

A practical approach to improving the invisible

Long gone are the days when something invisible, like the air we breathe, could not be measured because it could not be seen.

Today's sensitive air quality monitoring instruments can detect a contaminant present in the air at proportions less than one part per billion. That is like measuring a single step in a trip that extends 7.5 times around the world.

Equipped with a variety of control and monitoring devices, local industries identify and manage the quality of each emission source, whether from the stack of a large blast furnace or the pipe of a ventilation hood at a single laboratory technician's workstation.

Large or small, industry's ongoing goal is to cut emissions and remain well below the allowable limits set by Ontario's clean air regulations, which protect public health and the environment.

To encourage continuous reductions in emissions from its member company sites, the Sarnia-Lambton Environmental Association (SLEA) has been monitoring real-time and long-term changes in local ambient air quality for 55 years.

The SLEA, a voluntary environmental co-operative of 20 industrial facilities in Lambton County, maintains a network of seven monitoring stations (see map) in and around the local plants. The network automatically samples and analyzes ambient air quality on a continuous basis.

Managed by independent environmental consultants, the SLEA air quality monitoring network tests the local air for some 20 compounds typical of industrial emissions. As well, several of the stations measure ground-level ozone and particulate matter, the main ingredients in smog – the mixture of air contaminants that are the focus of the Ontario Ministry of the Environment's public smog alert program.

"Long-term trends from our monitoring program show there has been a steady improvement in the quality of the local air we breathe," says Dean Edwardson, SLEA general manager. "The findings of our program help to remind our members of the importance of continuous improvement."

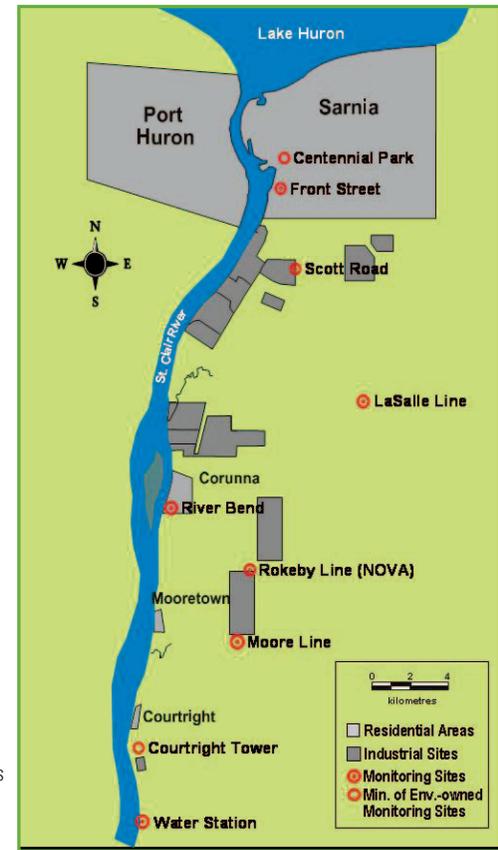
Annual reports of the SLEA's air quality program are used by government agencies, researchers,

students and interested citizens. They may be reviewed at the association's resource library at 265 Front Street North, in Sarnia.

While local industries are making good progress in reducing their emissions, Sarnia-Lambton and Port Huron continue to feel the effects of air contaminants being carried into our area from the U.S. Midwest on prevailing southwesterly winds. As a result, the rate of emission reduction being achieved by SLEA member companies' sites is outpacing the overall improvement in local ambient air quality.

"As our records demonstrate, air pollution is a borderless challenge that requires further reductions in emissions from all sources, whether they are close by or far away, originating from industrial plants or personal automobiles," says Edwardson.

The Sarnia-Lambton Environmental Association collects local air and river water quality data from its unique network of seven monitoring stations (plus two owned by the Ontario Ministry of the Environment) to track and assess long-term trends.



River testing: the foundation for improvement



ORTECH Environmental laboratory technician Lisa Nauta checks the accuracy of the water quality monitor at the Sarnia-Lambton Environmental Association's St. Clair River station, near Courtright.

Long before the quality of the St. Clair River was considered to be an environmental concern, local industries were working together to improve it.

In 1952, several Sarnia-Lambton companies shared their goal that manufacturing processes should be changed to improve our river resource.

Taking a lesson from those very early days, the SLEA's member companies continue to rely on sound science to assess and guide the ongoing environmental improvements at their facilities. Today, the SLEA maintains a monitoring program where more than 8,000 samples of St. Clair River water are automatically collected each year.

"An emotional connection to the environment is important to maintain people's commitment to continuous improvement," notes SLEA President Rick

Van Hemmen, of Nova Chemicals. "But, you also need scientific facts to properly set priorities and to determine if your actions are actually leading to real improvements."

Plants are required to monitor their own river outfalls and ensure they are continuously complying with Ontario's water quality regulations, notes Van Hemmen.

Today, there is good news to tell. Due in large part to the environmental and process improvements made by local industry, the St. Clair River now meets Ontario's stringent water quality guidelines 99 percent of the time. SLEA member companies remain committed to a goal of zero spills to further improve the St. Clair River.

The SLEA's unique river monitoring program routinely tests for 20 compounds that are typically associated with local refinery and chemical manufacturing processes.

Situated near Courtright (see map), the SLEA water quality monitoring station is maintained by third-party environmental consultants. The specialists independently assess the more than 170,000 separate analytical results annually generated from the station's river samples and interpret long-term trends related to St. Clair River water quality.

Results of the monitoring program are reported to the SLEA membership and made available to the public through its resource library at 265 North Front Street, in Sarnia.

The automated river monitoring system is highly reliable and accurate. "For example, our monitoring station can record the elevated levels of motor fuel residues in the river that result from the regular increases in weekend recreational boat traffic during the summer," says Van Hemmen.

Working together improves results

Local industries learned long ago that improving our local environment takes teamwork.

As members of the Sarnia-Lambton Environmental Association (SLEA), both large and small companies share their knowledge and resources to understand the effects of their operations and to develop better ways to eliminate spills and cut emissions to air, water and land.

The SLEA is a voluntary environmental co-operative of 20 industrial facilities in Lambton County. In its 55th year, the association works to keep its members and the public informed about local

environmental conditions and trends, as well as related issues.

Using sound scientific information, the member companies encourage – and occasionally push – each other to reduce their environmental footprints, that is, the effects their plant operations have on our air, land and water resources.

SLEA member companies include: Basell Canada, Inc.; BP Canada Energy Company; Cabot Canada Ltd.; Canada Commercial Services L.P.; Clean Harbors Canada, Inc.; Dow Chemical Canada Inc.; Ethyl Canada Inc.; Fibrex Insulations Inc.; H.C. Starck; Imperial Oil Limited; LANXESS Inc.;

NOVA Chemicals; Ontario Power Generation; PRAXAIR Canada Inc.; Royal Polymers Co.; Shell Canada Products; Suncor Energy Products Inc.; Terra International (Canada) Inc.; TransAlta Energy Corporation; and Waste Management of Canada.

Member company progress, priorities and programs may be viewed by visiting the SLEA's office and resource library at 265 Front Street North, Suite 111, in Sarnia, phone 519-332-2010, or by contacting admin@slea.ca. See the latest environmental findings on the Internet at www.sarniaenvironment.com



Members of the Sarnia-Lambton Environmental Association's Science Committee, which oversees the organization's air, water and land studies, take an unexpected photo break during their inspection of an instrument used to calibrate air quality monitors.