



PROGRAMME

Official opening of the Atmospheric Environment Service's new air quality laboratory

Friday, October 4, 1996

Air Quality Symposium

- 1:30 p.m. Dr. Ray Hoff, Environment Canada
"Trends in Airborne Toxic Chemicals"
- 2:00 p.m. Dr. Jeff Brook, Environment Canada
"The Health Effects of Air Pollutants -
What We Know and Don't Know"
- 2:30 p.m. Question and Answer Period

Official Opening Ceremony

- 3:00 p.m. Wine and Cheese reception with the Honourable Sergio
Marchi, Minister of the Environment
- Lab tours
- 3:30 p.m. Welcoming remarks by Dr. Gordon McBean, Assistant
Deputy Minister, Atmospheric Environment Service
- 3:35 p.m. Speech by Minister Marchi
- 3:40 p.m. Unveiling of plaque honouring Dr. Andrew Thomson by
Minister Marchi and Mrs. Ellen Spears, Dr. Thomson's
daughter
- 4:00 Media photo opportunity: ribbon-cutting with Minister
Marchi





Lab Facts

With the opening of its new air quality laboratory in early October 1996, Environment Canada entered another era in research into air pollutants. Using state-of-the-art equipment, scientists in the Downsview laboratory are studying the types, concentrations and transport of air pollutants which may affect human health. These pollutants contribute significantly to acid rain, global warming, climate change and smog.

Environment Canada will use the results of the research from the air quality lab to develop national and international environmental policy and to verify that the country is meeting its air quality objectives and commitments under international accords. These include the Canada -U.S. Air Quality Agreement on acid rain and the Great Lakes Water Quality Agreement.

The laboratory is equipped with the advanced instruments and equipment re-

quired to stay at the forefront of atmospheric research, as well as to improve existing techniques and processes. There will be 12 laboratories in the two-storey building. Seven laboratories have been operating since April 1995. The remaining laboratories are scheduled to open in the fall of 1997.

Phase I cost \$9 million and Phase II will cost about \$1.8 million. The costs are being shared by Environment Canada and Public Works and Government Services Canada.

Each laboratory contains areas to store, prepare and analyze samples. Many samples will come in through the Canadian Air and Precipitation Monitoring Network, which collects samples for research on acid rain, and the Integrated Atmospheric Deposition Network, which collects samples around the Great Lakes for the Great Lakes Water Quality Agreement.

These are the seven laboratories which are open.

Hazardous Air Pollutants - It specializes in short and medium-term field and laboratory research projects, often in conjunction with other organizations such as the University of Toronto and the University of South Carolina and the Tennessee Valley Authority in the United States. The laboratory is used for research into semi-volatile organic compounds such as pesticides, polychlorinated biphenyls (PCB) and polycyclic aromatic hydrocarbons (PAH). These compounds are called semi-volatile because they change states, for example from a gas to a solid.

Organic Analysis - Using samples from the Integrated Atmospheric Deposition Network, this laboratory does routine analysis of pesticides, PCBs and PAHs. The laboratory also develops new methods to increase the automation of the tests and to lower the detection limits even further. Some of the analysis work for the network is shared with Ontario's Ministry of Environment and Energy.

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Carbon Cycle Research - This lab analyzes carbon dioxide, methane, chlorofluorocarbons (CFCs) and other radiatively active gases which contribute to global warming. Radiatively active gases affect radiation from the sun. This laboratory conducts research in co-operation with the University of Heidelberg in Germany as well as with the research arms of the Australian and American national weather services.

Atmospheric Aerosol and Isotope Monitoring - This laboratory is used for process research into the biological, geological and chemical cycles of carbon, trace metals and gaseous sulphur compounds. It analyzes natural and greenhouse gases, such as carbon dioxide, methane and CFCs, at very low levels. Some of this work is being done in conjunction with the University of Toronto.

Mercury Research - It examines mercury in all its states but especially in its gaseous form. Further, the laboratory is being used to develop new methods for sampling and analyzing mercury. Some of this work is being done in co-operation with the Ontario Ministry of Environment and Energy, and research agencies in Germany, Sweden and the United States.

Remote Regions Atmospheric Chemistry - The lab examines how sulphur compounds such as sulphur dioxide and sulphate are formed, and what happens to them when they are emitted and travel long distances in the atmosphere. Studies on Arctic Haze are also conducted. Arctic haze is composed, in part, of sulphates and nitrates which have travelled north from Russia, Canada and the United States and have been trapped by the frigid cold of the Arctic winter. The haze is visible when the sun rises in the spring. Some of the laboratory's work is done in conjunction with the Ontario Ministry of Environment and Energy and the universities of Toronto and Illinois.

Particulate Measurement Research - This laboratory is used for process research on acid aerosols, that is, air containing tiny particles of sulphates and nitrates, two of the chemicals in acid rain. Some of this research looks into the effect which these aerosols have on human health. The analysis, as well as the research into new methods, is partly shared with the federal Department of Health and Welfare.

Research to be conducted in the five laboratories opening in 1997 includes studies on volatile organic compounds, nitrogen and sulphur compounds, and the chemistry of smog, aerosols and ground-level ozone. Also, one of the laboratories is earmarked for the Canadian Air and Precipitation Monitoring Network which now is housed at York University in Toronto.

The laboratory is dedicated to Dr. Andrew Thomson, the director of the Canadian Meteorological Service from 1946 to 1959. Mr. Thomson re-organized the service after the Second World War, helped to found the World Meteorological Service and inspired advances in forecasting, research, climatology and training.

For more information about the air quality laboratory, please contact:
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