Environment Canada Environnement Canada

The Effects Monitor

Environmental Effects Monitoring Newsletter for the Atlantic Region

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Voisey's Bay Monitoring

The Voisey's Bay Nickel Company (VBN) has determined through feasibility studies that the large nickel deposit located 35 km southeast of Nain, in Northern Labrador warrants the development of a mine and ore processing mill. The proposed mine/mill facility will likely be subject to a joint federal/provincial environmental impact assessment.

In 1995, 27 studies were undertaken by Jacques Whitford Environment Limited, on behalf of VBN, as baseline (pre-operational) data collection. This baseline data collection is continuing in 1996. These studies are being undertaken to provide information about the existing environment that will assist in making impact predictions, provide information for project planning purposes, and provide baseline information for any potential future environmental effects monitoring studies.

The 1996 program is focused on a number of components; marine, freshwater, terrestrial and atmospheric. The marine component involves studies of the chemical, physical and biological oceanography, sediment characterization and identification of the marine plant and animal communities. As well, the studies are defining the ice climate and physical features of the coastal areas. The freshwater component involves studies of stream and pond water quality and sediment chemistry, fish habitat and populations, stream hydrology, pond morphology, primary productivity, aquatic insects and invertebrates, and the groundwater. The terrestrial component involves studies of soil and vegetation chemistry, ecological land classification, birds, large mammals, permafrost and archaeology. The atmospheric component involves studies of the air quality and meteorology of the area.

For more information, contact:
Kathy Penney (709)576-1458

Partnering between business, government and community benefits watershed.

The Molson Companies Donations Fund is the most recent contributor to Bluenose Atlantic Coastal Action Program's (BACAP) community based volunteer water monitoring program. After reviewing the project, the Fund recently donated $5500 to BACAP. "Molson was very interested in the project. They think that it is important for the community to be involved in such activities for both the environmental and educational benefits", said Michael Parker, coordinator of BACAP. "They were genuinely excited about this project and we are hoping to see a representative stop in during the summer for an update."

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Residents from Bayport to Mahone Bay to Upper New Cornwall have been sampling rivers and harbours on a weekly basis for ten full months now. Analysis of the samples has provided BACAP with good knowledge of the water quality of these sites, and the Board of Directors is currently using the information to identify projects that should be undertaken over the next year. BACAP has found that Mahone Bay Harbour waters have become nearly pristine since a new sewage treatment plant has been installed there. They have learned that the Mush - a - Mush River may have good potential as a salmon river if restored. It is now known what impact the lack of proper sewage treatment and poor farm practices in some areas of the watershed are having. As well, BACAP now knows what is "typical" water quality for the area, and has data from numerous local sites that is available to anyone just by contacting the group at their Mahone Bay office.

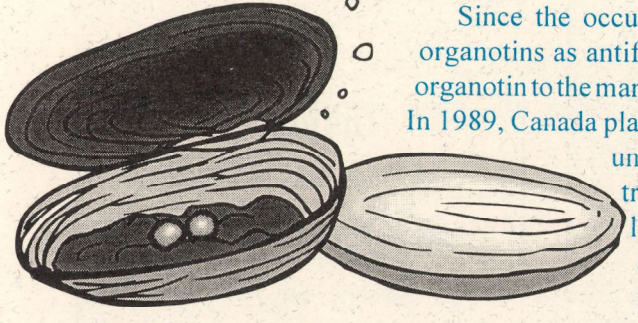
BACAP says that the future of the program will be the expansion of volunteer activities to include such things as sediment sampling, weather monitoring, recording sightings of birds, seals, and porpoises, noting first blooms of various plants and more. In total, BACAP hopes to involve residents in up to seventeen different activities in establishing what they believe will be the most comprehensive community Ecological Monitoring Program in Atlantic Canada.

"It is amazing how powerful it is when business, government and communities partner to tackle an issue." says BACAP Coordinator, Michael Parker. Whether it is finances, technical expertise or an hour a week in sampling time, the people and groups that have partnered in BACAP projects have made for what the volunteer Board of Directors feels is effective local education, research and action. BACAP, in full time operation since May of 1994, expects to have nine employees on staff this summer, and more than 50 volunteers carrying out six different projects.

For more information, contact Michael Parker (902)624-9888.

Changes In Butyltin Residue Concentrations In Marine Sediments Of Atlantic Canada Between 1988 And 1994

Compounds containing organotin can be toxic to some organisms at very low concentrations and for this reason these compounds have been used in coatings to prevent fouling of vessel hulls by marine organisms. In the late 1970s and early 1980s, evidence was collected that related organotin residues with a range of biological effects in the aquatic environment. The most significant of these included reduced growth and shell deformation in oysters and the development of male sex organs by female snails, which subsequently prohibited reproduction.



Since the occurrence of environmental effects was correlated with the use of organotins as antifouling agents and since that use represents the greatest source of organotin to the marine environment, many countries implemented controls on such uses. In 1989, Canada placed restrictions on the use of tributyltin (TBT) antifoulant coatings under the authority of the Pest Control Products Act. The use of tributyltin paints was restricted to vessels that were over 25 metres in length and to smaller vessels that had aluminum hulls or with aluminum outboard marine fittings. In addition, a maximum leaching rate for TBT from paints was established.

Studies were undertaken by Environment Canada in 1994 to compare TBT concentrations in marine sediments obtained from various coastal locations in the Atlantic Provinces with samples obtained from the same locations in 1988, one year prior to the implementation of controls. Samples were obtained from seven locations which were segregated into large vessel (harbours with commercial shipping) and small vessel (fishing ports and pleasure craft marinas) traffic areas. The results of the analysis of samples for tributyltin (TBT), dibutyltin (DBT) and monobutyltin (MBT) indicate that residue concentrations have generally decreased in the small vessel traffic areas between 1988 and 1994. The ratios

of TBT to total butyltin in the sediments indicated that fresh inputs are still occurring in large vessel harbours while in small vessel locations the butyltin content was likely the result of older inputs. The concentrations in large vessel traffic areas is higher than those of small vessel areas and remains above biological effects thresholds.

In 1996/97, Environment Canada will be conducting investigations to more precisely define the source of TBT to these large vessel areas in order to determine whether additional restrictions or controls are required.

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Atlantic Region Spill Trends Monitoring System

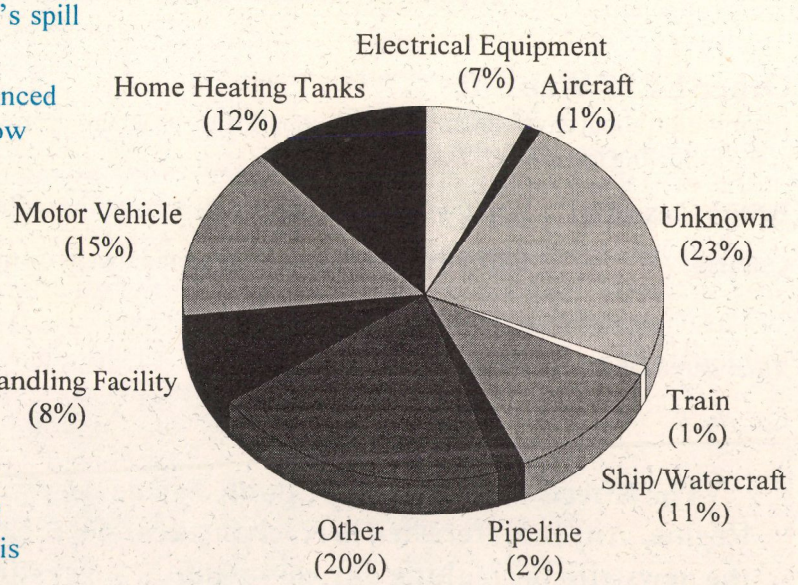
Since 1974, the Emergencies Section of Environment Canada, Atlantic Region, has been keeping manual records of the reported spills in the Atlantic provinces. Due to the obvious limitations of this kind of an information system, the Atlantic Regional Trends System (ARTS), a Macintosh-based computer program, was developed to provide users with improved access to the department's spill data.

Using a Macintosh database program and enhanced graphics software, ARTS was developed to allow users to input spill data in an orderly, categorized format. This information could then be easily used to produce reports, graphs and charts that clearly indicate environmentally sensitive areas and recurrent polluters in the Atlantic Region. ARTS is primarily concerned with capturing a quick, concise account of each spill occurring in the Atlantic Region, rather than maintaining all specific details. For detailed descriptions of individual events, users can refer to the National Environmental Emergencies System database (NEES) which is used for logging all daily reports.

Each ARTS report contains information on the date, location, person or company responsible, substance and quantity spilled. There is also an opportunity to include a brief textual description of further details of the spill. The data stored in ARTS is primarily categorical making it easy for the computer to organize the records in the database for the purposes of searching, sorting and producing different styles of reports including summary, statistical and graphical reports. The enhanced graphing capabilities allow the user to produce graphs to improve the visual presentation of the data.

The Emergencies Section conducts searches on the ARTS when requested by other emergency agencies and partners, the national office of Environment Canada, other government departments and consultants. Data produced by these searches is accessible on a cost recovery basis.

Macintosh based computers are currently being phased out of Environment Canada's emergency program. All



information currently stored in the ARTS database will be imported into the new NEES. With the networking capabilities of the new system and the fact that servers are being installed in all regional offices of Environment Canada, trends data previously stored in the ARTS system will be readily available to provide useful information to users across the country.

For further information contact:
Annie MacNeil (902)426-7805

EEM Studies at Atlantic Region Pulp and Paper Mills - Update

Nineteen Atlantic Region pulp and paper mills submitted environmental effects monitoring (EEM) interpretive reports to Environment Canada in April, 1996. These reports provide the results of the first cycle of EEM studies that were required by the Pulp and Paper Effluent Regulations. Technical Advisory Panels, set up by Environment Canada, are now reviewing and evaluating these reports. By the end of the summer of 1996, this review of the individual reports will be completed and discussions between Environment Canada and the Canadian pulp and paper industry will begin with the objective of establishing the requirements for the next cycle of EEM studies which must be completed by April, 1999.

Joint government and industry technical teams are being established for each of the EEM study components (fish population, fish habitat, effluent toxicity, effluent tracers, tissue contamination) to evaluate the overall cycle 1 results and to recommend the approach that future studies should take.

For more information, contact:
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The Effects Monitor Available on the Internet

The current issue and all back issues of ***The Effects Monitor*** are now available, in both English and French, on Environment Canada's Green Lane at the following Internet address:

http://atlenv.bed.ns.doe.ca/epb/eem/emindex.html

Other EEM Web Sites

Information about environmental effects monitoring programs in other regions of Canada are available on the Internet at the following locations:

British Columbia: **http://www.pwc.bc.doe.ca/ep/programs/eppy/eem/eem.html**

Ontario: **http://www.cciw.ca/glimr/metadata/environmental-effects-monitoring/intro.html**

Aussi desponsible en francais

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The Effects Monitor will be published quarterly by Environment Canada, Atlantic Region. Anyone interested in receiving a copy of the newsletter, submitting an article for the newsletter or making any comments or suggestions, should contact:

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