

APPENDIX D

Interview Summaries On Community Involvement in Contaminated Site Remediation for:

- 1. Deloro, Ontario**
- 2. Giant Mine, Yellowknife, Northwest Territories**
- 3. Mount Washington, British Columbia**

1. Deloro, Ontario

Site Background	
Ownership/operation history	<ul style="list-style-type: none"> • 1886-1899-Gold Mining and Smelting with arsenic removal, 5 successive mining companies (Gatling/Gold and Silver Mining Company, Canada Consolidated Gold Mining Company, Hastings Mining and Reduction Company, Canadian Goldfields Ltd., Atlas Arsenic) • 1903-1909- Silver and Cobalt Smelting- M.J. O’Brian starts Deloro Reduction and Mining Company • 1912-1961- Stellite Research and Production- M.J. O’Brian, renamed Deloro Smelting and Refining Company, radioactive waste from Eldorado Nuclear in Port Hope processed for cobalt • 1918-1920- Arsenic pesticide production- Deloro Chemical Co. Ltd • 1961- Moves Deloro Stellite to Belleville • British Oxygen, followed by Erickson Construction take over site • 1979-site abandoned by Erickson Construction and MOEE becomes responsible for the site
Management practices	<ul style="list-style-type: none"> • health and safety for workers- compromised health due to high metals levels (particularly lead and arsenic) and radioactive materials, cancer • environment- problems with dam stability and overflow of tailings (especially with spring freshette), air deposition of arsenic dust, couldn’t hang laundry out during smelter operation years due to deposition of stack soot high in metals • MOE Water Resources Commission 1960’s, samples high in arsenic
Contamination	<ul style="list-style-type: none"> • arsenic, lead and metals contamination in soil around Deloro from air deposition, water and sediment of the Moira River, Young’s Creek and wetlands • radiation • toxic compounds from chemical plant, PCBs, bulk fuel, herbicides
Health effects and concerns	<ul style="list-style-type: none"> • cancer (particularly lung), arsenic burns, arsenic poisoning in wells
Economic impacts and benefits (after closure/abandonment)	<ul style="list-style-type: none"> • closed over 30 years ago, some jobs in water treatment and remediation such as heavy equipment operation, some regional consulting work • adversely affected property values, town services closed (library, community center, town office etc) • tourism impact at Moira Lake
Estimated cost to address the issues	<ul style="list-style-type: none"> • \$25 million for on-site hazardous waste disposal, upgrade arsenic treatment plant, cap shafts, demolish smelting and refining infrastructure, \$17 million of this is already spent • 1979- government recorded expenditures on land title for \$2.5 million in hopes of pursuing Writs of

	Execution to recover costs, shareholder would have to settle debt
Liability	<ul style="list-style-type: none"> • Deloro Stellite, Campden Eldor Inc, BOC Canada, Atomic Energy Control Board, M.J. O'Brian (CP Rail)
Jurisdiction	<ul style="list-style-type: none"> • Ontario Ministry of Environment and Energy, MNM, Federal, Atomic Energy Board, Health • MNM is usually responsible for mining related sites, but MOE took over in 1979 and has continued to take the lead • National Contaminated Site Remediation Program contributed \$1million • Radioactive material is regulated under federal legislation, now will require a federal environmental assessment (EA), province was previously exempted from conducting an EA, this new EA requirement could cause a 5 year delay and cost \$500,000 to satisfy the process

Community Involvement Process	
General	<ul style="list-style-type: none"> • 2002 Federal Environmental Assessment required to licence low level radioactive waste, previously the federal government has not been very involved • 1998 MOEE is exempted from Environmental Assessment using the Security Account Project Exemption. Also not required to have a public hearing to expedite clean-up process in exchange for having public liaison committee. • 1992 consultation was intergovernmental with MNM
Independent efforts to address some of the issues	
By government	<ul style="list-style-type: none"> • see sections below
By private sector companies and their Associations (e.g., Mining Association of Canada or Chambers of Mines)	<ul style="list-style-type: none"> • None
By members of the community	<ul style="list-style-type: none"> • a meeting was convened at Trent University to discuss contamination and effects with academics, researchers, community members and MOE staff (funded by academic sources) • 1998 Class action suit initiated for \$15 million damages against MOE, MNM, Ministry of Health, Attorney General of Canada, Campden Eldor Inc., Atomic Energy Control Board, BOC Canada Ltd., volunteer commitment has been extensive 40hours per week for 3 years, has had a lot of help

	<ul style="list-style-type: none"> • 1997 Environmental Bureau of Investigations charge Ontario government for allowing damage to fish habitat, based on sample analysis conducted by an independent community group, Attorney General takes over prosecution of court case in 1999. 2001 EBI court case ends, MOEE found to have demonstrated due diligence in time frame of charges. • Trent study group, variety of studies and monitoring over time • study investigating diverting the Moira River around the Deloro site estimates feasible at \$50 million
Collaborative efforts (e.g., committees, taskforces)	<ul style="list-style-type: none"> • 3 project liaison committees, Technical Liaison Committee and MOE Technical Committees are only government composition, the Public Liaison Committee has community representation, these committees operate independently • 1997 started with consultant- no aims and objectives, ongoing dialogue and information sharing, provide a sounding board and process for feed-back • some view the primary objective of PLC is to allay public fear, a publicity gesture aimed to decrease the explosive situation • some community members reluctant to be involved due to conflict or inaction
<ul style="list-style-type: none"> • Membership 	<ul style="list-style-type: none"> • initiation of Public Liaison Committee- reeves of watershed asked to attend and to provide suggestions for members, many of the participants are senior members of the community (not a broad cross section representative of the community diversity), anyone can attend but MOE selected initial members, some felt they were encouraged and felt no resistance, others with dissenting views were not told when the meetings were to be held, media was not allowed to come to initial meetings • Technical Liaison Committee is made up of government representatives for regulatory agencies, any department that is involved in permitting aspects of the project (DFO, MNR, MOE, Quinte Conservation Authority, AEC) • consultant is always at the meeting, many don't challenge • functioning reasonably, no resistance • some turn over of membership, it can be difficult to get up to speed on the issues • recent meetings seem less well attended
Committee structure, funding and protocols	<ul style="list-style-type: none"> • the technical and Public Liaison Committees operate separately, minutes of the meetings can be obtained if requested and recommendations from the PLC are passed on to the Technical Committee through the MOE staff and consultant, consultant builds a decision matrix based on all three committees • PLC is set up for information distribution, presentations and taking comments, not for listening and responding to public concerns early on, some say the PLC is "an absolute waste of time," announcements with a "do nothing attitude," government representatives say there is community input at every stage in an

open process

- some community members have “blinders on,” don’t want to admit that they brought up their children in contamination that could harm them
- not much has happened over the last two years, only minimal containment and treatment
- 1998 PLC asks for joint meeting with Technical Committee, has not happened to date
- PLC has not been given a site tour
- PLC is chaired by MOE staff, not viewed as neutral or unbiased, controls the process, many suggested that an independent chair would be more appropriate and greatly improve the credibility of the process
- conflicts arose with outspoken environmentalists, media and a range of community members came to the meeting, the court case has been effective at opening up the process somewhat and increasing transparency, some of the structural problems with the PLC are getting better but people still lack trust, some viewed the environmentalists as outsiders meddling and this brought negative feelings and no trust
- it has been decided that future conflicts will be resolved by an appointed chair at the meeting and the targeted MOE staff will not have to chair a conflict that he is implicated in
- iterative process is time-consuming but necessary to build trust, otherwise the public remains skeptical and data doesn’t change minds
- decisions are made by consensus not formal votes, however there does not seem to be a formal structure for PLC to make resolutions, some no decisions are actually made by the PLC members, uncertainty around the accountability of the consultant and MOE staff to ensuring that community priorities and outcomes are addressed, some indicate that the technical decisions are twisted to seem like they reflect community priorities but were already decided in advance, some say not enough time is given to reflect on study results and prepare responses (e.g. the health study was released with only 1 day advance notice of the public meeting), some say there is no significant feed back mechanism for making decisions, there are never finalized plans so there is no decision to be made by PLC
- active stance to get the Moira River and Lake cleaned up has not been successful
- meetings are held quarterly, technical meeting during the day and PLC in the evening
- PLC meetings are open to the public but not advertised
- time commitment for volunteers is to review materials and attend the meetings (average 5 hours per month), bigger commitment when reports are being prepared and reviewed, Technical Committee members contribute ~4 days per year
- volunteer expenses are not paid, some of the reeves an councillors attend as part of their job
- communication-web site, fact sheets, update bulletin prepared by MOE communications staff, some of these have been delivered door-to-door, ongoing process to explain technical information in plain

	<p>language, studies are available in the libraries, some say the glossy technical reports are easy to understand but not very credible, others say people don't want to be embarrassed asking questions about things they don't understand,</p> <ul style="list-style-type: none"> • technical reports on the health study were presented in charts and graphs which were hard to understand, the conclusions didn't seem to correspond with the sample analysis, data wasn't explained, the consultant didn't answer when asked if he would bring up his children in Deloro, community members advised not asked • \$10,000 per meeting for consultant (includes technical meeting and PLC)
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Community Involvement in Site Remediation and Related Work	
General	<ul style="list-style-type: none"> • current law suit against government for property values • SLDF law suit about government carrying out remediation, government found to have been following due diligence for the period under scrutiny in the case • suggestions that MOE was covering up information
	<ul style="list-style-type: none"> • general support for active community involvement, some say the studies aren't well integrated and the process doesn't provide adequate means for community involvement • funding should be made available to have independent verification and analysis of study results, and to choose studies reflecting community priorities, need experts that have been mutually agreed upon who are independent, as it is they have to trust results presented because they can't afford to get their own analysis (but don't actually trust results and interpretations)
	<ul style="list-style-type: none"> • some problems of PLC accountability and getting the message out to the broader community • building trust will pay off, now it is hard to trust • there are more and more reports, meanwhile they have lived with this for so long • need broader support, discussions still based too much on conflict instead of collaboration
	<ul style="list-style-type: none"> • MOE is diligently following the process, needed more data before acting, but now need to commit to remediation plan, • keep being delayed by process and studies, then court case, and now federal EA • "it is time to get the job done and get out of here" • a survey was sent out by a municipal council to their constituency to determine main concerns and what action the community members wanted, very well responded to, not acted on by the council
Remediation	<ul style="list-style-type: none"> • government tender process with open bidding, locals given consideration in bid scoring process

efforts	<ul style="list-style-type: none"> • specialized work to remove sludge, has been taken to secure landfills • some feel the focus should be on containing the site • locals have applied for heavy equipment operation • \$3/4 million spent on fence • repaired bridge on highway for trucks, put in a monitoring station • some say the provincial government has done a reasonable job limiting arsenic exposure but the radioactive materials have not been addressed • 1997 MOEE initiates engineering work for clean-up, no off-site work included in investigation • mine shafts sealed in 1992-95 • 1992 rehabilitation strategy, Federal government fund \$1 million to cap shafts and survey site, red mud tailings covered with limestone, waste dumped down mine shafts • 1980's water treatment facility has reduced arsenic by 80% • 1983 MOE installs ground water treatment , shafts capped, some hazardous waste removed • 1978 or 79 Community reports red tailings flood down to Aikerman Mine site south of Hwy 7. MOEE issues a second clean-up order on Erickson Construction and the company abandons the site. MOEE invokes Section 99 of the Environmental Protection Act and becomes manager of the site. The site is 650 acres, and divided into 4 areas for clean-up and closure- 1. Industrial area (smelter, refinery, research and chemical laboratories), 2. Red mud tailings, 3. Young's Creek, 4. Former mining areas. • concerns that arsenic still leaks in significant quantities from the site
Technical studies	<ul style="list-style-type: none"> • 36 different feasibility studies • no funding for independent monitoring and verification
Environmental monitoring	<ul style="list-style-type: none"> • 2001 Moira River Study analysis for sediments and water quality initiated • 1998 Moira River study- invitations and draft report, 600 people in the study area, presented in an open house with a presentation and comments received, community members reviewed results, public consultation 2000 and released in 2001, determined no adverse affect on aquatic life or residents' health, some questioned the interpretation of the results that claimed there was no adverse effect when fish health and reproduction had been determined to have decreased and there were high metal concentrations in the sediments-not very credible interpretation, there was a public advisory committee for this project but it didn't meet very often and didn't meet before the results were announced publicly • water treatment facility staff (Ontario Clean Water Agency) conduct water sampling of effluent and Moira River, Young's Creek and ground water, sampling equipment was recently upgraded as it was a 20 year old system, OCWA is a crown corporation under contract with MOE

	<ul style="list-style-type: none"> • there is radiation found for miles in circumference around Deloro, but current monitoring results are not publicly available. Deformed frogs and genetically altered plants have been found in the area. Lower plant species diversity (3-5 types instead of 70) thought to be a result of contamination • no deer in the area, few fish • 1997 Scimus Inc Report shows larger area of radioactive tailings in Young's Creek sediment • 1997 field investigation by MOE hired engineering consultant, no off-site work included in investigation • 1997 soil analysis found high arsenic, cobalt, nickel, silver around site from airborne deposition during the production years • 1986 MOE survey shows average 723ppm arsenic in Deloro soils, extent of radioactivity determined. Technical report prepared for monitoring and abatement of arsenic in Moira River. Some say the results of this study were clearly conclusive of the levels of contamination but the study was buried • 1980 Analysis shows high radiation in slag and waste piles, 700ppm arsenic in Moira Lake Sediment • 1977 study shows 2 km radius around Deloro with contaminated plants • 1960's dead fish removed from Moira Lake shores daily, cows died from drinking the water of Moira River • 1934 photo shows no trees surrounding Deloro
<p>Health and safety</p>	<ul style="list-style-type: none"> • workers came to fix the gas line and wore hazard suites to do the excavation work, when ground is dug up in Deloro it is disposed on site as a hazardous waste (but only once it is disturbed), kids used to play on arsenic piles • 1999 Ministry of Health and County Health Unit conducted a health study and found no significant health risk for total exposure, peer reviewed although some of the reviewers couldn't get the review done in time since the deadline was rushed, Deloro Health Risk Study released in July, 1 day notice to those most affected, summary indicates village is contaminated but safe. A warning is issued to not drink the water near the mine site. High levels of arsenic found in gardens of Deloro. Urine was sampled for arsenic- this gives a very short-term view of contamination, hair samples give a longer term view of exposure to arsenic but were not taken as part of the study, some say they were taken at the wrong time of year to show greatest exposure. Similarly, dust samples were collected from high up in houses in December which does not show highest exposure of dusty time of year, a follow-up study using vacuum collection in the summer showed much higher arsenic and other metal levels. Some felt that the health study was intended to put a rosy picture out before the court case, so the study may have been rushed to get the results out in time. Many were dubious of the results, skeptical of the MOE and process. 30 properties were heavily contaminated. Some told to wear gloves and a mask while gardening. Health study focuses on a moment in time and ignores past contamination from living near or working on the site (no family history discussed), and it ignores future exposure that could happen as a result of drinking water, dust, or food contamination. No past residents were surveyed, or death records out of the area.

	<ul style="list-style-type: none"> • arsenic levels in Moira River and Lake exceed Ontario drinking water guidelines • > average of abnormal pregnancies compared to province • 1998 MOEE initiates Deloro Health Risk Study. Public Liaison Committee (PLC) asks for off-site contamination to be investigated. Health Study Committee struck- subcommittee of PLC was struck and additional participants chosen to cover a more specific mandate, met 5 times, 90% participation in community. Most said the study did not involve the community members very well in devising questions, approach and priorities for the study and the resultant methodology was unclear. Some wanted plant uptake to be analysed since people grow gardens • some people moved there without knowing about the contamination • tailings have been used as fill, e.g. the old folks home is built on high arsenic concentration tailings • sampling of toenails showed high arsenic in toenails in Madoc compared to Belleville • action plan to deal with critical results of the health study, communication plan • Atomic Energy reports are not accessible • gamma radiation survey, radon gas surveyed above recommended clean-up # but not evaluated as a health risk, community members told results on individual basis not as a group • children played hockey on the ponds high in arsenic, arsenic burns in summer when playing on tailings and waste piles • Ted Galloway, a worker who drove radioactive material from Port Hope died of lung cancer, his wife was given compensation • Community says there should be compensation for the lost health of the workers as well as Deloro community members • 1974 Hastings county deaths from cancer and lung disease 119% greater than province average • during operation there were immigrant workers who had the worst jobs • 1953-7 high incidence of respiratory cancer, 3 dead • 1937 arsenic poisoning from well • 1928-52 lung cancer deaths (12)- 29% of workforce deaths from cancer, 11% in surrounding area
Economic benefits	<ul style="list-style-type: none"> • small amount of local work • decreased property values (at 25% of value) • tourism impacts • emotional stress, unknown health effects

Long-term Outlook

- close to estimating cost of clean-up
- federal EA ongoing, need to remediate radioactive material
- one area of Moira River found to be more contaminated with radioactive material, increase prospective work
- no funding guarantee though budgets are planned on 3-5 year timeline, many community members have low level of confidence that there will be enough funds committed and available
- PLC will be scaled back when remediation is started
- concerns that the site might become zoned as a hazardous waste site and bring in other types of contaminants from other places
- in the end will still have a problem, do some things to help the problem not solve all
- MOE is committed by “default,” with little resources committed by industry or federal funds

2. Giant Mine, Northwest Territories

Abbreviations:

DIAND: Department of Indian Affairs and Northern Development

GNWT: Government of the Northwest Territories

MVLWB: Mackenzie Valley Land and Water Board

YASRC: Yellowknife Arsenic Soils Remediation Committee

EC: Environment Canada

DFO: Department of Fisheries and Oceans

CEPA: Canadian Environmental Protection Agency

Site Background

Ownership/operation history

- July 1935 – Baker and Muir stake the 21 original "Giant" claims Burwash Yellowknife Mines Limited.
- 1937 – Giant Yellowknife Gold Mines Ltd incorporates and acquires claims. Work is done throughout 30s and into 40s
- June 1943 – Frobisher Exploration Company acquires operating control of Giant Yellowknife Gold Mines and the Giant property
- June 1948 – Gold production begins at the Giant mine
- Giant Mine is located within the municipal boundaries of the City of Yellowknife
- Began producing gold in 1948
- From 1948 to 1951, gold roasting production with no pollution control/no capture of arsenic-rich gases.
- In 1951 an electrostatic precipitator was installed to reduce emissions, and in 1959, a baghouse dust collector installed that reduced emissions a few hundred kg/day.
- From 1959-1999, still a gold roasting operation, but the arsenic trioxide was captured, and the dust stored in underground stopes and chambers.
- 1986 – Pamour Inc. acquires Falconbridge Ltd.'s interests in Giant Yellowknife Mines Ltd. and in Akaitcho Yellowknife Gold Mines Ltd.
- 1990 – Royal Oak Resources Ltd. assumes control of Giant Yellowknife Mines Ltd. by purchasing the interests of Giant Resources Ltd. and Pamour Inc.
- . The following year, Royal Oak Mines Inc. formed by the amalgamation of Royal Oak Resources Ltd. with companies in Pamour and Giant Yellowknife groups.
- Royal Oak operated mine from 1990-1999 when the company went bankrupt (April 1999?);

	<p>receivership - Price Waterhouse until December when they turned it over to DIAND (mineral rights and land under federal control)</p> <ul style="list-style-type: none"> • DIAND took responsibility; sold it to Miramar in December 1999. DIAND retained responsibility for pre-existing environmental liabilities on the property, including the underground arsenic trioxide dust • Miramar operating at a ¼ to 1/3 of Royal Oak's level; no longer roasting gold. Hauling ore to other mine (Con Mine) where the arsenic is stabilized and put in tailings pond.
Management practices	<ul style="list-style-type: none"> • 1992 – miners at Giant mine go on strike May 23. The mine continued to operate with staff, replacement workers and hourly union members who crossed the picket line. In September 1992, a deliberately-set explosion underground killed nine miners. Striking miners don't return to work until December 1993.
Contamination	<ul style="list-style-type: none"> • 237,000 tonnes of arsenic trioxide dust are stored in 14 underground stopes and chambers; a pump and treat system is in place to pump mine water and water around these to the surface, where it is treated and released, but it is not considered a long-term solution • surface arsenic levels are high in soil around the area, but it is not entirely determined what natural levels are. YASRC (Yellowknife Arsenic Soils Remediation Committee) soon to release report on soils contamination • air pollution from the stack at Giant mine was a concern (both arsenic and sulphur dioxide) and contributed to high levels of arsenic in soils, but since 1999, stack not being used. • tailings ponds on site cause concern as they are accessible to wildlife and when wind is high, dust blows tailings
Health effects and concerns	<ul style="list-style-type: none"> • 3 or 4 studies done on Yellowknife Bay (?) – air and water quality • the Yellowknives Dene have been concerned for years about the effects of arsenic; have requested records from hospital of all deaths to try to determine cancer rates, etc. Studies have been done on berries (Denise Maxwell's study) and other flora; earlier studies in late 60s by PhD student from Iowa • Dene report cancer rates in their communities are high. • the Yellowknives say that 10-15 years after the start up of the mine, they began noticing changes in the land around them, and in the plants and animals; they stopped picking berries close to the mine. Etc • some children died from arsenic laced snow melt; cows died; dog team died. (50s or 60s?) • late 60s, an elder died – arsenic was 10x higher than normal. • 1990s – Dene started to pound on doors, to find some answers. Felt that everyone was trying to pass the buck; no one taking responsibility. • now have to travel 15 miles from Giant. Used to use the land and water right around Giant

	<ul style="list-style-type: none"> • Sled dogs walking through creek would lose all the fur on their paws • Scared about effects on moose, fish and rabbits. • Canadian Public Health Association set up taskforce/study in mid 70s. • City of Yellowknife water intake/source changed at time to lower arsenic levels • Concern about underground arsenic leaching into Great Slave lake • Levels of arsenic in sediment of Baker Creek and Back Bay already high. • Constituents of MLA Bill Braden (Great Slave MLA) have expressed concerns: (from Hansard, Feb. 16, 2001) “soil remediation solutions around private dwellings in the area; cancer rates in Yellowknife; integrated land-use planning and land-use administration; concern for the public health; standards for clean-up and standards for soil remediation; and to what extent will the public be consulted in the future.”
Economic impacts and benefits (after closure/aban)	<ul style="list-style-type: none"> • closure of mine; loss of jobs in the community; some got hired back when Miramar took over, but only 1/3 of workforce • Dene would like remediation work if there is to be any. Feel they’d do a better job than contractors because they have vested interest. •
Estimated cost to address the issues	<ul style="list-style-type: none"> • \$16-20 million (surface) • \$52-400 million for underground arsenic reclamation/remediation • GNWT – preliminary estimates for surface clean-up is \$8-17 million (not including ongoing monitoring)
Liability	<ul style="list-style-type: none"> • at time of last water license, \$400,000 set aside. This was just paid out by insurance company in last few months. <ul style="list-style-type: none"> • Also condition of water license that company must put up \$1.5 million/year security up to \$7 million • DIAND has taken it on. Possibility of previous owners (Falconbridge mentioned) but not being pursued at this time
Jurisdiction	<ul style="list-style-type: none"> • Referred to by interviewee: from Hansard June 8, 2001; issues of jurisdiction – Joe Handley (GNWT minister of finance) states that the responsibility for arsenic at Giant Mine rests with DIAND as a condition of the sale of the mine to Miramar. States that GNWT “participates primarily because as a government for this Territory, we have great concerns about what the department may or may not be doing, what their plans are, what they may be in the future and so on. We do not have an official role or responsibility.” • GNWT’s responsibilities lie with lands not covered by the water license. Still some debate b/w DIAND and GNWT on that line.

	<ul style="list-style-type: none"> • Are presently considering negotiations • 1970 – administration of surface of land transferred to GNWT -land lease issued by Territorial government • water license – federal gov't • under terms of sale to Miramar, Miramar has indemnification for all past liability at site • some say there were huge holes in deal with Miramar • DIAND have all liabilities underground and water related liabilities • The responsibility for non-water related surface needs to be negotiated • Have agreed to cost-share work that is clearly land related • Fuel oils, reagent chemicals, contaminated soils on site, buildings (though nothing can be done with most structures as mine is still operating) • Negotiations have apparently been initiated by GNWT to sort it out. • DIAND have to have a plan submitted to the MVLWB – Abandonment and Restoration Plan by Oct. 1/2002 (got extension from last year) • DIAND enforces water license for MVLWB <ul style="list-style-type: none"> • Both boards exist under federal legislation • DIAND, although possibly some GNWT. GNWT has put some money into surface clean-up <ul style="list-style-type: none"> • Kevin – surface lease became jurisdiction of GNWT in 1970 (administration of) • Environment Canada? When arsenic was still going up stack (until '99). Arsenic a dangerous substance under CEPA; EC at t that time required to come up with a management plan. Many studies • EC/DIAND – air emissions? • DIAND – underground arsenic • DIAND have mandate for economic development; and also responsibility for aboriginal people; • Mackenzie Valley Land and Water Board
	<ul style="list-style-type: none"> • Miramar has to give federal government 1 month's notice of shut down • Miramar then responsible for assuring compliance of property for additional 6 months; then complete liability falls back to government; this is where GNWT has initiated negotiations with DIAND as to jurisdiction; whether GNWT has any responsibility; only had one meeting so far in Oct/01. short meeting; negotiations have not progressed

<p>Community Involvement Process</p>

General	<ul style="list-style-type: none"> • Public information, but as of yet, no community involvement beyond that • Used to be the Royal Oak Project team, but were taken off Colmac mine (given to Contaminants division) – weren't happy with job they were doing. • Colmac process is entirely different. Different philosophy/approach. In partnership agreement with Dogrib. Involved every step of way, from identifying priorities right through to decisions.
Independent efforts to address some of the issues	<ul style="list-style-type: none"> • some studies of arsenic contamination. Bob Bromley worked as research assistant for PhD student from Iowa in late 60s, studying arsenic levels in area around Yellowknife
By government	<ul style="list-style-type: none"> • Canadian Public Health Association did health study (arsenic) in 1975-77: Task Force on Arsenic; noted levels in public; stated water supply was safe; and that arsenic was best in the underground chambers • could have gone Britannia route? Say some. But didn't. Joint several and retroactive liability • has been some surface clean-up, paid for by DIAND and GNWT. Removal of metal debris, barrels, batteries, waste oil, etc • report by SRK (to look alternatives for underground arsenic – SRK came up with 4 types of options: a) to leave it in the ground (and do nothing; freeze it; pump and treat; grout around it; etc) b) mine arsenic and sell it c) excavate arsenic and chemically stabilize it d) excavate arsenic and physically stabilize it • GNWT led clean-up so far of surface (though both DIAND and GNWT contribute monies) • In March 2002, GeoNorth report (for DIAND) reported need for a Community Liaison Committee as identified by the City of Yellowknife, participants at a Management Alternatives Workshops (held July 11-12/01), and members of other NGOs. • DIAND have to present a management plan for arsenic to MVLWB by Oct. ½ (already got extension of year) • SRK have been hired; major contract for scientific and technical study; • 2 public workshops (check, the technical ones) by invitation – multi-stakeholder – to present SRK's report to date • 3 years ago (meetings) and last year (check dates) • within last 6 months, 6 public information sessions (2 yk, 2 Ndilo, 2 Dettah) • updates on SRK – fairly well-attended • public registry – giant project team has tried to communicate information • LUTRA report – looking at public awareness of arsenic situation – found that the public and the

	<p>media were skeptical of DIAND – think they have already chosen option and are now trying to get public to agree</p> <ul style="list-style-type: none"> • DIAND denies that they have chosen plan • Has been discussion of Community Liaison Committee – GNWT have heard of this; Dene and Ecology North have heard nothing formally • DIAND also has begun to set up technical peer review committee to review SRK information • Invited other four (GNWT, Ecology North, Dene, and North Slave Metis) to name technical expert to sit on technical review committee • DIAND would fund this • The Community Liaison Committee would be broad; multistakeholder, advisory capacity • It would take materials reviewed by technical peer review committee and provide advice to DIAND and GNWT • GNWT would like to see this committee established • Is concern over effectiveness and independence of committee
<p>By private sector companies and their Associations (e.g., Mining Association of Canada or Chambers of Mines)</p>	
<p>By members of the community</p>	
<p>Collaborative efforts (e.g., committees, taskforces)</p>	<ul style="list-style-type: none"> • have been some public information meetings (2 in Yellowknife, 2 in Ndilo, 2 in Dettah – dates??) • Yellowknife Arsenic Soil Remediation Committee – joint venture between federal gov’t, GNWT and group of community stakeholders. • Giant Mine Project team have produced some communications; done some interviews; set up a public registry • Have held some technical workshops • YASRC – trying to determine what health risk in soils would be – what baseline would be; report soon to come out. Deals with soils contamination on site and off-site
<ul style="list-style-type: none"> • Membership 	<ul style="list-style-type: none"> •

Committee structure, funding and protocols	<ul style="list-style-type: none"> • Giant Mine Project Team just now talking of setting up Community Liaison Committee to look at remediation options for the underground arsenic • Also setting up a Technical Peer Review Committee
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Community Involvement in Site Remediation and Related Work	
General	<ul style="list-style-type: none"> • has not been any aside from bit from GNWT and DIAND on surface. Miramar has contracted these workers/?? • Yellowknives Dene have expressed desire to do the work, as they feel they'd do a better job as they have a vested interest in the land, but this has not been discussed in any real detail with DIAND (not at that stage yet)
Remediation efforts	<ul style="list-style-type: none"> •
Technical studies	<ul style="list-style-type: none"> • None involving community; several reports commissioned by DIAND; SRK; GeoNorth; etc
Environmental monitoring	<ul style="list-style-type: none"> • Since first water license was issued, DIAND has been monitoring water • Environment Canada doing monitoring of Baker Creek ??
Health and safety issues	<ul style="list-style-type: none"> • Concerns about arsenic if it is brought to surface; particularly if mined (though that seems like a slim possibility now since market for arsenic has shrunk since concern about treated wood has skyrocketed in the US.
Economic benefits	<ul style="list-style-type: none"> • New jobs (remediation or otherwise) were to go to former workers of mine; were supposed to have first right of recall for 2 years from the date of closure of the mine (of Royal Oak's insolvency) but that date has now passed.

Long-term Outlook	
	<ul style="list-style-type: none"> • Giant Mine Project Team wants to involve community now to get their input in to what remediation plan to use. • Plan to set up Community Liaison committee; have begun to set up Technical Peer review committee.

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| | <ul style="list-style-type: none">• Need to decide on what option to use for underground arsenic• Barriers: no one taking action; community suspicious of DIAND; lack of communication from Giant mine project team; according to some community members, don't seem to have an action plan; Lack of trust – feel that if DIAND gets a report in that they don't agree with, they don't release it to the public; some members of public want independent studies as they don't trust DIAND to tell them the truth.• Dene are in middle of land claims. Need to decide if they want the land the Giant is on, or possibly compensation.• Some people want a comprehensive study of “how we got here”; study of how mines were allowed to create and leave such a liability to be paid for with tax dollars; wonder why mines can make such a mess and just walk away; set higher bonds.• A plan is to be completed by October 1, 2002 but committee not yet set up (beginning stages, though no one on committee had heard at time of interviews for this report)• Community still mistrustful and wondering how effective community involvement can be if plan is due by October 1, 2002 (already July 2002 and no Community Liaison Committee yet); independence and effectiveness questioned;• GNWT has said they won't be on the committee (nor will DIAND) though they will help determine terms of reference• DIAND and GNWT need to negotiate liability – when Miramar finishes operations• |
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3. Mount Washington Interview Summaries

Abbreviations:

TRTF – Tsolum River Task Force

TRRS – Tsolum River Restoration Society

MEMPR – Ministry of Energy, Mines and Petroleum Resource

MELP – Ministry of Environment, Lands and Parks

MWLAP – Ministry of Water, Land and Air Protection

AMD – Acid Mine Drainage

Site Background	
Ownership/operation history	<ul style="list-style-type: none"> • 1964 – mining began; open pit copper mine on Mount Washington on Vancouver Island near Courtenay, BC. On an E&N Railway Land Grant; province held precious metal rights; railway co. had base metal rights. Both leased to Mt. Washington Copper and Cumberland Mining Co. • Operations from 1964-1967; stopped mining in fall of 1966 (company went into receivership), ore hauled and milled to 1967; mine site then abandoned. No mining activity since. • In 1979 Esso Resources Ltd. tried to extract metals from the overburden; applied acid and iron-oxidizing; accelerated AMD generation. • TimberWest now has surface rights; CPR has subsurface; Better Resources owns precious metal rights.
Management practices	<ul style="list-style-type: none"> • Operated for short time in 60s. No known labour or other problems during operation.
Contamination	<ul style="list-style-type: none"> • Copper from AMD; elevated levels in the Tsolum River. Runs of pink were up this last year (2002), but the numbers have decreased since 1970s. In 1980s, DFO stocks 2.5 million pink fry. None return. Subsequent water testing indicates elevated copper levels. • In the 1950s, runs of 100,000 pink salmon and 15,000 coho were counted each year, as well as cutthroat trout, chum and steelhead salmon. Started to see declines in these numbers in 1950s, presumably from effects on river system from development and logging practices • The environmental damage caused by toxic levels of copper released from the mine was not apparent until identified by MELP staff in 1985. Community was aware salmon levels had decreased, but there had been a series of changes in the river (logging, development, gravel taken from river) that also contributed. • From mine site, AMD into Pyrrhotite Creek which empties into the Tsolum River

	<ul style="list-style-type: none"> • The Ministry of Environment, Lands and Parks estimated that for the Tsolum River to meet the water quality objectives (stated above) during spring freshet, the reclamation should reduce copper loading from the mine site by 95% • In 1979, Esso Resources Ltd tried to extract copper from the remaining ore at the site by adding sulphuric acid and iron-oxidizing bacteria to the ore. This process sped up the release of copper from the mine site. • Some remediation efforts were made from 1988-92, including a till cap over some of the waste rock; at first weren't sure how successful, but in 1998, sampling showed copper levels reduced by 50%. Still some debate about what led to the reduction in copper levels. Still too high at certain times of the year for salmon to return. Pinks got in between high spikes in the last year.
Health effects and concerns	<ul style="list-style-type: none"> • No human health concerns; concerns about health of river and effects on aquatic life, particularly salmon; loss of recreational river
Economic impacts and benefits (after closure/aban)	<ul style="list-style-type: none"> • Mine operated for short time; no discussion of loss of jobs when mine closed. • Economic value lost with loss of fishery and recreational use of river estimated at \$2 million/year (since late 60s)
Estimated cost to address the issues	<ul style="list-style-type: none"> • Estimates range from \$4-12 million; (\$5-7 million)
Liability	<ul style="list-style-type: none"> •
Jurisdiction	<ul style="list-style-type: none"> • Environment Canada/DFO/MWLAP (was MELP)/ Sustainable Resource Management? • Federal gov't (Env't Canada) have initiated legal action using fisheries regulations

Community Involvement Process	
General	<ul style="list-style-type: none"> • One interviewee claimed that in a report by Agra consultants (for the prov'l gov't) it was stated that if anything was to be done to restore the Tsolum, it would have to be community driven (unconfirmed in draft report) • One gov't official said that remediation should be taken on by government or business, not community – not against involvement of the community, but felt that gov't and business weren't living up to their responsibilities • Concern about river since 70s-80s. Steelhead Society listed it as a major area of concern in 1985. • Team Tsolum group formed out of the Comox Valley Watershed Assembly to look at Tsolum River issues

Independent efforts to address some of the issues	
By government	<ul style="list-style-type: none"> • Tsolum River had long been a concern of DFO • After identifying problem in of AMD in 1985, federal and provincial agencies set up a technical committee in 1987 to look at solutions; met 3 or 4 times a year? MEMPR took lead role • Consultants were hired to advise, and BC government put up \$1.5 million dollars for remedial work and monitoring. • In 1988-92 – various actions taken at site, including till cover, diversion of ground and surface waters, covering some spots with asphalt and concrete-impregnated textiles, and in situ neutralization. Ministry of Mines (Energy, Mines and Petroleum Resources at the time) attempted some reclamation; • Initially, no reduction in copper (in monitoring from 1993-95) • In 1998, sampling showed copper levels reduced by 50% but is not certain if this is the direct result of cap or other factors. • 1997 – Meeting held (organized by community “Team Tsolum”) but got MLA Evelyn Gillespie to host (see below) meeting that started the Tsolum River Task Force (See below) DFO funded the Tsolum River Task Force but no money specifically for mine site remediation • According to some community members, MEMPR became somewhat less involved after 88-92 remediation efforts. MELP became more involved • Number of reports commissioned. 1998, MEM and MELP commissioned Levelton Engineering to examine reclamation options for Mt. Washington. • Environment Canada on the Task Force; McCandless hired SRK to do report • March 2000 – meeting to discuss SRK report; also talk of legal action at that time. Committee already out of funding. Governments seem quieter once the talk of legal action began.
By private sector companies and their Associations (e.g., Mining Association of Canada or Chambers of Mines)	<ul style="list-style-type: none"> • TimberWest, who own surface rights are looking into using wetlands to treat (Golder report) • TRRS met with TimberWest. Plan to dam Pyrrhotite Lake, raise waters 6 metres and collect contaminated water • TimberWest obligated to do something (as are CPR)

<p>By members of the community</p>	<ul style="list-style-type: none"> • For many years, active citizenship concerned about watershed issues in Comox Valley • Steelhead Society • Comox Valley Environmental Council • Comox Valley Watershed Assembly – at a meeting in 1995, the Tsolum Team was formed. They held a “Healing the Tsolum” workshop in 1997, which was attended by over 200 local residents. The next day , the Tsolum River Task Force was formed with the goal of restoring the Tsolum River to historic levels of health and productivity. • 1996 there was a Citizens’ Delegation which went to Victoria
<p>Collaborative efforts (e.g., committees, taskforces)</p>	<ul style="list-style-type: none"> • Taskforce Tsolum was set up • In April, 1997, a meeting was held in Comox to discuss the state of the Tsolum River. Shortly after, DFO funded a multi-stakeholder taskforce, the Tsolum River Task Force (Tsolum River Restoration Project) – salmon focus; habitat restoration; monitoring • Had to focus on fish habitat, etc, b/c of DFO mandate, not on mine site/AMD. But did have an AMD working group • Funding for the Task Force ended on March 31, 1999, and final report of the group “State of the Tsolum River” was issued.
<ul style="list-style-type: none"> • Membership 	<ul style="list-style-type: none"> • Multi-stakeholder. Industry (TimberWest, Better Resources, DFO, EC, MELP, environmental NGOs, farmers, First Nations) • Was an advisory group • Had 2 staff (1 ½ jobs); Kathy Campbell and Jackie Sandiford • No groups excluded. Had First Nations involvement for awhile, but ultimately they left (not because of conflict) • When DFO funding ended, Task Force ended, but Tsolum River Restoration Society (TRRS) set up as a society so they could get funds. Now operating with funding from aquaculture industry. Jack Minard is only paid staff member; have public AGM every year, but society not set up like the Task Force (not a multi-stakeholder type of meeting structure) – ngo, board of directors, etc.
<p>Committee structure, funding and protocols</p>	<ul style="list-style-type: none"> • Looked at the Comox Valley Watershed Assembly for how to set up group, etc. • Decided who was a stakeholder • One meeting/ month, generally • Had workgroups – ARD/ mine reclamation group <ul style="list-style-type: none"> –Salmon stock group –flows and storage

	<ul style="list-style-type: none"> -habitat restoration -water monitoring -media and communications • Rep from each group would go to Task Force meeting once a month • Usually had facilitator/mediator • Access to experts and legal counsel • Had structure to deal with conflict; gave ability to focus on issue • Task Force set up to represent all sort of views • Best community action group they had • Was “doable in board room as well as in the field” • Time was donated; travel expenses barely covered, but the paid staff person made the meetings possible, did all set up, arranged meetings; printed up and distributed minutes, etc. • Members felt that they learned together, that it was multi-disciplinary; bringing together all issues in this “watershed problem” • Open to general public in that people could ask to be involved, and people from the general public were asked to participate; having the workgroups really helped with this (easier to get people involved in workgroups) • Minutes were available on web site; media were given releases as well • Workgroup would define a project and take it to the advisory group (for approval?) • Decisions made by consensus (although were some times cases where they would “agree to disagree” and no consensus was reached – one holdout) • Professional facilitators used; all members found this extremely effective and helpful • Taskforce was multi-stakeholder and visible in community; having paid coordinator and staff person meant someone was paid to get information out to entire group, and community • Weren’t open to press – government were sensitive to that. • Some conflict with Cliff Rennie. His idea of using lime at site was not seen as viable by any other members. Caused some conflict, but with mediator, he was always given the chance to speak. • One member feels adding lime to site would neutralize the site for very low cost; also feels that “total democracy” doesn’t work; that they need leadership; too much talking and not enough action; feels too many people want to be involved, but not everyone has mandate or the power to do anything • Some conflict b/w MELP and Env’t Canada about how they should proceed • Most hoped the ARD issue would have been dealt with; that the gov’t would have taken action; lack of
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money/gov't will

- Killed the mechanism for community decision-making; nowhere to go with it. Ground to a halt; no funding plus no action
- Some felt that the provincial government were sometimes quite inflexible
- But process overall was good until it hit the wall of inaction
- Community got involved because government weren't handling it.
- Now that population is jaded
- Seen as a breach of public trust in that they had expectations and put in all this work, but in the end, nothing was done. Had momentum but it was lost. Big sense of disappointment and frustration in the community
- Some claimed the provincial government failed by not coming up with the money to do something
- Some felt it lacked leadership in the end. Especially when it came time to do something about the site
- Perhaps some misunderstanding about government's role at the table. MELP said they were there in advisory capacity only, but not clear whether this was clear to community members (who may have not realized the extent to which they should have been taking other action (i.e., contacting ministers, etc)
- They had really thought they had something going when the Task Force was operating, and there had been some optimism about a solution being found/action being taken
- Many community members frustrated as Task Force ended up "spinning its wheels"
- Members of community said barrier was that the provincial government wouldn't put up any money
- The community at large was generally supportive of Task Force. When it was operating, members said they couldn't go anywhere in the valley and not be asked about it.
- Funding dried up; set up the Tsolum River Restoration Society; project-to-project funding; much more reliance on volunteer work; slower process; less getting done; w/out paid coordinator
- Barriers: complex question; no vision of what solution would entail
mine remediation needs to be done, but who will do it? Government or industry?
- Fatal flaw in the Task Force was that it was funded by DFO and therefore the mandate was limited (and technically did not involve the mine site or its remediation); tightly targeted resources
- Was useful to get multi-stakeholder group together
- Problem with raising expectations. MELP there in advisory capacity (but were community members aware that this was role?)
- Hard to come to consensus
- Still need to pressure higher ups in government (did community stop doing this b/c they felt that

	<p>government agencies at the table implied political will to do something?)</p> <ul style="list-style-type: none"> • Problem of jurisdiction? Who is ultimately responsible? • Need appropriate legislation • Community needs to keep it in the public eye to continue the pressure on the government; letters to editor, etc. • MAC has direct pipeline to government – BC Mining Association person is now the executive assistant to Mining Minister in province – continue to pressure government for leeway. Community needs to keep pressure up • MAC/BCMA not at table/on Task Force •
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Community Involvement in Site Remediation and Related Work	
General	<ul style="list-style-type: none"> • Has been no substantial remediation work since 1989 (-92) • Community involved in monitoring (through TRRS), Streamkeeping, habitat restoration • On hold; waiting to see what happens with litigation •
Remediation efforts	<ul style="list-style-type: none"> • MEMPR did do some work from 1988-92 (before Taskforce established, though there had been community concern expressed through other organizations); \$1.5 million spent on till cap • Streamkeepers, habitat restoration, going on in watershed, but not on mine site. • TimberWest have been looking into wetlands, but not sure what's happening now that Env't Canada is looking at legal action
Technical studies	<ul style="list-style-type: none"> • Most in the community said “no more studies” but some government folk feel more studies, or a more comprehensive study is needed. • Some Task Force members said these were made available to Task Force, but maybe not the public at large (no public registry?) • TRRS says no more studies, just money to find an on-site solution (TRRS would like to see engineered cap go ahead)
Environmental monitoring	<ul style="list-style-type: none"> • TRRS paid ½ last year, provincial and Env't Canada paid other ½. (\$8,800 total/year) • Monitoring of water at different points in watershed.

	<ul style="list-style-type: none"> • Steelhead society had done monitoring through mid-80s to 90s. Water sampling
Health and safety issues	<ul style="list-style-type: none"> •
Economic benefits	<ul style="list-style-type: none"> • Economic benefit to making stream healthy, both commercial fishery and recreation/tourism • Not much discussion on economic development though. Local economic development people haven't paid much attention to it; nor has there been much talk about jobs through remediation work. Much of the stream keeping and habitat restoration work has been on a volunteer basis.

Long-term Outlook	
	<ul style="list-style-type: none"> • Process ground to halt/on hold. People are waiting to see what happens with Env't Canada. • Community "disheartened, frustrated, disappointed, disgruntled" • Something is in the works with Environment Canada, using fisheries regulations, to get work done. • Some feel the Task Force could resume at any time, but without funding, not likely • The TRRS is still operating on limited funding. Involved in habitat restoration and share monitoring with gov't. Much work is done on a volunteer basis • Comox Valley Watershed Assembly still meeting; open, once-a-month meeting where anyone can come in a bring up concern with watershed. Action oriented group (Tsolum Team came out of this process)