

Environmental Protection in Quebec

Roch Lanthier

*The Asbestos Victims' Association of Quebec
(Association des victimes de l'amiante du Québec) – AVAQ*

Abstract

The Asbestos Victims' Association of Quebec (AVAQ) was founded to help asbestos victims and their families with medical, legal, environmental and personal issues, to make the population more aware of the situation through the media, and to develop alliances with other groups. AVAQ proposes an international moratorium on the use and production of asbestos until a really safe way of using it can be found and applied everywhere.

The most important asbestos-mining area in Canada is situated in the province of Quebec, in the city of Thetford Mines and its surroundings. In an area of roughly 40 km by 3 km there are more than 30 tailings dumps from both disused and active chrysotile mines. Soil tests show the content of these tailings is 10% chrysotile. Many houses are built very close to the tailings, sometimes less than 100 meters away, and residues from the tailings are widely used for landscaping. Women of this area have the highest level of mesothelioma in the world, twice the second-highest level registered.

AVAQ feels this situation to be very worrisome. We have sampled the air in houses surrounding the tailings to evaluate the concentration of asbestos fibres. Twenty-eight samples were taken in 26 houses situated within one kilometer of the tailings. Out of these, 15 samples showed a concentration of chrysotile fibres higher than the AHERA criterion. This criterion is used in the United States for schools and public buildings. When it is reached, cleaning measures are taken.

Different approaches are being considered to control the pollution caused by these tailings. Four major aspects have to be taken in consideration: the stabilization of the soils, the disposal of the soils, the irrigation of the sites and revegetation. Since the adequate regeneration of these sites would necessitate huge financial and technical resources, it has to be envisioned in the context of an overall environmental and socio-economic regeneration of the area. Focus should be put on high added-value income-generating projects in order to attract private and institutional investment. Other projects developed in similar situations have already proven to be very successful.

Introduction

Towards a global solution

The Asbestos Victims Association of Quebec (AVAQ) was born in fall 2003 out of an encounter of three Quebecois at the Ottawa Asbestos Conference.

Four major concerns are at the heart of its activities: victims' compensation, risk prevention, public information and exercise of influence on the government and the industry.

In addition to its other activities, AVAQ is taking up a major environmental and social challenge: the control of pollution from, and regeneration of, more than thirty sizeable heaps of asbestos residues (tailings) with considerable asbestos content, located in an area of 120 sq km, and inhabited by 60,000 people.

Air testing we did in houses around these tailings showed that the concentration of asbestos in the air of 15 out of 26 houses was above the AHERA criterion. When this level is reached in public buildings in the USA, clean-up measures are required.

It is more than likely that this pollution is originating from the tailings. The problem is of such Herculean proportions that no one has ever seriously contemplated doing something about it. Tailings that have accumulated for more than a century present a high health risk to the surrounding population. Everybody kept trying to look elsewhere as they were growing up, but today the tailings are everywhere and people have become used to see them as part of the local scenery.

As we progress in our understanding of the different aspects of the problem, we have come to realise that only a global, holistic solution can be viable. The environmental condition cannot be isolated from the social and economic situation. The complex psychological syndrome spun from a century of living with asbestos is intimately woven into the socio-politico-economic situation of the people living in the area. If we just denounce the situation, it's obvious that nothing will be done, so we feel that we have to propose solutions. Such an enormous endeavour requires so much money and so many resources that no government is likely to consider it, especially not when the government is an ardent defender of chrysotile, unless something has already been thought of.

So, there's no two ways about it: something has to be envisioned and realised that will control the pollution, be self-sustaining, and generate money...enough money to stimulate private, institutional and governmental investment. This would go along with creating long term jobs and confer renewed dignity and pride on the people.

We have been following with much interest two projects with similar concerns: one is dealing with the closing of old and existing coal mines in Romania under the direction of the World Bank and is called: *Mine closure, environment and socio-economic regeneration project* . The other one is the *Eden Project*, it consists of vast biodomes built in a disused clay quarry in an

area of UK of high unemployment. It generates jobs, money, and educational means and promotes human values.

The Asbestos Victims Association of Quebec

The Asbestos Victims' Association of Quebec (AVAQ) was founded to help asbestos victims and their families with medical, legal, environmental and personal issues, to make the population more aware of the situation through the media and public education, and to raise the level of responsibility and liability of the governments and the industry.

Quebec is the third largest producer and second largest exporter of asbestos. As of next year (2005), asbestos will be banned throughout the EU, and is actually banned, about to be banned or restricted in most western industrialized countries and many other countries around the world. Canada is the only first world country still producing asbestos. Canada promotes the use and exportation of asbestos in third world countries where regulation is non-existing or badly applied. Governments and corporate interests are colluding in this matter. The number of known asbestos victims is growing every year in Quebec where the asbestos occupational victims are still being exploited and badly compensated. Eradicating the production of asbestos in Canada would set a new world-wide standard.

AVAQ proposes an international moratorium on the use and production of asbestos until a really safe way of using it can be found and applied everywhere.

The mission of AVAQ is to:

- Inform the victims of their rights and of the available resources
- Find and convince medical and legal personnel to help
- Support the victims on medical, legal and personal levels
- Defend the victims in court and help them obtain compensation
- Expose the abuse and exploitation perpetrated by asbestos stakeholders
- Interact with other groups and find resources to offer the best services to the victims
- Motivate the victims and their people to take action for themselves and others.
- Influence environmental health and compensation legislation
- Campaign through the media and the public with utmost respect for the victims
- Solve major environmental problems caused by asbestos mining

Achievements in the past year include:

- Foundation of the association last fall
- Establishment and organisation of an office

- Regular meetings among the founder members
- Meetings and interaction with other help groups
- Fund raising efforts
- Finding of medical and legal resources
- Extensive research in different fields: medical, legal, environmental
- Sampling: translation, interpretation and presentation of sampling analyses to the people of 17 houses. Organisation of a second round of air samplings and tests in the houses and explanation of the results, as well as soil testing. A third analysis is underway thanks to the generosity and solidarity of other groups and individuals
- Preparation of three court cases for victims represented by AVAQ
- Press conference
- Contacts with media: newspaper articles, radio and TV interviews, news appearances, preparation of a TV public affair show ...
- Preparation of a workshop for the Global Asbestos Congress
- Work on developing environmental socio-economical solutions for the tailings
- Beginning of an interest group in Thetford-Mines
- Enabling persons exposed to asbestos to get group pulmonary examinations in the USA as Quebec exams are questionable!
- Contacting people and spreading awareness

General objectives:

- Help to raise the level of awareness and understanding of victims, and of people involved with asbestos so they are able to stand up and fight for themselves and others in order to develop winning solutions
- Help to develop a local association in Thetford-Mines
- Influence the governments to change the environmental, health, and compensation laws and put a moratorium on asbestos here and abroad
- Offer solutions to the environmental problems created by the tailings
- Help diversify the economy and find alternatives to asbestos

AVAQ is asking governments to:

- Order a moratorium on the production and use of chrysotile asbestos until a really safe way of using it for the community and the workers is found and is readily applicable here and abroad

- Ensure that social and humanitarian concerns are part of proceedings in regard to the compensation of asbestos victims, and that these concerns are enshrined in law and policy
- Establish an effective policy of prevention against asbestos environmental risks, supervised by the National Institute of Public Health
- Support the inclusion of chrysotile on the PIC list

Environmental Protection

Faced with what is being termed by many as a major ecological disaster, the population of the Thetford-Mines area is surrounded by billions of tons of asbestos tailings with high chrysotile content. The women of the area have by far the highest mesothelioma rate in the world.

Environmental situation

Asbestos has been mined in different areas of Canada for over a century. Mining sites have now shrunk to two small areas of Quebec province, 60 km apart. Three mines are still operating but only part time and one is closing down indefinitely. Two of these mines, including the closing one, are located 10 km apart in the area of Thetford-Mines. This city is at the heart of the area that was the most extensively mined for asbestos in Canada. In an area of roughly 2000 sq km there are more than thirty sizeable tailings piles, some of them really huge. The other partly active mine is located in the town of Asbestos.

We are focusing for the time being on the most extensive area with its thirty or more piles that have accumulated billions of tons of tailings over more than a century. Soil tests show that these tailings have a very high chrysotile content. Many houses are built close to the tailings, sometimes less than 100 meters away, and residues from the tailings are widely used for landscaping. One company has bought a complete tailings site and uses it to fill lawns, garage entrances, roadsides... with the still precious mining left-over called “mine sand” by the local people. Regulations concerning the use of “mine sand” have only recently started to be applied and a layer of soil should now be put on top of “mine sand” when it is used as fill for private use.

Kids enjoy driving their four wheels cart up and down the steep slopes of the tailings.

According to a 2003 study from the *Institut national de santé publique du Québec (INSPQ)*, the National Institute of Public Health of Quebec, a governmental organisation, women of the asbestos-mining region have the highest level of mesothelioma in the world. Keeping in mind that no other country surpasses Quebec for the incidence of pleural mesothelioma for women, here’s what the study says:

“ Women in the mining region thus had 10.8 times more mesotheliomas than women elsewhere in Quebec. If we added to the 10 women, 7 other women who

no longer resided in the mining region at the time they were diagnosed, but who had lived there in the past, the risk then became 20.3 times higher”.¹

Sampling air quality

Between August 2003 and 2004, AVAQ had air samples taken in Thetford Mines’ houses around asbestos tailings. We had them analysed to determine the asbestos concentration in the air of the houses. The first results are troublesome.

Fifteen of the 28 air samples taken in 26 houses exceeded the AHERA action criteria for US schools. This criteria is a pollution indicator. It considers short as well as long asbestos fibres at a statistically significant level on a clean filter, compared to the asbestos ambient background.

There are other criteria based on an estimated excess of risk for health that do not take the short fibres into account. Three of our samples were analyzed using such a criterion. All three exceeded by 7 to 10 times the 0.0009 f/cc benchmark set for cleaning New York City apartments after the World Trade Center collapse in 2001.

The USEPA estimates that the increased risk of asbestos-related cancer for a 30 years residential exposure at that level is 100 /million. This is very high. That benchmark is, to our knowledge, the only one for residential exposure, which is precisely what we are concerned with in Thetford Mines. Our budget restrictions had not allowed us to complete this type of analysis so far but recent financial help is permitting it now.

We also had soil samples analysed that were taken near houses. In 6 of the 14 samples, the chrysotile content exceeds 10 %, and in 3, it exceeds 60%. We also collected dust from a window pane facing a road where trucks carrying “mine sand “ for land filling pass by. This sample shows 1.2 billion/sq cm short and long chrysotile structures, and 110,000 / sq cm long structures. According to the Settled Asbestos Dust Sampling and Analysis manual, published by CRC Press in 1994, these levels are “in the range of a significant accidental release from an abatement site.”

Pollution control

The closed mines are as deep as 300m and the heaps of tailings, surrounding them as high as 150m and they have significant asbestos content. The tailings consist mostly of fine sand and dust.

¹ Louise De Guire M.D. The Epidemiology of Asbestos-Related Diseases in Quebec, Institut national de santé publique du Québec July 2004; 4.2: 26.
Figures from: Siematically J, Camus M, Désy M. Comparaison du risque de mésothéliome de la plèvre entre les régions minières et les autres régions de la province. Laval: Institut Armand-Frappier, Université du Québec; October 2001.

The air pollution coming from the tailings could be controlled by simply covering them adequately. At this early stage in our research, revegetation appears to be the preferred option. Many aspects have to be considered: the height of the tailings; the depth of the pits; the steepness of the slopes; the potential pollution from these sites; the climate: from -40°C to 40°C with lots of snow, rain and wind; the aesthetic quality of the covering; the need of adequate irrigation; the need to add soil for revegetation since the tailings are completely barren; the potential of contamination of groundwater.

Some attempts have been made to revegetate the tailings with questionable results so far. Soil has been placed on the slopes in order to support vegetation, but rain, wind and snow constantly push it downwards. Another solution would be to use the existing holes as underground waste management units and backfill the shafts and drifts. But the movement of tailings required in order to do this would cause such huge amounts of toxic dust that it has to be excluded for the time being. Finding adequate means of revegetation still appears as the most promising way and researches are underway.

To moderate the high slopes, a road could be built surrounding the tailings, leaving a 40 foot distance or so, between each turn, thus creating a plateau type of structure that would serve as a drainage path. If this were to be done, then different means of stabilizing the soil would have to be considered, such as anchoring long structural poles in the tailings.

The other consideration of course is the pollution coming from the tailings that have already been spreaded around by landscaping activities. The very first thing would be to stop altogether any kind of use of the tailings and secondly to cover gradually all the areas where tailings are still in the open. Long run affair...but it took 125 years to get where we are now!

Environmental and Socio-Economic Regeneration

In 1878 the first production of asbestos took place in Thetford-Mines: 40 tons were produced that year...a hundred years later over one million tons of asbestos were produced in the area. Over a century and a quarter of mining in the Thetford-Mines area, 35 millions tons of asbestos were produced. Since it takes 100 tons of ore to make 1 ton of asbestos, 3.5 billion tons of residue were produced during that time. 3.5 billion tons of asbestos tailings are lying around in a 200 sq km area, which amounts to 2.7 billion cubic meters of these tailings. Lined up, these one meter cubes would circle the earth 67 times.

Social environment

Now you can imagine what it meant for the people of the area to produce all that asbestos. At the turn of the century, rather than going to school, kids were sent to work for 50 cents a day, breaking down manually the asbestos ore. Asbestos developed as a mono-industry in the area and all the economy was spun around asbestos production. Before mechanisation, everybody was involved: men, women, children.

For a century, everything bathed and still bathes in asbestos; all the socio-economic life has been a reflection of asbestos – the economy, the way of life, the names of the institutions: the College of the Asbestos Area, the Regional Administration of the Asbestos Area, the Savings Bank of the Asbestos Area, the Hospital of the Asbestos Area, the Funeral Home of the Asbestos Area and the Cemetery of the Asbestos Area. Everything is impregnated with asbestos including the lungs of the people. By the way, Asbestos is the name of the city at the core of the other asbestos area.

Asbestos is intimately interwoven with the way of life of the people, not only at work, in the economy and the social life, but the whole scenery has become the reflection of the industry. Tailings as high as 150m have been mushrooming all over the place and in many areas you just can't find an angle of vision without seeing tailings.

These tailings are greyish, completely barren and very toxic. Visitors from many countries are flabbergasted by the sight and just can't understand how we could have let that happen and, moreover, how we can still not do anything about it. No one can think of something like this happening in their countries.

For how long will this keep on? We know that the asbestos industry is in its death throes and is likely to disappear within a few years, but for how many centuries, how many millenium will these tailings continue to surreptitiously breath out suffering, disease and death?

Someone had to stand up and dare face the situation, dare talk about it, dare try to find solutions. Who else than the Asbestos Victims Association of Quebec, since no one does anything about it ...or so little.

Social and human desolation

People are at the core of the situation and the regeneration project should be developed with them and addressed to them, particularly to the most affected ones. People from the Asbestos Region have literally lived and died from asbestos for over a century . Though asbestos is a cruel master, they owe it their material prosperity and stability

There was a time when the industry was providing more than 5000 direct jobs in the area. Coupled with all the related economic activity, it meant a lot, it was the motor of their economy.

Few jobs are now derived from the asbestos industry. Out of the thousand part-time jobs still alive in the area, 450 just disappeared when one of the two remaining mines closed indefinitely. These mines are owned by the same company and last year it had revenues of \$50 million and lost \$30 million. Things are not looking any brighter for the future with competitors like China and Russia. The industry is doomed but the Quebec and Canada governments maintain it relentlessly on the artificial respirator with millions of dollars of public money. Some wonder what are the real motivations for doing so. Are there other reasons on the agenda than protecting a few local jobs?

The industry is going down the drain, people are more and more aware of the evils of asbestos and of the negative perceptions of their work in the external world. They are counting their dead and wounded.

But the few jobs left are still meaningful and the pride and sense of achievement gained through a century of asbestos exploitation at the price of their lives, health and deaths cannot be brushed off just like that. But the jobs are coming to an end and if nothing is being done, in a few years, a whole population will be left in the ruins of a huge ecological disaster with only welfare checks to face their disarray.

NOW, is the ideal time to put an end to the production of asbestos in this area and in the only other remaining mine in Quebec. This means no more asbestos from Canada, and therefore, not from the whole western industrialized world. When Canada stops producing asbestos altogether, a new paradigm will have been set for the asbestos trade and production.

Added value project : from Eden to Shamballah

So, quick! A good project that people could grab on to before they have sunk too low to come back up.

The project would have to address the situation in a systemic way and develop solutions for all the aspects of the problem because everything is so intimately interwoven: the environment, the socio-economic situation and the personal feelings of the people. The project should therefore, control pollution, be self-sustaining, generate money, create long term jobs and confer renewed dignity to the population. It would put an end to the asbestos scene completely and for good. So, what could be an all-encompassing project that would link up all of these aspects and deal with them in a complementary approach?

We are in touch with persons in charge of two successful projects with similar concerns that are very inspirational to us.

One is called : *Mine closure, environment and socio-economic regeneration project*. It is a project of the World Bank taking place in a coal mining area of Romania to: “ ...support the government’s efforts to reduce the burden on the national budget by permanently closing uneconomic mines in a socially and environmentally sustainable manner. It develops effective procedures for a technically and environmentally sound approach to formally closing uneconomic mines and aims at mitigating social hardships resulting from the sector’s restructuring and assists in creating diversified employment opportunities for redundant labor.”

The other one is called the *Eden Project*. Built, in Cornwall UK, it is a series of gigantic greenhouses that demonstrates the dependence of man on plants. It is built in a disused china clay quarry. The greenhouses are enormous, tall enough for rainforest trees and big enough to show the biodiversity of the natural world. Since it opened in March 2001, it has attracted

more than 5 million visitors and now employs several hundred full time staff, much needed jobs in an area of high unemployment.

It just so happens that the pit of the clay quarry in which the Eden Project is built has a very similar configuration to asbestos mining pits.

A third project, echoing the *Eden Project* in my mind, would be called *Shamballah* – Shamballah is a mythic Tibetan City where evolved beings live in peace and harmony in the the depths of the Himalayas. Some think it's a real city that only evolved enough people can reach and others feel its an inner space that we can develop within ourselves.

Applied to the Thetford-Mines area, *Shamballah* becomes the embodiment of the ideal city borne in the heart of human beings. It is meant to realize the redemption of a gloomy wasteland generating disease, suffering and death into a luminous garden celebrating life in an hymn of flowers trees and animals of all kinds. This idyllic dream would of course necessitate lots of hard work, commitment and fervour from each and everyone. It would become the new social, human and economic motor of the area much in the same way that asbestos had been, but from the opposite perspective. It would bring life instead of death, light instead of darkness, dignity instead of humiliation, joy instead of suffering.

With all the old mining sites to regenerate in the area, this would be a long term project and people from each community would develop their own dreams in conjunction with the others. The whole area would become a lively unfolding of different forms and concepts: a biodome here, a wild animal park there, a beautiful little auberge sitting on top of a verdant hill, (previously an asbestos tailing), a wild birds sanctuary, an open air concert hall with tremendous acoustic sitting at the bottom of a deep pit with stands all around the edges, nice little lakes to go swimming ...and why not a meditation temple on top of an old transfigured tailing, for the ones so inclined.

Financing of course would be a major requirement to get the project going. The approach of the *Eden Project* is particularly inspiring in this respect. The *Eden Project* is a non-profit organisation acting as a charity organisation with a charity number. It could raise significant amounts of money from the start because the main protagonists: architect, consultants, contractors...agreed to wait for the project to generate money before getting paid. Since the project has an educational vocation aimed at promoting environmental, cultural, ethnical and general human values it could benefit from the generosity of many public and private organisms from the EU and other countries.

Shamballah, would have a definitive affinity with the financing approach of the *Eden Project* and would aim at self-sufficiency from the very start in order to develop a partnership type of relation rather than a dependency link, with the people and organisations that would invest in the project rather than donate. In this type of association investors would preferably be non-profit organisations, governments and local people who would act as partners. People from the region would be privileged partners, for the conception and the financing of the enterprise.

Partners could of course decide to reinvest or collect part or all of their profits coming from their high performance investments in *Shamballah*.

Everything would be well planned and organised to create jobs, attract visitors and generate prosperity and happiness.

The governments, the local communities, the mine owner, the pro-asbestos people, the ban-asbestos people, the people from all different ideologies would forget about the old quarrels and join the bandwagon.

Conclusion

Setting up a landmark

Such a tremendous effort of environmental, social and economic regeneration would necessitate creativity, and generate the development of new strategies, new techniques and technologies and fantastic know-how that could be transferred to other organizations to help them develop their own solutions. At the beginning it would set out to solve similar social and environmental situations but could eventually be applied to a whole range of different matters. This in itself could be a source of income and an inspirational contribution to the social, economic and human regeneration of our beloved planet earth.

Join the bandwagon.