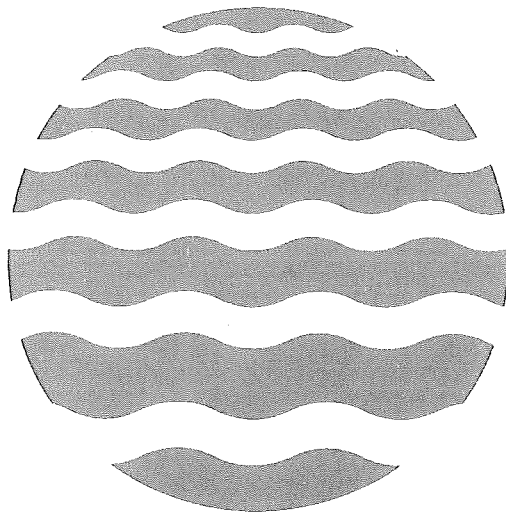


STOPPING WATER POLLUTION AT ITS SOURCE



MISA

Municipal/Industrial Strategy for Abatement



Ontario

Ministry
of the
Environment

The Honourable
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Dear Friends;

Clean water is a prime concern of the people and the government of Ontario. A year ago, I announced the MISA program - Municipal Industrial Strategy for Abatement - under which we will drastically reduce water pollution at its source.

I am pleased to present for public review the first regulation implementing MISA.

The Effluent Monitoring Regulation for the Petroleum Refining Sector and the other MISA regulations provide the scientific framework and the force of law that will achieve, over time, the virtual elimination of persistent toxic chemicals from discharges to Ontario's waterways. In the past years, Ontario and other Great Lakes jurisdictions have made general pledges to achieve virtual elimination. Today, Ontario is carving its cleanup commitment into the tablets of law.

For the first time in Ontario, we will establish limits for contaminants and begin systematic reductions. With this first regulation on monitoring for refineries, we will know precisely what toxics are in their discharges and the amounts entering our waterways. Most importantly, we will then be able to set and enforce abatement requirements.

This regulation has been achieved through consultation with industry, the MISA Advisory Committee of independent experts, and the federal government. I commend them all for their cooperation, hard work and positive attitude. I have released the regulation in draft form to continue this dialogue with the people of Ontario.

Although I am impatient to get on to the payoff portion of the MISA program - choking off the flow of poisons to our lakes and rivers - we need the public's comments, criticisms and suggestions to help make our anti-pollution efforts as effective as they can be.

I am determined to restore the purity of the waters we have inherited for a time and will, in turn, pass on to our children. With your help, we shall do just that.

Yours sincerely,



BACKGROUND ON MISA

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Overview

MISA is a new Ontario initiative to reduce water pollution from industrial and municipal dischargers. For the first time, Ontario will systematically cut back water pollution at its source with enforceable regulations that get tougher as abatement technology gets better. The ultimate goal is the virtual elimination of persistent toxic contaminants from all discharges into Ontario waterways.

Under MISA monitoring regulations, dischargers must measure the types, concentrations and total amounts of toxic substances present in their effluent. Audits by the ministry will ensure this information is accurate and reflects actual operating conditions in the plant. This information will be used to formulate an abatement regulation.

An abatement regulation will place limits – based on the best available pollution control technology which is economically achievable (BAT) – on toxic concentrations and total amounts for each discharger. This will be issued about a year after the monitoring regulation. Dischargers out of compliance with limits must take abatement actions. Both the limits and monitoring regulations are issued under Section 136 of the Environmental Protection Act. Recent amendments to the Act mean convicted violators face increased fines.

The MISA program initially will involve all major polluters of Ontario's waterways: the Municipal Sector and eight major industrial sectors – Petroleum Refining, Organic Chemical Manufacturing, Inorganic Chemical Manufacturing, Pulp and Paper, Metal Mining and Refining, Industrial Minerals, Iron and Steel Manufacturing, and Electric Power Generation.

Why MISA?

Public and scientific concern about water pollution has intensified and focussed on persistent toxic contaminants. These complex pollutants are not being adequately removed by conventional wastewater treatment and constitute a long-term threat to drinking water, fisheries, and wildlife. They either never break down or do so only very slowly. As they accumulate in the environment, they are passed up the food chain in increasing amounts. Almost certainly, left unchecked, persistent toxic contaminants would have serious adverse effects on the people and environment of Ontario.



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The MISA program will apply tough new measures to reduce toxic pollution, ensuring fair but stringent regulations are placed on dischargers.

- monitoring regulations will require dischargers to identify and measure toxic substances in their effluents.
- abatement regulations will reduce the concentrations and amounts of toxic substances that may be discharged
- the limits will be determined by best available pollution control technology which is economically achievable
- limits will be periodically tightened as technological improvements are achieved
- individual dischargers may be required to abate their pollution below the BAT limits if the receiving body of water continues to be seriously degraded
- other industries, currently discharging into municipal sewage systems, will also come under control
- regulations will be applied on a sector-by-sector basis
- the ultimate goal of the program is the virtual elimination of persistent toxic substances from discharges to our waterways.

The Consultation Process

The ministry received more than 100 detailed submissions during the 75-day public review period for the MISA White Paper last summer. Comments from the public were reviewed and taken into account in the development of the first monitoring regulation. These comments have been published under the title "The Public Review Of The White Paper And The Ministry of Environment's Responses To It". Consultation will continue to play a vital role in each successive stage of the MISA program. All regulations will appear in draft form providing a 30-day period for public review and comment.

Public review of the regulations is initially provided by the MISA Advisory Committee (MAC). Independent technical and environmental experts sit on this committee. MAC provides the minister with advice and comments on regulations being developed and other MISA matters.

Consultation with industry is maintained through joint technical committees (JTC), made up of representatives from the ministry, Environment Canada, and the affected industry. These technical committees oversee studies during the pre-regulation phase, make recommendations regarding the program and advise on the content of the monitoring regulation. They will continue to advise on the development of the abatement regulation.

The public will have complete access to MISA information. Records will show which dischargers are in compliance and which dischargers are not. The progress of enforcement actions will also be available.

Monitoring Regulation

The accompanying Bulletin outlines a draft regulation titled "The Effluent Monitoring Regulation for the Petroleum Refining Sector". This, MISA's first regulation, signifies important progress toward the immediate aims of the program and a step toward cleaner lakes and rivers.

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Jim Bradley, Ministry of the Environment, has announced the release of 'The Effluent Monitoring Regulation for the Petroleum Refining Sector'. This draft document is now under public review.

Under this regulation, petroleum refineries must identify and measure concentrations and amounts of toxic substances in their effluent. The objective of the regulation is to establish a practical and cost-effective monitoring process that will generate accurate and scientifically valid data. This data will subsequently be evaluated and then applied to the development of a regulation to reduce the discharge of toxic chemicals.

The Ministry recognizes the petroleum refining industry's responsible attitude and accomplishments in pollution control. Treatment facilities are in place. A substantial amount of data about toxics in the effluent is available. Monitoring will standardize this information to build a reliable base for setting limits.

Pre-regulation research identified hazardous chemicals used by Ontario industry and released into our waterways. That list now contains more than 180 priority chemicals and has been published in a report titled 'Effluent Monitoring Priority Pollutants List' (EMPPL).

Of the chemicals listed in the EMPPL report, 137 are potentially present in petroleum refinery effluent. An additional 18 contaminants, not listed in EMPPL, have also been identified. Of the total 155, tests and data from previous refinery studies indicate detailed monitoring should focus on 110 of these.

The regulation calls for extensive and stringent monitoring of all types of effluent streams: process effluent, cooling water, storm water overflow, landform leachate, bypasses and overflows.

For process effluent, toxics will be identified and measured by chemical monitoring carried out on four levels. Monitoring will occur three times quarterly for 110 chemicals, three times weekly for 12 chemicals and daily for three chemicals. Tests for the entire 155 chemicals for the petroleum refining sector will be done twice in the first year, once every three years thereafter, and whenever significant changes in the refining process occur. A lower level of monitoring will be required for the other effluent streams.

In addition to these tests conducted by the refinery, the ministry will test effluent for a broader range of chemicals. Any further toxics found will be added to the industry's monitoring list.

Toxics appear in discharge in small quantities – often in concentrations in the parts per billion range or lower. The regulation prescribes method detection limits (MDL) which set the level of contamination that monitoring must be capable of detecting. Work is underway to determine if the prescribed limits can be lowered for some toxics.

Biological monitoring provides an additional screening mechanism that complements chemical analysis of toxic substances. Monthly toxicity tests will be run using rainbow trout in undiluted effluent. Rainbow trout are sensitive to contaminants and have been used for many years in a standardized





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test to indicate contamination. This rainbow trout test will also be applied to cooling water once every three months. Further toxicity test using more sensitive organisms – Daphnia water fleas – will be included as test methods are developed.

Flow monitoring will be required to establish total amounts or loading of toxics. The flow rate of the discharge multiplied by the concentration level will give the total amount of contaminant entering a body of water. Previous practice failed to measure this accurately.

Data gathered by chemical, biological and flow monitoring must be accurate, reflecting conditions as they exist at the refinery. The regulation stipulates procedures for taking, storing, analyzing and checking samples. It also specifies when and in what form reports will be submitted. The ministry will audit to verify the quality of the data generated by the industry's monitoring process.

Costs incurred by the regulation will be borne by the industry. Refineries will require sampling, flow measurement and analytical instruments. Additional staff may also be required.

The petroleum refinery industry must fully comply with the requirements of the regulation six months after the draft regulation becomes law. This lead-in time will allow refineries to acquire and place necessary technology and personnel. Criteria to add or delete chemicals to be monitored is now being developed. This will ensure the monitoring process remains practical and produces relevant information.

The MISA Advisory Committee (MAC) has reviewed and contributed to the development of the draft regulation. Established in late 1986, this group of independent technical and environmental experts provides additional expertise and advice to the Minister. MAC generally agreed with the regulation. Some of its recommendations have been addressed in the draft regulation. Those on detection limits, toxicity testing and listing/delisting of chemicals will be incorporated into the monitoring regulation through amendments. Other MAC recommendations, pertaining to research in support of future regulation improvement, will also be addressed by the Ministry. The Committee's report, submitted to the Minister, is available for public review.

The development of a monitoring regulation for the petroleum refining sector is a milestone in the MISA program. The success of the ministry's approach in gaining the co-operation of a major industry sector sets a pattern of government – industry consultation that will be applied to future regulation development. More immediately, the regulation ensures precise, accurate and verifiable information will be available for developing an abatement regulation.

