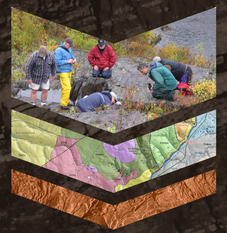
Natural Resources

Geology Matters 2012

Experts
on the ground



Opportunities
on the ground

Mineral Resources Branch

NOVA SCOTIA

Open File Illustration ME 2012-005

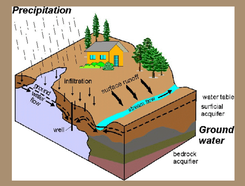
Engagement Program

Geology: A Tool for Social Engagment by G. J. DeMont

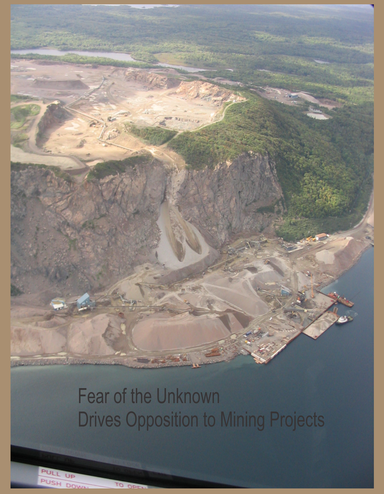
Geology: a Portal to Social Engagement for the Mineral Resource Development Sector

- Mining is a subject that often polarizes communities.
- The division generally occurs along a line defined by people who want the jobs associated with the mine development and those who prefer to have a “clean environment”.
- The question often left out of the debate is: Are the two mutually exclusive?
- Judgments on mining are often based on well documented legacies of environmental disasters related to unregulated, poorly regulated, and historical mining operations.
- The change from historical rip, strip and run operations to the mines of today, which are highly regulated and take great care to protect both the health of the natural environment and the communities in which they work, has not been effectively communicated to Nova Scotians.
- This void in public education and advocacy has been filled by mining opponents, much to the detriment of those companies attempting to develop new mines.
- Another major challenge lies in society’s general lack of exposure to, and understanding of, geology and mining.
- Very few people in Nova Scotia have been exposed to geology and mining through the provincial education curriculum. This knowledge void makes it easy for mine opponents to sway public votes on mine approvals.
- Lack of education on these subjects makes it very difficult for community leaders to distinguish fact from fiction in public debates.
- Winning community support for mining operations in Nova Scotia is a challenge, but with the development of social networking it is no longer just a provincial issue. It is a global challenge.
- The key to bringing about change in community support lies in education and engagement.
- But how do governments and mineral resource development companies conduct that education work when the simple mention of mining polarizes communities and leads to a shut down in people’s desire to listen, learn and engage in meaningful dialogue?
- Geology provides that portal because it is the link between mining, the natural environment and community health and safety.

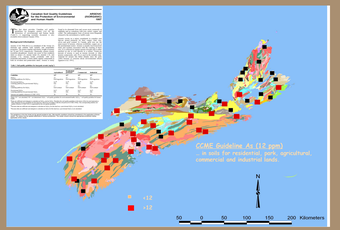
Nova Scotians walk around on top of bedrock and surficial materials everyday and yet most people can not distinguish the difference between them or understand their roles in both protection of the natural environment and their daily lives. Mineral exploration companies understand these materials, so why don’t they share that knowledge with the communities in which they work? By sharing their knowledge they build trust with the local communities. This education work could go a long way in their efforts to obtain a social license to operate.



Water, the life blood of society is sacred to all of us so it is often an issue of between communities and mining projects. As with the geological materials most people do not understand the geology-water connection. What can you do to change that?

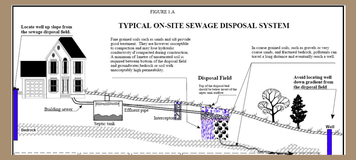


Most Nova Scotians, including community decision makers have not taken geology courses. This means they have training on how the earth works. When they are told that your mine will drain or pollute their well or their constituent’s well they have no way of determining if that is fact or fiction. This lack of knowledge generates fear and mine opponents exploit those fears when they oppose your project. Taking the time to educate those decision makers and the public about how geological systems work will help alleviate those fears and expedite the permitting of your mine and other future mines.



When metals in the environment occur in economic concentrations they are mined. However, there are health risks associated with metals and these risks occur throughout the province, even in areas that have not been subject to mineral exploration and mining. Nova Scotians know very little about where these metals occur and the health risks associated with them. When a metal mine is proposed for their backyard a lot of fear is generated regarding contamination of water, soil and air by the mined metals. The image seen to the left shows soils throughout much of Nova Scotia exceed the national safety standards for arsenic so communities have reason to be concerned. Mining companies understand where these potentially toxic elements occur in the province. They also understand how to safely work in these metalliferous environments. Transferring this knowledge to the local community could help reduce the fear and expedite the permitting of your mine.

Waste disposal, be it intentional such as this sewage disposal system seen at right or an accidental fuel tank leak, are all linked to geology because the fluids enter into geological materials when they leave the Earth’s surface. The type of material these fluids enter will dictate how fast, how far and where that pollutant will travel. Mineral exploration companies gather a great deal of data on the geological materials found on their exploration sites. Sharing that information with the community in which you work could help the communities undertake wiser land-use planning. Have you ever thought of sharing your knowledge?



Presentations have been prepared by the author and presented to community and special interest groups around the province. The talks are tailored to address the topic of interest, but they all contain common themes. They discuss the surficial and bedrock geology and its connections to coastal erosion, climate change, water resources, waste disposal and mineral resources. The audiences are surprised by the many connections between their communities, geology and mineral resources. Most are not aware of the links between “the green society” and mining. Windmills are a good example. They are really just a pile of processed minerals, all of which were mined.

Some Highlights of the DNR Engagement Program Activities 2012:

Participated in four Climate Change Adapation Workshops organized by Service Nova Scotia. Each of the provinces 54 Municipalities are required to complete a Climate Change Adaptation Plan by Dec. 31, 2013. The presentation made the connections between geology, climate change, the natural environment and the health and safety of the participants communities.

Continued work with Dalhousie School of Planning by giving a presentation to a second year class of planning students.

Gave a presentation to DNR’s Extension Services Workshop in an effort to educate DNR staff on geology and mineral resource development.

Working on a series of educational products for use on the new Mineral Resources Branch website.

Continued work on a Cimate Change Adaptation Project in Cheticamp, Nova Scotia in partnership with the Ecology Action Centre