

## Chapter 4

Ministry of Environment

### Section 4.08

# Environet

Follow-up to VFM Section 3.08, 2003 Annual Report

## Background

The Ministry of the Environment has a broad mandate to restore, protect, and enhance Ontario's environment. It works to ensure cleaner air, water, and land, and healthier provincial ecosystems, through a number of acts and associated regulations, including the *Ontario Water Resources Act* and the *Environmental Protection Act*.

In 2000, the Ministry developed a new information technology vision and strategy, called Environet, to strengthen the delivery of its environmental programs. As of March 2003, the Ministry had spent approximately \$17.1 million developing the four Environet management information systems we reviewed.

In our 2003 Annual Report, we concluded that the Ministry's Environet systems did not provide ministry staff with the information needed to support the Ministry's responsibilities of ensuring that drinking water met regulatory standards, that hazardous waste movements were properly controlled, and that all air emissions were monitored and reported where required. Our major findings were:

- Three hundred of 1,476 registered non-municipal waterworks had never submitted any test results to the Ministry, and 612 (27%) had not submitted the minimum number of water samples for two of the highest-risk substances, *E. coli* bacteria and fecal coliform.
- Although exceedances (water samples with unacceptably high concentration levels of regulated substances) were only a small proportion of the total samples submitted to the Ministry, we did identify 6,725 exceedances from 2001 up to the time of our audit. Of these, 3,181 were Adverse Water Quality Incidents (AWQIs), which are more serious exceedances that can affect human health. Ministry systems and procedures did not ensure that all AWQIs were reported and addressed. For example, the Ministry was not aware of 31 out of 46 AWQIs that had occurred at one waterworks.
- Less than 1% of the province's hazardous waste movements were monitored by the new hazardous waste information system. An older, inefficient paper-manifest system was still being used to handle almost all transactions because the new system could not accept paper submissions. We also noted no evidence of follow-up action on over 5,000 unauthorized hazardous waste movements flagged by the system.
- Total inspection activity was at 73% of 1995/96 levels, and inspectors were averaging fewer inspections annually. We were informed that this was due to the increased length of time it now takes to conduct inspections. Given the significant increase in the number of facilities covered by recent regulations, the Ministry needed to develop a strategy to deal with these new facilities. For example, in 2002 inspectors visited

only 54 of the 357 private drinking water treatment plants and 44 of the 1,119 smaller plants and designated facilities.

We made a number of recommendations for improvement and received commitments from the Ministry that it would take action to address our concerns.

## Current Status of Recommendations

According to information received from the Ministry, some progress has been made on all of the recommendations made in our *2003 Annual Report*, with substantial progress being made on those recommendations relating to the drinking water component of Environet. The current status of action taken on each of our recommendations is as follows.

### Drinking Water Information System (DWIS)

#### Recommendation

*To ensure that the quality of Ontario's drinking water is properly monitored and that appropriate inspection and other follow-up action is taken on a timely basis when necessary, the Ministry should:*

- *complete the development of the Drinking Water Information System (DWIS) as soon as possible;*
- *explore ways to use DWIS and its data to generate reports that would help inspectors identify and prioritize candidates for inspection and summarize waterworks regulatory compliance; and*
- *improve validation procedures to ensure all waterworks records in DWIS are accurate.*

#### Current Status

The Ministry informed us that it had completed the development and implementation of an enhanced version of the Drinking Water Information System (DWIS), including the data migration of over 3,500 drinking water systems. Significant enhancements

made include more efficient data input capabilities, easier retrieval of Adverse Water Quality Incident (AWQI) information, improved security and change control features, and improved compliance checking functionality to align with current regulatory reporting requirements.

The Ministry also reported that it has improved on the reports available to support and help prioritize inspection and enforcement activities. A suite of about 30 operational reports is now available. These reports support inspectors, laboratory services staff, and registration and compliance officers, for example, by identifying drinking water systems that have missing test results, have not identified a licensed laboratory for the testing of regulatory samples, or have not submitted required information such as an annual report or an AWQI report, and by identifying laboratories that have not reported an AWQI to the Spills Action Centre (SAC). Work is also proceeding on the development of a business intelligence tool that will enable data mining and reporting from a variety of ministry databases.

The Ministry further informed us that validation procedures have been improved through the implementation of smart forms, which make it possible to submit drinking water system profile information electronically for direct entry into the DWIS database. Other enhancements that help to improve the accuracy of this submitted information include new edit checks, drop-down menus, and pick lists; and the availability of on-line help. Efforts are also underway to make further improvements to these smart forms. Registration and compliance officers are responsible for reviewing and assessing information provided by the drinking system owner and ensuring its completeness before it is incorporated into the database. Quality-assurance reviews of data entered into DWIS are also undertaken weekly, and new or updated information obtained by field inspectors is also entered into DWIS on a regular basis.

## Submission of Water-sample Test Results

### Recommendation

*To enhance its ability to respond to water problems promptly, the Ministry should improve controls to ensure all waterworks submit their water-sample test results and compliance reports in accordance with regulatory requirements.*

### Current Status

The Ministry informed us that DWIS reporting to identify water systems and laboratories that do not supply required information has now been completed and that available compliance reports have significantly increased the Ministry's abilities to ensure regulatory compliance. The system can now, on a daily basis and based on the classification of the drinking water system, check submitted sample test results against expectations, flag any missing test results, and present the results in a detailed report. Drinking water inspectors can now query DWIS to generate compliance reports to help plan and prepare for inspections, and registration and compliance officers can generate reports on submission status for such items as drinking water system annual reports and engineers' reports and evaluations.

## Exceedances and Adverse Water Quality Incidents

### Recommendation

*To improve its ability to investigate and resolve water problems promptly, the Ministry should:*

- *enhance the existing system to highlight all Adverse Water Quality Incidents for management attention to ensure timely follow-up action; and*
- *promptly update substance concentration limits to reflect new and amended standards.*

### Current Status

The Ministry reported that the AWQI module in DWIS has been enhanced to ensure that additional information is provided for reporting of an adverse

water quality test result. For example, SAC staff can now ensure that the local public health unit has been contacted and determine whether an emergency response has been initiated from the appropriate ministry district office. In cases of microbiological exceedances, the SAC must make personal contact with district office staff to ensure that appropriate follow-up action is taking place. Field staff must ensure that all required notifications and corrective actions are undertaken by the drinking water system owner or operator to ensure that the incident is appropriately resolved. Where field staff suspect laboratory discrepancies, they contact the laboratory in question for further investigation.

The Ministry has developed and implemented a risk-based protocol to ensure timely notification of appropriate staff and senior management when AWQIs occur. This protocol formalizes the business relationships between the SAC, the Safe Drinking Water Branch, and the Operations Division at both the regional and district levels to ensure prompt and appropriate responses, including on-site investigation. The protocol deals with the full range of potential AWQIs, the required written and verbal notifications both during and after normal working hours, and what ministry actions are required to follow up on and resolve the incident.

The Ministry has also advised us that procedures have been put in place to ensure that new standards, once brought into effect through a new or amended regulation, are input into DWIS on a timely basis. Specifically, when the Environmental Sciences and Standards Division informs the Drinking Water Management Division of a new or amended limit and its effective date, the required updates are performed by a database administrator.

## Reporting of Adverse Water Quality Incidents

### Recommendation

*To ensure that all serious water problems are corrected, the Ministry should consider incorporating a follow-up reporting/resolution module within the*

*Drinking Water Information System that would provide information to management about incident resolution for each Adverse Water Quality Incident.*

#### **Current Status**

The Ministry informed us that when an AWQI occurs, the SAC records both the verbal and written information provided by the laboratory and the drinking water system owner into DWIS. The information is automatically transferred to the Ministry's Integrated Divisional System (IDS), and an incident report is automatically generated. Complete details of the resolution of all AWQIs are currently captured in IDS. Closure of the AWQI report requires the submission of a Notice of Issue Resolution by the drinking water system owner, and new drinking water system regulations effective May 2003 require reports to be submitted to the Ministry for every AWQI no later than seven days after the issue has been resolved. The AWQI module of DWIS now includes the ability to record when this written notice has been received, and DWIS can generate reports to inform management on the status of these reports.

### **Hazardous Waste Information Network (HWIN)**

#### **Recommendation**

*To ensure that all hazardous waste movements are properly monitored to minimize the risk to the public, the Ministry should:*

- *develop and deliver an ongoing incentive, conversion, and communication strategy to promote the adoption of electronic manifests by the hazardous waste industry; and*
- *develop Hazardous Waste Information Network analytical and reporting tools that provide summary information related to the generation and movement of hazardous waste and help identify potential problems warranting follow-up.*

#### **Current Status**

The Ministry informed us that Hazardous Waste Information Network (HWIN) outreach activities have been completed to determine why industry users are not using electronic manifests. Nine meetings were held with key clients from fall 2003 through fall 2004. A summary of stakeholder concerns has been compiled for consideration as part of a comprehensive overhaul of the HWIN program once an anticipated waste regulation review initiative is announced.

The Ministry informed us that development work continues on the HWIN reporting function. Two exception reports have been operational for some time and are generated to provide information regarding uncertified carriers and receivers, as well as carriers and receivers that carry or receive uncertified waste. These reports are provided to the appropriate district office for follow-up. Ministry staff can also extract a number of information reports from the HWIN system to obtain such details as company registration, status, and site information; payment and other financial transaction details; and information on manifests recording the movement of hazardous waste.

As of May 15, 2005, generator exception reports were available from the HWIN. HWIN carrier and receiver exception reports have been developed and are in the final stages of testing. At the time of our follow-up, these reports were anticipated to be available at the end of September 2005. The full set of exception reports for generators, carriers, and receivers are available through the older HWIS system. These reports will be used by ministry staff to follow up on problems identified. It is intended that HWIN will identify potential exceptions in the same manner as the older HWIS system does, with the addition of generator exception reports. Full implementation of these and other improvements, such as those suggested through the outreach initiative, will occur as part of the comprehensive overhaul

once the anticipated waste regulation review initiative is announced.

Ministry staff are currently in the process of following up on suspected violations from the 2004 exception reports and are using exception report data as part of the risk assessment process to determine which facilities are candidates for inspection or alternative enforcement or abatement activity for the 2005/06 fiscal year.

### Registration of Hazardous Waste Facilities

#### Recommendation

*To ensure that all hazardous waste is moved in accordance with regulatory standards, the Ministry should:*

- *ensure all active hazardous waste generators are registered;*
- *investigate hazardous waste movements initiated by unregistered generators; and*
- *investigate hazardous waste movements where the generator, carrier, or receiver is not authorized to handle the waste type.*

#### Current Status

The Ministry informed us that registrations were received from 72% of all known generators during the January 1 through February 15, 2005 registration period. Compared to 2004, this represents an increase of 22% in the number of generators who registered within the legislated time frame. Past ministry practice was to send out three reminder notices, but in 2005 more than 16,000 fourth notices and, commencing February 24, more than 11,000 fifth notices were either emailed or sent by regular mail to known generators who were not yet registered. The fifth notice advised these generators that the 2005 registration period had passed, that these generators' registrations had now expired, and that they might be in violation of Ontario's waste management regulations. The Ministry also informed us that the registration system has been streamlined and made easier to understand,

reducing the number of calls to the Ministry's help desk during the registration period by approximately 50% compared to the same period in 2004.

The Ministry informed us that HWIN-based information documenting waste shipments generated, carried, or received without proper authorization continues to be developed. Generator exception reports are now available, while carrier and receiver exception reports are not yet available from HWIN but can still be produced through the older HWIS system. Full exception reports for carriers and receivers were expected to be available later in 2005.

Unauthorized waste movements are investigated through a variety of means, including HWIS or HWIN exception reports provided to district staff for follow-up, the receipt of a complaint regarding waste management activities, or as a result of observations made during proactive inspections of waste generators and receivers by district staff. Through the use of exception reports, the Ministry identified a total of 156 receiver exceptions and 187 carrier exceptions for the 2004 calendar year. These exception reports are currently being reviewed and are being provided to the district offices for appropriate follow-up. Where violations are confirmed, the incident will be referred to the Ministry's Investigations and Enforcement Branch (IEB) for further enforcement action.

The Ministry further informed us that, in addition to following up on exception reports, it remains committed to undertaking inspections of hazardous waste facilities. Since January 2003 it has undertaken over 1,470 inspections at sites where hazardous waste is either generated or received. Over two-thirds of these sites were found to be in regulatory compliance, with no environmental or human health concerns being identified. The Ministry initiated abatement activities for the remaining one-third, where non-compliance was found. These abatement activities ranged, depending on the nature and severity of the problem identified, from

scheduling the site for re-inspection at a later date, to requiring the site owner to develop voluntary abatement measures, to issuing an order requiring the company to take specific action, to issuing an offence notice and referring the case to the IEB.

## INSPECTIONS AND MANAGEMENT INFORMATION SYSTEMS

### Recommendation

*To ensure inspection coverage is risk-based and that inspection resources are allocated most efficiently, the Ministry should:*

- *develop Environet reports that analyze the state of Ontario's environment and compliance with its regulations so that inspection resources can be allocated based on the greatest risks to human health;*
- *re-assess waterworks inspection coverage to ensure more non-municipal waterworks are inspected; and*
- *complete the development of a regime for laboratory inspections to ensure testing standards are being met and all Adverse Water Quality Incidents are reported promptly.*

### Current Status

The Ministry informed us that it uses the full suite of reports and query capabilities generated through DWIS and the Laboratory and Waterworks Inspection System (LWIS), as well as information gathered from across other program areas, as aids to its work-planning and priority-setting and in its targeting of drinking water systems that may be non-compliant, particularly in areas related to the protection of human health. According to the Ministry, the combined capabilities of DWIS, LWIS, and other systems such as IDS have allowed it to become more efficient at identifying drinking water health risks across the province. These technologies have facilitated the implementation of a new risk-based approach to proactive inspections for municipal drinking water systems. For example,

by running queries on LWIS, the Ministry determines which municipal systems are eligible for a new Focused Inspection Protocol. A municipal system is eligible for such focused inspections if it has been fully inspected with no noted deficiencies for three consecutive years. Because of their demonstrated lower risk, the scope of inspections at such facilities is reduced, thereby allowing inspectors to spend more time on higher-risk systems.

Inspectors also use DWIS before an inspection to review the facility's AWQI history to identify areas requiring close attention. In future, the Ministry plans to share or merge data between LWIS and DWIS, thereby enabling AWQI information to be available in LWIS. When this capability is in place, a system that is eligible for a focused inspection but has a significant history of AWQIs may have its focused inspection supplemented with additional elements from the more detailed inspection protocol to address additional areas of potential risk.

In addition, the Ministry informed us that a link between Environet and IDS has also been completed, facilitating the transfer of IDS data into the Environet system. The Ministry is planning to develop compliance and enforcement reports using these new data, and is also developing a business intelligence tool to further support the drinking water program. Environet reports will also be instrumental in fulfilling new legislative requirements for preparing the Chief Drinking Water Inspector's annual report on the overall performance of drinking water systems in Ontario.

For non-municipal systems, the Ministry advised us that it is currently developing a comprehensive risk-based compliance strategy. Key to this strategy is the advice received from the Advisory Council on Drinking Water Quality and Testing Standards established by the Minister in 2004. The Council's report, released in February 2005, made a number of recommendations, including the development of risk-based, site-specific approaches for municipal non-residential, non-municipal seasonal residential,

and non-municipal non-residential systems; and that the responsibility for these systems be transferred to the public health units. A working group of Ministry of Health and Long-Term Care and Ministry of Environment staff is currently working to finalize the strategy.

With respect to laboratory inspections, the Ministry informed us that it has developed and implemented a laboratory licensing and inspection program, and the inspection program has been operational since October 2003. All licensed laboratories performing drinking water testing are subject to inspection, and a laboratory inspection protocol document has been developed and is being used by laboratory inspectors to ensure regulatory compliance. The Ministry conducts pre-planned inspections (which may be announced in advance or take place on a surprise basis), and also conducts inspections in response to suspicions or allegations of non-compliance.