hold.

That means it is now up to Foreign Affairs Minister Lloyd Axworthy to make an unequivocal statement that this matter does not have an international impact (as all government studies show) and will not be going to the IJC — period. Canadian sovereignty demands no less of a defence against a bunch of folks who would rather see northern B.C. as their private park. If you can't build a mine even with full approvals, mining is dead in this province.

The Taku River Tlingit Band's legitimate interests can be worked out in Canada's governmental and legal system; fair enough. But it is simply not appropriate to give foreigners effective control over our resources. Mr. Axworthy has said some helpful things in the Commons on the IJC matter. Now is the time to put them in writing.

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FROM OFFICE OF GOVERNOR

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TONY KNOWLES  
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Juneau, Alaska 99811-0001  
(907) 465-3500  
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OFFICE OF THE GOVERNOR  
JUNEAU

January 6, 1999

Mr. Strobe Talbott  
Deputy Secretary of State  
U.S. Department of State  
2201 C Street, NW, Room 7220  
Washington, DC 20520-7512

*Strobe*  
Dear Mr. Talbott:

Thank you for the Department of State's December 4 letter to Minister Higginbotham, Embassy of Canada, reiterating the United States' concern that no prejudicial action be taken regarding development of the Tulsequah Chief mine while our bilateral discussions continue. In addition, I am writing to let you know that the State of Alaska continues to have strong concerns about the proposed Tulsequah Chief mining project in northwest British Columbia. I seek your assistance in referring this proposed project to the International Joint Commission (IJC) for further review.

The Tulsequah Chief mine is a proposed underground base/precious metals mine located 40 miles from Juneau, Alaska in the Tulsequah River valley, in northwest British Columbia, Canada. Redfern Resources Ltd., the project proponent, seeks to construct an 80-mile road through the Taku River watershed to reopen a previously closed underground mine. The project site is located about 18 miles upstream from the B.C./Alaska border. The proposed mine is located on the Tulsequah River, a tributary to the Taku River, which is a transboundary river under the International Boundary Waters Treaty Act.

The Taku River, and its near pristine watershed, is a prolific producer of all five species of Pacific salmon. These fisheries are fundamental to Southeast Alaska's subsistence, sport, and commercial fishers, and the communities in which they live. The Taku River is also a transboundary river under the Pacific Salmon Treaty with Canada, and fishers from both sides of the border have benefited from joint salmon enhancement projects. By putting salmon habitat at risk, the Tulsequah mine project also puts at risk this successful program to conserve and sustain salmon. As you know, the allocation of this important

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Mr. Strobe Talbott  
January 6, 1999  
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salmon fishery has already been the source of difficulties between Canada and the United States.

Alaska has reviewed all key Tulsequah Chief mine project documents and has participated in numerous project meetings over the past four years. We have, on numerous occasions, made our concerns clear; but they have largely been ignored. The most recent project meeting, held in Vancouver in mid-November, ended with an apparent acknowledgement on the part of Canada that our outstanding concerns were legitimate and deserving of attention through appropriate scientific and land use studies. In spite of this acknowledgement, outstanding concerns have not been resolved.

The state is now in an untenable position. Canada has acknowledged the need to gather basic information on key aspects of mine siting, development, and operation, yet refuses to acknowledge this new information may indeed point to potential critical flaws. Our views appear irreconcilable; and, as such, we believe the matter is suitable for referral to the IJC, as we have maintained since my letter to Secretary Albright last March.

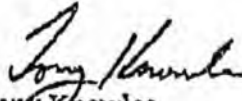
In addition, it has come to our attention that while we participate in bilateral negotiations with Canada, the mine/road permitting process continues to move forward. British Columbia appears poised and ready to issue a special use permit that would allow road construction. We find these permitting actions distressing. Most recently, the preparations for building a winter road, which crosses our joint watershed, are proceeding in spite of the December 4 letter from the State Department to the Canadian Embassy clearly stating the U.S. position that no action should take place on the ground until there is a mutually agreeable conclusion to ongoing discussions. To our knowledge, this is the first time in IJC history that permitting for a project has continued while the project is under review for an IJC referral.

Not only are the Tulsequah Chief mine issues fully ripe for IJC review and recommendation, we are at this impasse just as the IJC is expanding its role to include major watershed review. Specifically, the U.S. and Canadian governments have recommended the IJC look at the possibility of forming binational boards for several major watersheds along the joint border, including the Taku River. We believe IJC involvement is imperative *before* the Tulsequah Chief project irrevocably changes the watershed. Those irrevocable acts would offend and preclude the very purposes the two nations are trying to achieve through a watershed approach.

Mr. Strobe Talbott  
January 6, 1999  
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I would be happy to provide you further detail to ensure that Alaska's level of interest and concern is clear. I believe it is time for the Department of State to firmly urge Canada to work with the United States in a joint IJC referral of the Tulsequah Chief mine development. I look forward to hearing from you about this important matter.

Sincerely,

  
Tony Knowles  
Governor

cc: Victor Comras, Director, Office of Canadian Affairs  
Brooks Yeager, Deputy Secretary, Department of the Interior  
Willie Taylor, Director, Office of Environmental Policy and Compliance  
Department of the Interior  
Mary Beth West, Director, Office of Oceans and Environment Department of State  
Pete Christich, Director, Office of International Affairs Environmental Protection  
Agency

# TULSEQUAH CHIEF MINE PROJECT

## CANADA-BRITISH COLUMBIA

### RESPONSE TO CONCERNS RAISED BY UNITED STATES (US) AGENCIES

NOVEMBER 1998

#### PURPOSE OF THIS DOCUMENT AND BACKGROUND

The purpose of this document is to provide the Canada and British Columbia response to the issues and remedies outlined by US agencies in the November 13, 1998 letter from the US State Department to the Canadian Embassy in Washington, and discussed at the November 16/17 meeting in Vancouver.

This document was compiled by the British Columbia Environmental Assessment Office (EAO), with the input and assistance of:

- British Columbia Ministry of Environment, Lands and Parks (BC-MELP);
- British Columbia Ministry of Energy and Mines (BC-MEM);
- British Columbia Ministry of Forests (BC-MOF);
- Environment Canada (EC), including Canadian Wildlife Service (CWS);
- Department of Fisheries and Oceans (DFO);
- Natural Resources Canada (NRCAN), including Geological Survey of Canada (GSC);
- Inter-governmental Relations Secretariat, Province of British Columbia; and
- Department of Foreign Affairs and International Trade.

In addition to a response to each of the remedies proposed by US agencies, Canada and British Columbia agreed at the November 16/17 meeting to provide additional technical information which is included in Annexes attached to this document and identified in the responses to the remedies.

This document is the third in a series of responses provided to requests from the US agencies subsequent to Canada and British Columbia completing the joint environmental assessment of the Tulsequah Chief mine project (Project) in spring 1998, thereby allowing the Project to proceed to detailed design and permitting stages. These documents collectively provide additional information and analysis to resolve questions and matters of difference. Together, the documents show how the overall review and conclusions and matters to be included during the statutory permitting processes will ensure that the development and operation of the Project, in accordance with statutory permits, licenses and approvals would not create any potential for significant adverse effects on transboundary resources. Previous documents provided to US agencies include:

- May 21, 1998 binder responses of Canada and British Columbia providing further information on issues raised at the April 16, 1998 Canada-US meeting in Washington, DC; and
- October 1998 responses of Canada and British Columbia to continuing concerns raised by US agencies in a letter from the US State Department to the Canadian Embassy in Washington dated August 28, 1998.

US agencies were invited to participate in the overall review of the Project. Alaska State, US Environmental Protection Agency (EPA) and US Department of Interior (DOI) were involved in the work of the Tulsequah Project Committee from fall 1994 to March 1998. As well, the US Army Corps of Engineers (CORPS) were involved up to June 1997 at which time the barge transportation options were formally removed from the scope of the project review.

Information provided to all Project Committee members and agencies requesting material for review included:

- Redfern Resources Ltd. (Redfern) Application report and subsequent addenda (fall 1994/spring 1995);
- Draft Project Report Specifications (terms of reference for further studies based on a review of the Application) for review and comment prior to finalization;
- Redfern's Project Report for both initial screening and for formal review;
- Redfern's application to formally remove the barge transportation options from the scope of the review;
- Draft conclusions and recommendations on the application to remove the barge;
- All addenda material provided by Redfern and British Columbia during the review of the Project Report, and required by review agencies to complete the overall review; and
- Draft Project Committee recommendations to British Columbia Minister of Environment, Lands and Parks and Minister of Energy and Mines.

US agencies were invited to participate in all Project Committee, sub committee and barge transportation review meetings (including telephone conference calls), totalling over 30 during the overall review. As well, Canada and British Columbia established a process to adhere to the provisions of the *Convention on Environmental Impact Assessment in a Transboundary Context*, United Nations 1991, as yet unratified, to ensure that all transboundary notification, information exchange and consultation requirements were met.

The issues and remedies proposed by US agencies do not raise any new concerns or activities that would not normally be addressed during the permitting stage for the mine. The purpose of the overarching British Columbia and Canadian environmental assessment processes was to identify and resolve such issues to a level of detail that would reasonably confirm that remaining issues could be adequately addressed through the British Columbia and Canadian statutory permitting and authorization processes, and to ensure the project would not have significant

adverse environmental effects. This test was met for all issues and it is the permitting processes that will now adequately address the level of further planning and assessment required to satisfy permitting requirements prior to those permits being issued for each project component.

Canada and British Columbia are confident that the remedies proposed by the US can best be accommodated through the detailed Project design, and planning stage and through continuing discussions and input of all parties. Each aspect of the Project requires a co-ordinated review of the applications for the necessary statutory permits, licenses and approvals required as Project development proceeds. In this context, both British Columbia and Canada continue to invite the participation and input of US agencies in this process. We are confident that the proposed remedies in the US State Department letter, as modified by British Columbia and Canada to fit within the Canadian legal framework are acceptable, and that this dialogue has been effective in resolving questions and matters of difference.

## **SUMMARY OF TECHNICAL RESPONSES**

The following technical responses are presented in order of the issues and remedies raised in the November 13, 1998 letter from Victor Comras, Director, Office of Canadian Affairs, United States Department of State, to John Higginbotham, Embassy of Canada, Washington, DC.

### **1. Unresolved mine site design issues including long term site maintenance**

#### **Issue 1(a). Tailing Impoundment**

**US Proposed Remedy 1(a).** (1) Examine alternative tailing impoundment/disposal locations in much more detail to seek an alternative location for a tailing impoundment in a geologically and hydrologically stable area. (2) If both the United States and Canada agree as a result of this examination that no other suitable location exists, establish mutually agreeable design conditions (e.g. probable maximum flood) that reflect construction of a permanent facility and gather necessary data to estimate not only flood flows but associated debris flows. Address these and all associated geotechnical risks in the facility design, to the satisfaction of both governments. (3) Address all long-term (i.e. in perpetuity) maintenance and contingency needs, including costs and means of transporting large equipment to the site, to the satisfaction of both governments. Accomplish these remedies prior to irrevocable commitment of resources to activities on the ground.

**Canada and British Columbia are confident that the approach outlined below fully satisfies remedy 1(a).**

Canada and British confirm the invitation extended to US agencies to participate in a review of the available data regarding the tailing pond alternatives assessment to date and additional background information on the hazards assessment for Shazah Creek in a pre-permitting phase. This additional step will assist Redfern with preparing detailed design(s) and permit

application(s) and will help to resolve US questions and matters of difference. The information available for such a meeting is summarized below, and contained in the Annexes to this document.

**Item 1 – British Columbia agrees to re-examine the alternatives for location of tailing impoundment/disposal facilities.** Redfern was asked to re-examine alternative tailing facility sites and not restrict itself to the seven sites that were originally considered. The best technically and economically feasible site will be selected. BC-MEM experts have conducted a further review of site options. Canada also provided technical assistance in this review. The results of this review are contained in Annex 1.

**Item 2 - British Columbia agrees to review the basis on which an acceptable design will be developed, taking into account all foreseeable risks.** Redfern was asked to re-examine floods and debris flows that could occur in Shazah Creek and Chasm Creek and the ability to safely pass such flows with a tailing facility located on the Shazah Creek fan. These and other associated geotechnical risks will be further addressed in the facility design. Experts from BC-MEM and Canada have completed further review of Shazah site geotechnical hazards. Annex 1 to this document includes the results of this further review.

**Item 3 - British Columbia agrees to ensure all long-term maintenance and contingency needs are addressed as part of the *Mines Act* application review process and before a decision on the permit for that aspect of the project is made.** Redfern was requested to provide additional heavy equipment detail on maintenance and contingency needs in the absence of an access road after completion of mining and mine decommissioning.

At present Redfern has not applied for approval to construct the tailing facility and no construction activities have taken place. This stage of construction will require granting of the necessary permits based on a detailed design addressing British Columbia and Canadian standards. These are equivalent to those of Alaska. In addition to the offer (made above and in person November 16/17) to meet with US counterparts to review the pre-permitting information package found in Annex 1, BC-MEM reiterates the invitation made earlier in the year inviting US participation in the permitting process.

Experts from EC-MEM Geological Survey Branch, Geological Survey of Canada and an external reviewer for BC-MEM have, subsequent to the November 16/17 meeting, reviewed tailing site selection and natural hazards in Shazah Creek. These independent supplementary reviews confirm that the level of work to date by Redfern is accurate and adequate for the joint federal and provincial environmental assessment that was concluded in March of this year.

BC-MEM provides in Annex 1 the supplementary reviews and technical information provided by Redfern. BC-MEM is also providing documents in Annex 2 that provide important information on BC-MEM's mine permitting process, policy and guidelines.

**Issue 1(b). Monitoring and long-term enforcement**

**US Proposed Remedy 1(b).** (1) Develop monitoring plans to ensure tailing impoundment structural integrity and re-vegetation after closure. (2) Assess feasibility of perpetual water treatment if access can only be by air. (3) Develop improved plans for tailing impoundment seepage prevention, seepage return system, and "real time" detection and correction via mine shutdown. (4) Provide monitoring plans for water quality. (5) Provide copies of governmental enforcement plans, implementation schedules for both this proposed mine and past mining activity that has resulted in acid mine drainage, and emergency closure procedures for non-compliance with operational requirements. (6) Require adequate bonding to cover cost of site reclamation to benign state.

**Canada and British Columbia agree with the 6 identified strategies in the US proposed remedy, and outline the following approach to implement the remedy.**

**Item 1. Canada and British Columbia concur in the need to develop monitoring plans to ensure tailing impoundment structural integrity and re-vegetation after closure.**

BC-MEM monitoring plans are site specific. After mining (as well as for the operating phase), if a tailing facility cannot be decommissioned to a "walk away" state, Redfern is required by the Code to retain a professional geotechnical engineer to conduct an annual inspection and submit an Annual Tailing Facility Report. To address environmental and/or safety risks associated with the facility a commensurate level of site presence will be required, depending on the level of perceived risk, including daily, 365 days of the year, if required. The risks are based upon the consequences of failure and the potential for upsets.

Redfern will be adequately bonded by British Columbia (see Annex 2, references 1, 2 and 3) under the *Mines Act* to ensure the necessary work is performed according to Permit obligations and the logistics of "no road" are taken into account. As indicated at the November 16/17 meeting heavy equipment will be kept on site to perform maintenance and repair work, as required. This equipment will be kept on site in a maintenance garage and maintained in good operating condition according to a regular maintenance schedule. Redfern will be required to follow the care and maintenance schedules for the heavy equipment industry. If required, additional heavy equipment would be barged or flown in. Equipment care and maintenance (and replacement) will be addressed in the long term bond held by British Columbia.

The Permit application prepared in accordance with the "Application Requirements for a Permit Approving the Mine Plan and Reclamation Program Pursuant to the *Mines Act*" requires Redfern to prepare a soil survey and soil management plan, and to strip and stockpile topsoil for replacement on disturbed areas where necessary. In this location and climate, revegetation is expected to be easy on most substrates. Natural revegetation of bare soils following glacial retreat can occur rapidly without human assistance as shown at Glacier Bay, Alaska. To meet the requirements of the Permit and the *Mines Act* Permit and Health, Safety and Reclamation Code for Mines in British Columbia (Code), Redfern must demonstrate that it has achieved permanent, stable vegetation and have satisfied land use and productivity objectives. In addition, Redfern must ensure that metal uptake in vegetation is not a problem. Long term monitoring of vegetation could be required under the *Mines Act* Permit, although in this wet environment it is

expected that revegetation will be relatively straightforward. Demonstration is achieved through the submission of Annual Reclamation Reports which are required until all obligations of the Permit are fulfilled to the satisfaction of the Chief Inspector of Mines, and by joint site inspections with the region's reclamation inspector and Redfern personnel.

Mines Branch inspectors conduct regular site inspections by helicopter or small fixed wing aircraft every year as many sites are inaccessible by other means. A team of inspectors including representatives for reclamation, bonding, geochemistry (ARD/ML), geotechnical, health and safety inspectors will participate in inspections. Joint agency inspections often occur as well involving representatives of line agencies at the provincial and federal regulatory levels. The Tulsequah site would be accessed by air out of Atlin.

**Item 2. BC-MELP and BC-MEM agree to the proposed remedy and will request that Redfern provide a more detailed feasibility study as requested by Alaska/US.**

The water treatment plant will be installed to treat contaminated water which is presently flowing from existing Tulsequah workings. The new Tulsequah mine design will not generate any additional acid mine drainage. One of the environmental benefits of the Project will be the ability to construct and operate the treatment plant to control the existing effluent. The longer term objective, of course, will be to institute remediation of the existing underground workings to eliminate or greatly reduce the requirement for treatment at the end of mining. Redfern was asked to resubmit costs and scenarios for long term maintenance of the mine and operation of a water treatment plant.

During the review of the Project BC-MELP concluded that perpetual water treatment was feasible based on: the information presented; and on previous experience with perpetual water treatment (Equity Silver) and air-only mine access (Homestake Snip Gold and Skyline Gold).

**Item 3. Canada and BC-MELP and BC-MEM agree that developed plans for the detection and correction of seepage problems will be required of Redfern.**

The tailing that will fill the tailing facility are very low permeability materials and are the most effective materials for seepage prevention in the long term. It is feasible and possible to improve seepage return, if required. Redfern was asked to expand on this.

The information presented at the November 16/17 meeting demonstrated a low level of risk of seepage contamination such that the proposed seepage monitoring/recovery well network is adequate. Tailing effluent quality from the mill will be monitored daily to ensure that supernatant quality remains low risk. The British Columbia *Waste Management Act* (WMA) permit will require shutdown of discharges from the mill to the tailing impoundment at specified trigger points. These trigger points will be developed during permitting with input from Alaska.

**Item 4. Copies of the requested monitoring plans can be made available once completed.**

Conceptual monitoring plans were provided in Redfern's Project Report and correspondence. Detailed monitoring programs as referred to in Item 3 response above will be developed during processing of the WMA effluent permit in full co-operation with Alaska and the EPA. The first step will be to require that Redfern submit a proposed monitoring program as part of the WMA effluent permit application. Monitoring results will be used to determine any new regulatory requirements necessary for added contingencies and/or remediation.

**Item 5. Inspection and enforcement requirements are defined in British Columbia and Canadian federal legislation and regulations.**

Redfern must submit an Annual Reclamation Report one year after the *Mines Act* permit is issued, and annually by March 31 thereafter. Reclamation inspections will start once the *Mines Act* Permit is issued. Under the *Mines Act* the Chief Inspector of Mines can close the mine for non-compliance with any of the Permit conditions. Any shutdown will be orderly and ensure environmental values are protected. Permit requirements are provided in Annex 2.

DOE has conducted an inspection of the ARD discharge at the site and has advised Redfern, through the issuance of formal Warning letters, that the discharge is in likely contravention of the federal *Fisheries Act*. Redfern has been asked to prepare a mitigation strategy to resolve the problem. If the problem is not resolved in a timely manner, DOE will consider further enforcement action in accordance with its enforcement and compliance policy (see Annex 4).

**Item 6. Canada and British Columbia agree that there must be bonding to cover site reclamation requirements.**

Adequate bonding (see Annex 2, references 1, 2 and 3) will be a condition of the Permit issued under the *Mines Act*. The bond will cover all the reclamation and decommissioning costs including long term maintenance, monitoring, collection and treatment of acid mine drainage. Two policy documents are included in Annex 2 which outline BC-MEM's position on mine reclamation security.

**Issue 1(c) – Migratory Birds**

**US Proposed Remedy 1(c) –** Conduct seasonal avian surveys determining species, habitat use and abundance, in area impacted by proposed development. Mitigate for any loss in habitat of migratory birds.

BC-MEM and BC Ministry of Forests (BC-MOF) will specifically address the issue of migratory bird habitat assessment, conservation and mitigation in the mine and road reclamation permits, respectively. Also refer to Issue 1(b) Item 5 and Item 6.

CWS agrees with the remedy and also agrees that Redfern should mitigate for any loss in habitat of migratory birds. CWS will review Redfern's mine and road permit applications, upon request by BC-MEM and BC-MOF to ensure that Redfern is committed to undertaking all monitoring requirements, and any necessary mitigation measures for the protection of migratory

birds and their habitats prior to the granting of the permits. CWS will provide input to the reclamation permitting process for decommissioning the minesite upon request by BC-MEM.

## **2. Water Quality**

### **Issue 2(a) – Development of design specifications covering mixing zones**

**US Proposed Remedy** – Fully develop design specifications that affect the mixing zone so that it encompasses the minimum practicable area of stream and ensure the specifications meet Alaska's requirements before a decision to proceed with development of the mine.

**BC-MELP** has reviewed the *Alaska Mixing Zone Regulation (MZR)* and agrees with the proposed remedy as it relates to the decision on a *Waste Management Act (WMA)* permit.

Canada and BC-MELP will continue working with Alaskan counterparts to require a minimum mixing zone matching Alaskan requirements and no new discharge will take place prior to issuance of the WMA permit. Canada reviews WMA permit applications for compliance with the *Canada Fisheries Act*. Canada requires no acute toxicity at the end of the pipe and has a compliance evaluation and enforcement program to complement the provincial permit compliance and enforcement procedures. A minimum mixing zone will be a requirement of all agencies.

### **Issue 2(b) –Chronic Mine effluent toxicity**

**US Proposed Remedy** – (1) Conduct a series of chronic toxicity bioassays to determine potential effects of mine and tailing impoundment water to both fish and aquatic invertebrates at most sensitive life history phases. (2) Complete these bioassays before mine development is approved, so that any problems can be addressed through the approved design of water treatment facilities plans. (3) Compare Canada/BC water quality criteria with AK/US water quality criteria to determine if they will meet AK/US standards.

**Canada and BC-MELP** agrees with the 3 items identified in the remedy as it relates to the issuance of the WMA permit and the approach to be undertaken is summarized below.

**Items 1 and 2-** BC-MELP requires chronic toxicity testing prior to authorizing mining discharges, and agrees with the proposed remedy. A chronic and acute toxicity testing program will be part of the pre-development WMA permitting process and will account for the sensitive life histories of fish and aquatic invertebrates which exist within the proposed mixing zone(s). The program will be implemented so that the results will be incorporated in the final design of water treatment facilities, prior to the issuance of final effluent permit authorization under the WMA.

Chronic toxicity testing along with monitoring of receiving environment aquatic life, water quality and sediment quality will be a part an environmental effects monitoring program as part of WMA permitting. It will encompass construction, operational and post-closure periods of the project and will include assessment of both road and minesite impacts to aquatic resources. These assessments will be used to refine the management of the project under WMA permit.

**Item 3 - BC-MELP** has reviewed the water quality criteria (for the protection of aquatic life) of each of the four jurisdictions for the metals which are of concern for this proposed project. In all but one case the BC/Canada criteria meet or exceed those of the US and Alaska. In the case of lead, the US chronic criterion for protection of aquatic life is the most stringent by a factor of six. BC-MELP will apply the most stringent water quality criteria for use in project permitting and mixing zone regulation, where appropriate.

It has been determined that for at least five metals (Al, Cd, Cu, Pb and Zn), ambient concentrations exceed applicable criteria, and that site specific water quality criteria (as defined in the Alaska Mixing Zone Regulation) or water quality objectives (as defined under BC-MELP policy) will be required. Methods to be used in setting these site specific criteria or objectives will be comparable to those used in Alaska and the US. This will be ensured through the development of a terms of reference to be reviewed by the Alaska DEC and US EPA.

#### **Issue 2(c) – Turbidity and Sedimentation**

**US Proposed Remedy – (1)** Conduct adequate baseline studies to determine pre-development stream bottom structure, water quality and discharge conditions through all seasons. Reliably project worst case conditions in order to assess potential effects to fisheries. **(2)** Require emergency settling ponds for any accidental water releases that exceed permitted turbidity standards from initiation of construction due to legacy of old mine.

**BC-MELP agrees with the 2 items identified in the remedy and the approach to be undertaken is summarized below.**

**Item 1 - BC-MELP** agrees that additional baseline studies of the Tulsequah River must occur to adequately characterize stream morphology and water quality, and to project hydrologic conditions during proposed discharges. Terms of reference for these additional baseline studies will be developed in consultation with Alaska DEC and US EPA prior to the 1999 field season. Results of these and previous baseline studies will be incorporated in a risk assessment based on terms of reference previously developed for the Greens Creek project by the Alaska DEC. This risk assessment will project worst case conditions in order to assess potential effects to fisheries.

A reasonably expected worst case scenario (see W. Jackson/T. Eaton letter Nov.27/98, Annex 1) would be a very large very low probability meteorological flood that would impinge against the armoured dike of the tailing facility. This could be expected to cause some damage above the level of armouring. However a release of tailing would not be expected. During operation of the project additional site specific hydrologic data will be collected. This standard 'observational approach' will ensure the adoption of a conservative design to ensure the long term security of

the tailing facility prior to the end of mine operation. In the interim, the 1:200 year flood design criteria for the mine operation period is considered to provide adequate protection.

**Item 2 - BC-MELP**, in consultation with Canada and U.S. agencies, will set permitted discharge concentration limits for suspended sediments (non-filterable residue and/or turbidity) which will apply to runoff during the construction period as well as to discharges of mining related wastewater. BC-MELP will require the installation and use of settling ponds to ensure that waters in excess of permitted suspended sediment concentrations are treated to a satisfactory degree prior to release.

**Issue 2(d) – There is no assurance that the Canadian government will address Alaska's concerns in permits, including specific requirements.**

**US Proposed Remedy –** (1) Identify the specific numerical water quality criteria, effluent limits, monitoring and other requirements which will be incorporated into the permit, such as BMP plans for construction, operation and maintenance of the mine shafts, facilities and roads. (2) Reference the specific Canadian policies and procedures in place that assure compliance with permit conditions, i.e. compliance inspections, enforcement of permit conditions, reporting requirements, corrective actions, sanctions, and penalties. (3) Define a process allowing Alaska to assure that appropriate requirements are included into the permit, including the development and implementation of a closure plan with contingencies for temporary or early closure.

**Canada and British Columbia agree with the 3 items identified in the remedy and the approach to be undertaken is summarized below.**

**Item 1 -** To resolve matters of difference BC-MELP, BC-MEM, EC and DFO will refer all permit applications to Alaska/US agencies for full participation in setting the above noted standards. All concerns will be considered and draft permits containing all limits and requirements will be distributed for review and comment prior to authorization. In addition to BC-MELP's WMA permit dealing with mine discharges, DFO's *Fisheries Act* authorization will contain requirements pertinent to sediment control measures for the access road. A Fish and Fish Habitat Mitigation and Compensation Plan to be developed in support of the *Fisheries Act* authorization will require development of factors listed in Appendix 6 of Appendix 11 of the Tulsequah Project Committee Recommendations Report to BC Ministers, including: independent environmental supervision (Appendix 1 of Appendix 11) with trigger criteria for temporary work stoppages; Road Drainage Management Plan; vehicle servicing restrictions near watercourses; fish passage provisions; fish salvage provisions; application of timing windows for instream work; full bench road design; restrictions on bridge preservatives; and road area revegetation requirements among others.

**Item 2 -** Annex 4 and 5 to this document respectively provide information regarding Environment Canada, Fisheries and Oceans Canada and British Columbia compliance and enforcement legislation, policies, plans and procedures.

More information on Environment Canada's enforcement programs can be found on the following websites:

[www.ec.gc.ca/enforce/prosec/](http://www.ec.gc.ca/enforce/prosec/) , and

[www.pyr.ec.gc.ca/en/programs/eppv/enforce/index.html](http://www.pyr.ec.gc.ca/en/programs/eppv/enforce/index.html)

More information on the British Columbia Ministry of Environment, Lands and Parks compliance and enforcement programs and policies can be found on the following website:

[www.env.gov.bc.ca/epd/cpr/admin/cpr.html](http://www.env.gov.bc.ca/epd/cpr/admin/cpr.html)

Item 3 - Please see Issue 1(b), Item 4, Issue 2(a) and Issue 2(d), Item 1.

### **3. Fisheries**

#### **Issue 3(a) – Toxicity of Mixing Zone to Aquatic Biota**

**US Proposed Remedy – (1) Determine mixing zone toxicity to aquatic biota at all life history phases and (2) develop mitigation plans to fully replace loss of aquatic biota important to sustaining anadromous fish populations.**

**Canada and British Columbia agree with the 2 items identified in the remedy.**

**Item 1 - See response to Issue 2(b) Item 1.**

**Item 2** Canada requires that end of pipe discharge must be shown to be non-acutely toxic. With further refinements in discharge management resulting from the aquatic effects monitoring program as outlined in Item 1, any chronic effects to aquatic resources may be further mitigated. Canada takes a position that source control is the only acceptable approach to pollution, and as such, does not support any regulatory regime that would adversely affect ecological functions to the point that replacement of aquatic biota was required.

On an overall basis, it is expected that the nutrient loadings from treated sewage discharges and blasting residues will enhance productivity in this setting. Experience has shown that these discharges can be treated and managed to avoid any negative impacts in a nutrient deficient system such as the Tulsequah River.

#### **Issue 3(b) – In-stream fish mortality**

**US Proposed Remedy –(1) Determine fish movement and spawning in effluent receiving waters and downstream flow regimes. (2) Avoid risk to anadromous fish populations.**

Canada and British Columbia agree with the 2 items identified in the remedy.

**Item 1** - BC-MELP will incorporate this issue into the terms of reference for additional baseline studies. US EPA and Alaska DEC are asked to participate in the development of the terms of reference and review the results of these baseline studies in the context of WMA permitting.

**Item 2** - BC-MELP and DFO agree that this issue should be the focus of project planning and permitting/authorization for the road and mine. For this issue to be dealt with sufficiently, it requires both pre-development planning and ongoing environmental effects monitoring for the life of the project and post-closure period.

DFO's *Fisheries Act* authorization will legally append a Fish and Fish Habitat Mitigation and Compensation Plan comprised of 14 sub-plans designed to avoid risk to anadromous and resident fish populations. As outlined in Appendix 6 of Appendix 11 of the Tulsequah Project Committee Recommendations Report and BC Ministers, this Fish and Fish Habitat Mitigation and Compensation Plan is yet conceptual and to be finalized prior to issuance of a *Fisheries Act* authorization. U.S. Agencies will be invited to participate in the development of the plan, as indicated earlier. Sub-plans will include:

- An independent Environmental Supervision Program (Appendix 1 of Appendix 11 of the Tulsequah Project Committee Recommendations Report) with trigger criteria for temporary work stoppages;
- Road Drainage Management Plan diverting surface water to vegetation or settling ponds;
- Aquatic Effects Monitoring, as discussed above;
- Sediment Control measures;
- Vehicle Servicing restrictions near watercourses;
- Fish Passage provisions at stream crossings – use of clear span bridges or open-bottom culverts over important fish habitat;
- Fish Salvage provisions;
- Application of Timing Windows for instream work;
- Full Bench road design in critical areas;
- Restrictions on Bridge Preservatives;
- Revegetation of cuts/fills/sideslopes as required;
- Instream Habitat Creation proposed by the proponent at road crossings of fish streams;
- Access Restrictions;
- Follow-Up Monitoring;
- Compensation measures for Sioko River bridge, and causeways in Tulsequah River.

#### **United States Concerns – Long Term Development of the Taku River Watershed**

**US Proposed Remedy** - (1) Undertake an assessment of potential cumulative environmental impacts that addresses all transboundary impacts to the United States prior to a decision approving road through a vast roadless area. (2) It should include a full assessment of wildlife