

EXTRACTIONS



a newsletter from **O'CONNOR ASSOCIATES**

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DOGS FIND PIPELINE LEAKS

Despite ongoing improvements in pipeline coating, corrosion protection and construction techniques, pipelines still develop leaks. Dogs have located 43 pin-hole leaks for Esso Resources Canada Limited and their clients over the last two years. Esso trained Labrador Retrievers to sniff out a new volatile fluid which escapes from the leak and migrates through the soil to the surface. In carefully controlled trials, the dogs accurately located leaks as small as 0.4 mm at a depth of 3.7 m. The technique worked not only on new pipelines where the odorant can migrate easily through porous backfill but also in 10 year old produced-water lines buried in 2.1 m of frozen compacted clay. Esso is patenting the new leak detection fluid in both Canada and the U.S. and training more dogs.

QUEBEC CLEANS UP ITS ACT

The Environmental Quality Act, that is. Members of Quebec's National Assembly passed Bill 65 last June to amend this Act to give new powers to the Minister of the Environment enabling him to issue orders against those responsible for contaminating soil on private lands. However, the provisions of Bill 65 do not apply to public lands that government departments administer. The bill also created new offences, added personal liability for directors and officers, and increased penalties to \$1 million for certain violations. The province is now able to adopt regulations to:

- determine the activities which are likely to contaminate soil
- establish standards for the management of contaminated soil
- set maximum acceptable quantities and concentrations of contaminants
- set levels of decontamination to be achieved before allowing a change in property use, or before allowing demolition, excavation or construction work to begin

OUR CHEMICAL SOUP

In the early 1970s polynuclear aromatic hydrocarbons (PAHs) were thought not to be directly mutagenic or carcinogenic. Recent research by Dr. James N. Pitts, Jr., Professor of Chemistry and Biochemistry at California State University, and other experts in the field, shows otherwise. Dr. Pitts presented his findings to air pollution control professionals and students at the inaugural 1990 Morris Katz Memorial Lectureship in Environmental Research, held in Toronto earlier this year. His research shows that PAHs, present in coal tar, diesel fuel, automotive exhaust smoke and other sources, react with nitrogen oxides, ozone and hydroxyl radicals to produce various mutagenic compounds. In particular, he noted the reactions between PAHs and nitrogen oxides are closely related both to those that cause damage to the earth's ozone layer and to those that cause acid rain.

SELLERS BEWARE

The Michigan state legislature is now considering a bill which may require owners to have their drinking water well tested before selling their property. If the levels of tested chemicals are not within the state drinking water standards, the seller is liable for the buyer's costs to bring those levels into compliance. The seller must also give a copy of the report to the buyer or be liable for the buyer's well-testing costs. Sellers are exempt if the water met the standards within a year before the sale.

EESI DOES IT

Protecting the Canadian environment is the central goal of the Earth Environment Space Initiative (EESI). This joint venture of British Columbia, Alberta, Saskatchewan and Manitoba is designed to produce advanced technology to monitor air, water and land from space to make environmental management easier and less expensive. The initiative could generate more than \$100 million in contracts for western Canadian space technology firms, four of whom have already agreed to a \$1.4 million project definition study.

ONTARIO'S DRAFT OF FRESH AIR

Ontario has released, for public review and comment, draft regulations designed to reduce air pollution in the province. Under the proposed law, firms must implement best management practices and must obtain certificates of approval which will detail operating requirements to keep pollution at a minimum. The toxicity class of a substance will determine the level of technology required to remove it. The regulations classify air pollutants with high toxicity, and toxic substances which persist or which bioaccumulate, as high-hazard contaminants. Polluters emitting lead, dioxins, benzene and other high-hazard contaminants will have to reduce the emissions of these substances to levels obtainable with the best technology known anywhere in the world.

LANDFILL MINING

Communities can increase the capacity of their landfills by mining them. Landfill mining as a component of solid waste management is now under study in New England. Mining can reclaim recyclable materials and separate hazardous materials for safe disposal. Reclaimed earthen or organic material can serve as cover material, saving the cost of outside purchase. The space saved by mining then can be used to augment capacity or to reduce the size of a landfill before closing it.

Robert E. Fahey, solid waste director of Collier County, Florida, runs one of the more successful landfill reclamation projects. Fahey says that just mining decomposed fill can reduce costs for cover material by half—up to \$5 million over the life of the site—and deferring closure saves \$2 million. The potential value of reclaimed recyclables could be about \$25 million to Collier County.

CLEANER AIR ACROSS THE LAND

Environment Canada released a report in July titled, *National Urban Air Quality Trends 1978-1987*. In 59 Canadian cities there was an average of 76% less particulate lead due to the introduction of unleaded gasoline, but no change in ground-level ozone. The report credits government emission control regulations for 50% less SO₂, 33% less CO, and 27% less NO₂.

TWO MILLION BLUE BOXES

More than half of Ontario's 3.6 million households are now participating in the province's municipal curbside recycling program. In May, the Region of Haldimand-Norfolk launched its Blue Box program, pushing the total number of participating Ontario households over the 2 million mark.

HOW MUCH IS "A LITTLE"?

The National Water Supply Improvement Association reports another way of perceiving trace concentrations of various substances. One part per million is equivalent to one second every 11.6 days; one part per billion is equivalent to one second every 31.7 years.

O'CONNOR UPDATE



Rob Matthews, who joined O'Connor Associates as a senior hydrogeologist in 1989, is the manager of the firm's new Winnipeg regional office. Rob has worked as a geologist for more than 10 years in western Canada and Africa. Since joining O'Connor Associates, Rob has conducted environmental investigations and remedial programs at a variety of industrial and petroleum-related facilities and, in his new role, will continue to coordinate these activities throughout Manitoba.

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