



OFFICE OF THE  
AUDITOR GENERAL  
MANITOBA

October 2007

Audit of the  
Province's Management of  
Contaminated Sites and Landfills

Website Version

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October 2007

The Honourable George Hickey  
Speaker of the House  
Room 244, Legislative Building  
Winnipeg, Manitoba  
R3C 0V8

Dear Sir:

I have the honour to transmit herewith my report titled, *Audit of the Province's Management of Contaminated Sites and Landfills*, to be laid before Members of the Legislative Assembly in accordance with the provisions of Section 28 of The Auditor General Act.

Respectfully submitted,

Carol Bellringer, FCA, MBA  
Auditor General

Website Version

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## Executive Summary

In November of 2005 the Office of the Auditor General (OAG) released a report entitled, *Review of the Province of Manitoba's Management of Contaminated Sites*. That review was initiated in response to evolving changes to government financial reporting standards. By March 31, 2006, all provinces and Canada were required under the Public Sector Accounting Board (PSAB) of the Canadian Institute of Chartered Accountants (CICA) to report and/or disclose in its financial statements (the Public Accounts) its environmental liabilities. The review focused on the processes in place for the Province to accurately identify and, where required, estimate the cost of environmental remediation for provincially owned contaminated sites under their responsibility, that is sites owned by provincial departments and Special Operating Agencies (SOAs). Our initial review excluded the management of contaminated sites owned and operated by Crown organizations, Government business enterprises, school divisions and municipalities.

In this report, we conducted an in-depth audit of the management of contaminated sites for those entities in the Government Reporting Entity (GRE) and in municipalities. Although municipalities are not included in the GRE, *The Municipal Act* of the Province of Manitoba requires them to comply with Public Sector Accounting (PSA) standards. See **Appendix C** for a listing of entities included in the GRE.

The objectives of our audit were as follows:

- To determine whether the processes of agencies, boards, crown organizations, school divisions, universities, colleges and hospitals (entities)<sup>1</sup>, and municipalities for the identification of contaminated land sites and for the estimation of costs associated with remediation of these sites were sufficient to ensure appropriate accounting information was available to account for and report environmental liabilities in their financial statements.
- To determine whether the Department of Conservation (Conservation) had adequate monitoring procedures to ensure compliance by government entities, municipalities and industry with:
  - *The Contaminated Sites Remediation Act* (CSRA); and
  - The Storage and Handling of Petroleum Products and Allied Products Regulation (Petroleum Products Regulation) of *The Dangerous Goods Handling and Transportation Act* (DGHTA).

<sup>1</sup> Throughout this report, agencies, boards, crown organizations, school divisions, universities, colleges, regional health authorities (including hospitals) are referred to as either "entities" or "government entities".

- To determine whether the Department of Conservation was adequately licensing, permitting and monitoring landfills to ensure compliance by landfill owners and operators with:
  - *The Environment Act*; and
  - The Waste Disposal Grounds Regulation (WDG Regulation) of *The Environment Act*.
- To determine whether Department of Finance (Finance) processes for the compilation of costs associated with remediation of contaminated sites owned by entities were adequate to ensure completeness of estimates of the Province's potential liability for appropriate reporting in the Public Accounts.
- To determine whether the Province and the municipalities were reporting their potential environmental liabilities associated with landfills.

## Conclusions

Some of the key conclusions of our audit were:

- Policies and procedures for the management of contaminated sites among government entities and municipalities, especially those with properties that had been exposed to contaminants, were not sufficient.
  - For the majority of entities and municipalities that had contaminated sites, policies and procedures were not in place to guide the management of those sites.
  - The majority of entities and municipalities with contaminated sites were not preparing financial statements in accordance with PSA standards.
- Conservation's monitoring procedures to ensure compliance by entities, municipalities and industry were not sufficient.
  - Conservation did not classify and summarize contaminated sites according to risk; and
  - Conservation did not adequately monitor all identified contaminated sites.
- Conservation's procedures for the management of landfills did not ensure compliance by landfill owners and operators with legislation.
  - Legislation did not adequately address the risks, liabilities and due diligence associated with landfills;
  - Policy and procedures to guide the management of landfills were not sufficient to ensure protection of the environment;

- The requirement to license landfills was not consistent for landfills of similar risk. Specifically, the Brady Road landfill operated by the City of Winnipeg, by far the largest landfill in the Province, was operating under a permit dated October 1993. Other landfills serving a population of over 5,000 operated under the authority of more stringent environmental licenses; and
  - Conservation's monitoring of landfills was inadequate.
- Department of Finance processes for the compilation of costs associated with remediation of contaminated sites owned by government entities were sufficient to ensure completeness of estimates of the Province's potential liability for appropriate reflection in the Public Accounts.

The Province had developed an environmental liabilities accounting policy prior to our audit. Although we found that this policy had not been communicated to Government departments and to the remainder of the GRE in a timely manner, procedures to work toward the complete and accurate reporting and disclosure of environmental liabilities in the 2005/2006 fiscal year and beyond were in place at the time we completed our fieldwork in June of 2006.

- While *The Municipal Act* required municipalities to comply with PSA standards, municipalities were not consistently reporting potential environmental liabilities associated with landfills in their financial statements. The majority of municipalities did not report and or disclose liabilities for landfill closure and post-closure costs.

## 1.0 Introduction

### 1.1 Purpose

In November of 2005 the Office of the Auditor General (OAG) released a report entitled, *Review of the Province of Manitoba's Management of Contaminated Sites*. That review was initiated in response to evolving changes to government financial reporting standards. By March 31, 2006, all provinces and Canada were required under the Public Sector Accounting Board (PSAB) of the Canadian Institute of Chartered Accountants (CICA) to report and/or disclose in its financial statements (the Public Accounts) its environmental liabilities. The review focused on the processes in place for the Province to accurately identify and, where required, estimate the cost of environmental remediation for provincially owned contaminated sites under their responsibility, that is, sites owned by provincial departments and Special Operating Agencies (SOAs). Our initial review excluded the management of contaminated sites owned and operated by Crown organizations, Government business enterprises, school divisions and municipalities.

In this report, we conducted an in-depth audit of the management of contaminated sites for those entities in the Government Reporting Entity (GRE) and in municipalities. Although municipalities are not included in the GRE, The Municipal Act of the Province of Manitoba requires them to comply with Public Sector Accounting (PSA) standards. See **Appendix C** for a listing of entities included in the GRE.

The Department of Conservation (Conservation) differentiates contaminated sites in two categories:

**Designated sites** - refers to sites 'designated' under *The Contaminated Sites Remediation Act* (CSRA), where contaminants are present at a level which pose, or may pose, a threat to human health or safety or the environment; and

**Impacted sites** - refers to sites where contaminants are present in concentrations above background levels, but which do not pose a threat to human health or safety or the environment.

Because there are many sites in the Province which pose or may pose a threat to human health or the environment that have not been "designated" under the CSRA, for the purposes of this report we refer to all sites that have been exposed to contaminants (i.e., "designated sites" or "impacted sites" as defined by Conservation) as contaminated sites.

Appendix A contains a glossary of terms and acronyms used in this report.

## 1.2 Objectives, Scope and Approach

### 1.2.1 Objectives

We identified several audit objectives for the management of environmental liabilities:

- To determine whether the processes of agencies, boards, and crown organizations, school divisions, universities, colleges and hospitals (entities)<sup>1</sup>, and municipalities for the identification of contaminated land sites and for the estimation of costs associated with remediation of these sites were sufficient to ensure appropriate accounting information was available to account for and report environmental liabilities in their financial statements. (Section 3.0)
- To determine whether the Department of Conservation (Conservation) had adequate monitoring procedures to ensure compliance by government entities, municipalities and industry with:
  - *The Contaminated Sites Remediation Act* (CSRA); and
  - The Storage and Handling of Petroleum Products and Allied Products Regulation (Petroleum Products Regulation) of *The Dangerous Goods Handling and Transportation Act* (DGHTA). (Section 4.0)
- To determine whether the Department of Conservation was adequately licensing, permitting and monitoring landfills to ensure compliance by landfill owners and operators with:
  - *The Environment Act*; and
  - The Waste Disposal Grounds Regulation (WDG Regulation) of *The Environment Act*. (Section 5.0)
- To determine whether Department of Finance (Finance) processes for the compilation of costs associated with remediation of contaminated sites owned by entities were adequate to ensure completeness of estimates of the Province's potential liability for appropriate reporting in the Public Accounts. (Section 6.0)

<sup>1</sup> Throughout this report, agencies, boards, crown organizations, school divisions, universities, colleges, regional health authorities (including hospitals) are referred to as either "entities" or "government entities".

- To determine whether the Province and the municipalities were reporting their potential environmental liabilities associated with landfills. (Section 7.0)

### 1.2.2 Scope and Survey Approach

#### Scope

Our audit was conducted between January 2006 and June 2006 and included examining records and conducting interviews with Conservation staff involved with the Contaminated Sites Program, as well as staff responsible for the management of landfills. Staff was located at Operations Headquarters in Winnipeg, as well as at various Regional Offices throughout the Province. In addition, our audit included discussions with Finance staff who were involved with the quantification of environmental liabilities for the Public Accounts.

Section 183(1) of *The Municipal Act* requires that Manitoba municipalities follow Public Sector Accounting (PSA) standards in their annual financial statements. The Department of Intergovernmental Affairs has a responsibility to communicate financial reporting requirements to municipalities. Included in the PSAB recommendations are standards for reporting environmental liabilities. Because the Department of Intergovernmental Affairs has a responsibility for monitoring this Act, our audit included municipalities.

With respect to our samples of contaminated sites and landfills, we audited compliance with certain sections of the CRSA and the WDG Regulation in force at the time of the audit.

**Contaminated Sites** - We focused our audit on the listing of contaminated sites that were included in Conservation's records which were owned or operated by 73 entities in the GRE, including 38 school divisions and 8 hospitals, as well as 199 municipalities. Of the 2,058 reported contaminated sites that were listed in Conservation's database as at December 31, 2005, 228 sites were identified to be the responsibility of entities or municipalities. From these 228 sites we selected a sample of 46, or 20%, to audit.

Our audit of environmental liabilities did not address liabilities for mines or liabilities for buildings containing asbestos.

**Landfills** - With regard to landfills, of the 287 landfills listed as active in Conservation's database as at January 23, 2006, we audited 29, or 10%. We also audited specific aspects of all 7 landfills which operate under an environmental license and all 16 inactive landfills included in Conservation's database. In addition, we identified a landfill site not included in the database, and audited specific aspects of operational authority around this site.

Our work was performed in accordance with the value-for-money auditing standards recommended by the CICA and, accordingly, included such tests and other procedures as we considered necessary in the circumstances.

### Survey Approach

To assist us in obtaining information on the management of contaminated sites and landfills and the related reporting of environmental liabilities by government entities and municipalities, we contracted with Probe Research Inc. to conduct a mail out survey. Our office selected a group of entities to be surveyed based on the nature of their operations and whether or not they had land holdings. All regional health authorities (RHAs), and in some cases specific hospitals within those RHAs, all school divisions, and all municipalities were surveyed. **Appendix B** provides a listing of the surveyed organizations. The distribution and completion of surveys is represented in **Figure 1**.

Figure 1

Record of Completion			
	Manitoba Municipalities	Government Entities	Total
Distributed	199	73	272
Completed and returned	156	65	221
Completion Rate	78%	89%	81%

## 2.0 Background

### 2.1 Responsibility for Management of Environmental Programs

#### 2.1.1 Environment Operations Branch

Until the year 2000, the former Department of Environment was responsible for the administration of all environmental programs, including those covered by the CSRA, the Petroleum Products Regulation, the DGHTA and the WDG Regulation. In 2000, the former Department of Environment and the former Department of Natural Resources were combined and renamed the Department of Conservation (Conservation).

Conservation is responsible for various environmental programs and ensuring compliance with the Acts and Regulations related to those programs through its Environment Operations Branch as highlighted in Figure 2.

Figure 2



At the time of our audit, there were a total of 68 positions throughout Conservation's 6 regions and its Headquarters Operations in Winnipeg to oversee environmental programs. Of these 68 positions, 19, or 28%, were vacant. These staff members were either directly or through oversight responsible for:

- the Contaminated Sites Program;
- the Petroleum Storage Program;
- the Dangerous Goods Program;
- the Environmental Livestock Program;
- *The Environment Act* license review and compliance;
- municipal wastewater facilities;
- onsite wastewater management systems;
- waste disposal grounds/transfer stations;
- hazardous wastes;
- pesticide container depots;
- PCB storage;
- ozone depleting substances;
- incinerators;
- land use reviews;
- emergency response; and
- response to complaints (campgrounds, burning of crop residue, litter).

## 2.1.2 Contaminated Sites Program

Environment Officers responsible for the Contaminated Sites Program are required to coordinate and conduct investigations of reported sites, as well as monitor and enforce compliance with legislation and department policy for contaminated sites. As part of this process, they are required to interpret scientific data and prepare technical reports pertaining to environmental assessments. Because this is a highly specialized field, technical expertise is required. Some of the more experienced Environment Officers involved with the Contaminated Sites Program are also called upon to assist in the development of policy and programs related to contaminated sites.

Twelve Environment Officers worked with the Contaminated Sites Program - 2 in Headquarters Operations and 10 in the Regional Offices. At the time we concluded our fieldwork for this audit, one position in Headquarters Operations and two positions in Regional Offices were vacant. With the exception of one regional position which was designated as a full-time Contaminated Sites Program position, vacant at the time of our audit, Environment Officers in Regional Offices were responsible for the Contaminated Sites Program as well as some of the other programs described in Section 2.1.1.

The Contaminated Sites Program is governed by *The Contaminated Sites Remediation Act* (CSRA) which was proclaimed May 15, 1997. This program is also governed by the Storage and Handling of Petroleum Products and Allied Products Regulation (Petroleum Products Regulation) of *The Dangerous Goods Handling and Transportation Act* (DGHTA). The Petroleum Products Regulation deals with issues related to fuel storage tanks.

Section 1(1) of the CSRA states this purpose:

*"To provide for the remediation of contaminated sites, in accordance with the principles of sustainable development, in order to reduce or mitigate the risks of further damage to human health or the environment and, where practicable, to restore such sites to useful purposes, and to this end to provide*

*(a) a system for identifying and registering contaminated sites in Manitoba;*

*(b) a system for determining appropriate remedial measures, if any, to be undertaken in relation to specific contaminated sites and identifying the persons responsible for implementing or contributing to the implementation of those measures; and*

*(c) a fair and efficient process for apportioning responsibility for the remediation of contaminated sites."*

A contaminant is described in the CSRA as *"any product, substance or organism that is foreign to or in excess of the natural constituents of the environment at the site"*.

Conservation's 2005/2006 Annual Report provided these details related to contaminated sites:

### Contaminated/Impacted Sites

- 2,088 sites in Manitoba Sites Database, seven of which Conservation had designated as contaminated under the CSRA.

### Petroleum Storage Program

- 4,830 petroleum storage sites that were or had been previously registered in Manitoba;
- 2,273 sites were active;
  - 1,588 sites had a permit to operate (required as of April 1, 2006);
  - 685 sites had not applied for a permit, were not regulated under provincial jurisdiction, or were listed as inactive;
- 236 sites were listed as inactive; and
- 2,321 sites had been successfully decommissioned since 1976.

### 2.1.3 Waste Disposal Grounds (Landfills)

Conservation's Environment Operations Branch is also responsible for the management of waste disposal grounds (landfills) in the Province under the Waste Disposal Grounds Regulation (WDG Regulation) which was enacted in July 1991. The WDG Regulation outlines provisions for landfills for the disposal of all garbage, solid waste, liquid waste, bulky metallic waste and industrial waste created within its jurisdiction.

The WDG Regulation groups landfills by the population served by the facilities at the time they were established:

- Class 1 facilities are those that originally served a population of more than 5,000.
- Class 2 facilities served a population of more than 1,000 but less than or equal to 5,000 at the time of establishment.
- Class 3 facilities served a population of 1,000 or less.

Figure 3 highlights the statistics for active (in use) landfills in 1995 as reported in Conservation's 1997 State of the Environment Report.

Figure 3

Active Waste Disposal Grounds Under Permit (1995)				
	Class 1 (pop:>5,000)	Class 2 (pop: 1,000-5,000)	Class 3 (pop:<1,000)	Total
Active waste disposal grounds	13	81	267	361
Sites closed	2	17	33	52
Population served	754,984	171,961	156,311	1,083,256*

Source: Manitoba Environment

\* Population figures are approximations only and are based on the 1991 census.

Active municipal waste disposal sites have decreased by almost 18% since 1991, down from 439 active sites. Fifty-two sites were either closed or upgraded in 1995.

When issuing licenses and permits for landfills, conditions may be imposed on landfill owners related to the operation of the landfill as well as specific conditions to be adhered to at the time of closure of the landfill. For example, a Class 1 facility may be required to sample, monitor, analyze and/or investigate specific areas of concern, submit a Closure Plan for approval, develop a monitoring program, etc. Class 2 or 3 landfills may be required to conduct contaminant studies during the operation or upon closure of a site. Another condition may be that sites be upgraded for the purpose of groundwater protection at the request of the Director. Environment Officers throughout the Province are responsible for monitoring compliance with the WDG Regulation.

## 2.2 Financial Reporting of Environmental Liabilities

The Public Sector Accounting Board (PSAB) issues recommendations and guidance with respect to matters of accounting in the public sector. As explained in the PSAB Handbook, 'public sector' refers to "federal, provincial, territorial and local governments, government organizations, government partnerships, and school boards". In Manitoba, this includes all government entities, as well as municipalities.

In September 2004, an updated recommendation for the recognition of liabilities in financial statements was added to the PSAB Handbook. Under Section PS 3200 it states:

*"03 Liabilities should be recognized in the financial statements when:*

- (a) there is an appropriate basis of measurement; and*
  - (b) a reasonable estimate can be made of the amount involved.*
- [SEPT.2004]*

*.30 Information about the nature of liabilities that cannot be recognized should be disclosed in notes together with the reason(s) why a reasonable estimate cannot be made of the amount involved. [SEPT.2004]"*

In addition, Section PS 3270 of the PSAB Handbook states the following for landfills:

*“.12 Under environmental law, there is a liability for closure and post-closure care. It is not sufficient to disclose the closure and post-closure care liability as a contingency or a contractual obligation as the existence of the liability is known with certainty.*

*.13 Financial statements should recognize a liability for closure and post-closure care as the landfill site's capacity is used. Usage should be measured on a volumetric basis (e.g., cubic metres). [FEB.1998]*

*.14 The liability for closure and post-closure care begins when the site starts accepting waste. Normally, it would be recognized over the operations of the site, beginning when the site first accepts waste and be fully recognized when the site stops accepting waste. If the site is operated on a phase basis, the closure and post-closure liability associated with that phase would be fully recognized when the phase stops accepting waste."*

In the Province of Manitoba, the Department of Finance is responsible for the Province's financial reporting, including the disclosure of environmental liabilities. The Finance Minister's message in Volume 1 of the 2005/2006 Public Accounts stated, *"We continue our work toward Summary Budgeting and Reporting, which includes meeting PSAB standards"*.

As such, the Province should report environmental liabilities for the GRE in its consolidated Summary Financial Statements. See **Appendix C** for a detailed listing of the GRE as at March 31, 2006.

### 3.0 Oversight and Financial Reporting of Contaminated Sites by Entities and Municipalities

Objective and Criteria	Conclusions
<p><b>Our objective was:</b></p> <p>To determine whether the processes of government entities and municipalities for identification of contaminated land sites and for the estimation of costs associated with remediation of these sites were sufficient to ensure appropriate accounting information was available to account for and report environmental liabilities in their financial statements.</p> <p><b>The audit criteria established for this objective were:</b></p> <p><b>Section 3.1</b></p> <p>Responsibility for the management of contaminated sites should be clearly assigned to qualified and appropriately trained staff.</p> <p><b>Section 3.2</b></p> <p>Policies and procedures should be in place to guide the management of contaminated sites.</p>	<p>Policies to identify contaminated sites among government entities and municipalities and to estimate associated remediation costs were not sufficient.</p> <p><b>Assignment of responsibility needed</b></p> <p>Responsibility for the management of contaminated sites was not assigned for the majority of entities and municipalities. (Section 3.1.1)</p> <p><b>Policies and procedures needed</b></p> <p>Policies and procedures were not in place to guide the management of contaminated sites for the majority of entities and municipalities that had contaminated sites. (Section 3.2.1)</p>

Objective and Criteria	Conclusions
<p><b>Section 3.3</b> Entities and municipalities should adequately assess properties to identify contaminated sites.</p>	<p><b>Improved assessment of properties and reporting of contaminated sites needed</b> Some entities and municipalities had assessed their properties to identify contaminated sites and the extent of the contamination. Improvement was needed to ensure all properties were evaluated. (Section 3.3.1) Also, the reporting of contaminated sites to Conservation was not consistent among entities and municipalities. (Section 3.3.2)</p>
<p><b>Section 3.4</b> Approved Remedial Action Plans (RAPs) and strategies to address remediation should be in place.</p>	<p><b>Development and submission of remediation action plans needed</b> Remediation plans were not being developed by most entities and municipalities with Class 1 or Class 2 contaminated sites. (Section 3.4.1) Also, RAPs were not being submitted to Conservation for approval on a consistent basis. Conservation was not kept apprised of the status of contaminated sites. (Section 3.4.2)</p>
<p><b>Section 3.5</b> Entities and municipalities should adequately monitor contaminated sites and at-risk properties.</p>	<p><b>Monitoring practices need improvement</b> Not all entities and municipalities were not monitoring contaminated sites and at-risk properties sufficiently. (Section 3.5.1)</p>
<p><b>Section 3.6</b> A complete database of properties should be maintained.</p>	<p><b>Tracking of contaminated properties needed</b> Contaminated sites were not sufficiently tracked in a database by the majority of entities and municipalities. (Section 3.6.1)</p>
<p><b>Section 3.7</b> Liabilities should be recognized and/or appropriately disclosed in Financial Statements.</p>	<p><b>Adherence to PSA standards required</b> The majority of entities and municipalities with contaminated sites were not preparing financial statements in harmony with PSA standards for reporting environmental liabilities. Appropriate information was not used to develop cost estimates (Section 3.7.1) and financial reporting and disclosure was not appropriate. (Section 3.7.2)</p>

### 3.1 Assignment of Responsibility Needed

#### Audit Criterion

Responsibility for the management of contaminated sites should be clearly assigned to qualified and appropriately trained staff.

Entities with sites that have been exposed to contaminants should have specific personnel identified to address contaminated sites issues and be responsible for:

- identification and risk assessment of contaminated sites;
- development of remediation plans;
- monitoring of contaminated sites;
- database management; and
- quantification of environmental liabilities for financial reporting.

#### 3.1.1 Staff Were Not Assigned to Manage Contaminated Sites

In our survey of various government entities as described in Section 1.2.2 of this report and of municipalities, we asked whether or not they used, leased or owned any land, buildings, or worksites that had been exposed to contaminants. Of the 63 entities that responded to this question, 32 or 51% replied that they did. As for municipalities, of the 147 that responded, 62 or 42% replied that they did as well.

For entities that reported having properties that had been exposed to contamination, only 15 or 47% of the 32 entities had specific personnel assigned to keep track of contaminated sites related data. As for the municipalities, only 4 of the 61, or 7%, with contaminated sites indicated that they had personnel assigned to handle these responsibilities. Overall, with the responses of the entities and the municipalities combined, only 20% met our expectation that specific personnel be assigned to keep track of contaminated sites related data.

**We recommend that all entities and municipalities with contaminated sites assign personnel to be responsible for addressing contaminated sites issues.**

**We recommend that the following responsibilities be assigned within entities and municipalities:**

- identification and risk assessment of contaminated sites;
- development of remediation plans;

- monitoring of contaminated sites;
- database management; and
- quantification of environmental liabilities for financial reporting.

## 3.2 Policies and Procedures Needed

### Audit Criterion

To guide staff in the management of contaminated sites, all entities and municipalities that have properties that have been exposed to contaminants should have well documented policies and procedures. These procedures should encompass these key areas:

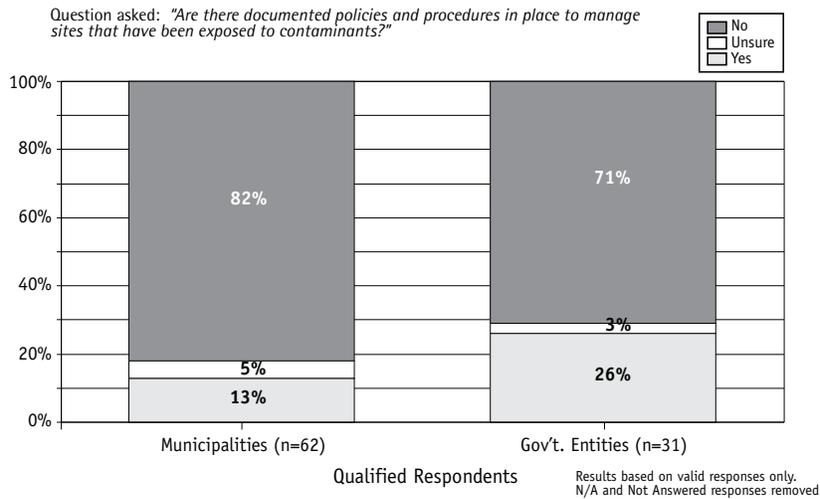
- identification and risk assessment of contaminated sites;
- development of remediation plans;
- monitoring of contaminated sites;
- database management; and
- financial reporting.

While only those with properties known to have been contaminated would be expected to have policies for the first four areas listed above, all entities and municipalities should have an environmental liabilities accounting policy.

### 3.2.1 Policies and Procedures for the Management of Contaminated Sites Were Not in Place within Entities and Municipalities

Figure 4 highlights that the majority of those surveyed that reported having contaminated sites did not have documented policies and procedures.

Figure 4

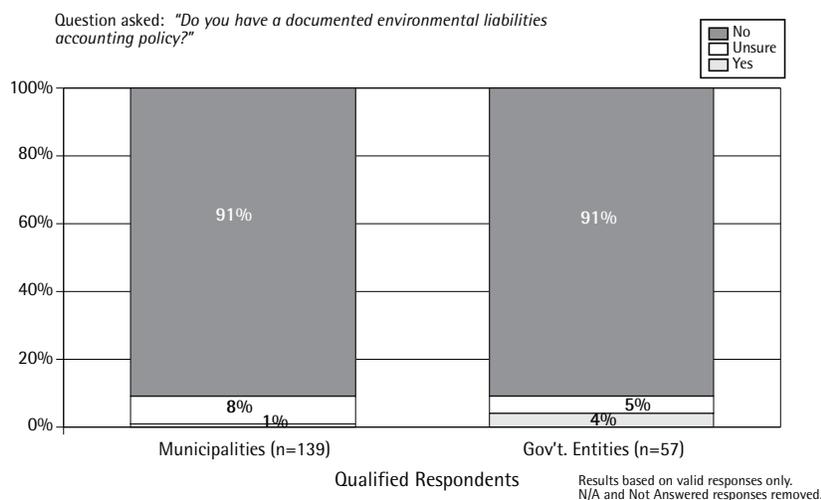


Source: Office of the Auditor General of Manitoba Environmental Liabilities Survey, 2006.

We surveyed entities and municipalities on whether they had an overall remediation strategy that considers all site assessments. Of the entities that reported having contaminated sites, we found that 23 of 31, or 74%, did not have an overall remediation strategy. Of the municipalities that reported having contaminated sites, 51 of 59, or 86%, of the municipalities did not have an overall remediation strategy. The combined results for the two groups that responded to this question indicated that 82% did not have a documented overall remediation strategy.

Overall of 139 municipalities and 57 government entities (including those who did not report having contaminated sites), 91% reported having no environmental liabilities accounting policy. The results are illustrated in Figure 5.

Figure 5



Source: Office of the Auditor General of Manitoba Environmental Liabilities Survey, 2006.

When we examined the responses from those that reported having contaminated sites only 7 of 29, or 24%, of the entities reported having an environmental liabilities accounting policy. As well, only 17 of 58, or 29%, of the municipalities reported having an environmental liabilities accounting policy.

We recommend that government entities and municipalities that have had experience with property contamination develop and implement a documented strategy for the management of contaminated sites.

We recommend that all entities and municipalities develop and implement a documented environmental liabilities accounting policy.

### 3.3 Improved Assessment of Properties and Reporting of Contaminated Sites Needed

#### Audit Criterion

Entities and municipalities should adequately assess properties to identify contaminated sites. All sites that have been exposed to contamination should be evaluated, classified and prioritized according to risk or potential risk to human health. When contamination is identified, it should be reported to Conservation.

### 3.3.1 Some Contaminated Sites Were Not Evaluated and Classified

To determine the approximate number of contaminated sites that exist among the entities and municipalities surveyed and the degree of contamination involved, we described the classifications included in the National Classification System (NCS) endorsed by the Canadian Council of Ministers of the Environment (CCME) (NCS is further described in Section 4.1.2) and asked the survey respondents to indicate how many sites they had fitting each description. Following are the options presented in the survey and the corresponding NCS classification:

- Class 1 - An environmental site assessment has indicated that **action is required** to address existing concerns for public health and safety;
- Class 2 - An environmental site assessment has indicated that **action is likely required** to address existing concerns for public health and;
- Class 3 - An assessment has indicated that the site is not a high concern but **action may be required**;
- Class N - An assessment indicated that there is probably no significant environmental impact nor any human health threats, and **there is likely no remedial action required**; and
- Class I - An assessment has been performed but **there is insufficient information to classify the site**.

Figure 6 summarizes the number of contaminated sites as reported in the survey responses.

Figure 6

Number of Contaminated Sites			
	Government Entities	Municipalities	Total
Class 1	73	5	78
Class 2	10	9	19
Class 3	23	14	37
Class N	31	41	72
Class I	-	1	1
Total	137	70	207

Source: Office of the Auditor General of Manitoba Environmental Liabilities Survey, 2006.

Only 74% of the entities that reported having contaminated sites and 39% of the municipalities with contaminated sites, maintain a complete listing of their contaminated sites. Therefore, we know that the numbers in Figure 6 represent the minimum number of contaminated sites among these entities and

municipalities. Some reported maintaining a partial list of their contaminated sites. We found that 6 of 31, or 19%, of the entities, and 33 of 59, or 56%, of the municipalities with contaminated sites do not maintain any listing of sites.

In our survey, we asked entities and municipalities if they had performed site assessments for their contaminated sites. Again the response was disappointing. Nine of 31, or 29%, of the entities and 23 of 61, or 38%, of the municipalities reported that they have not done site assessments on any of their contaminated sites. When asked why they have not conducted site assessments, the most common reasons cited, were:

- Unaware they had to do assessments (69% of the respondents);
- No human resources to conduct assessments (58% of the respondents); and
- Assessment of sites is not a priority (21% of the respondents).

**We recommend that all entities and municipalities with properties that have been exposed to contaminants maintain a complete list of these sites.**

**We recommend that Environmental Site Assessments be conducted by qualified professionals on all properties that have been exposed to contaminants.**

**We recommend that priorities for remediation be established based on Environmental Site Assessments.**

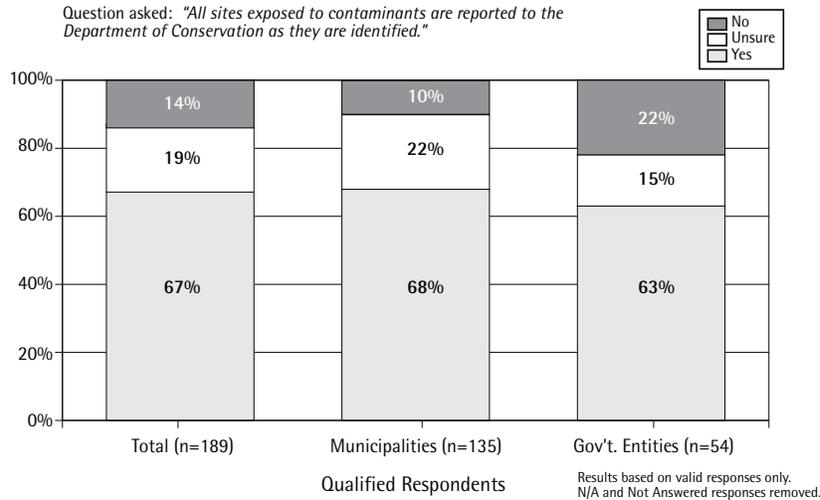
### 3.3.2 Contaminated Sites Were Not Consistently Reported to Conservation

One of the functions of Conservation's Contaminated Sites Program is the monitoring of environmental damage caused by contaminants to ensure that human health and safety and the environment are not negatively affected. As per Section 28 of the DGHTA, contamination of soil is required to be reported to Conservation when it occurs, or immediately after the occurrence of the environmental accident.

In our survey, we asked respondents to indicate whether or not they report all sites exposed to contaminants to Conservation as they are identified. It was clear from the answers that entities and municipalities do not feel obligated, either morally or legally, to report contaminated sites to Conservation. Of those that reported having contaminated sites, only 69% indicated that all sites exposed to contaminants are reported to Conservation as they are identified.

Response rates were similar for all respondents, whether they had contaminated sites or not. **Figure 7** summarizes the answers of all those who responded to our survey.

Figure 7



Source: Office of the Auditor General of Manitoba Environmental Liabilities Survey, 2006.

The fact that 19% of the respondents were unsure as to whether or not all sites exposed to contaminants are reported to Conservation as they are identified is further evidence that policies related to contaminated sites among entities and municipalities are lacking.

We recommend that all entities and municipalities develop a protocol that will ensure that all sites that have been exposed to contaminants be reported to Conservation as they are identified.

### 3.4 Development and Submission of Remedial Action Plans Needed

#### Audit Criterion

Approved Remedial Action Plans (RAPs) and strategies to address remediation should be in place. Based on Environmental Site Assessments (ESAs), remediation plans should be developed for contaminated sites when warranted and remediation priorities should be established. The timing of planned remediation should address the degree of contamination involved.

ESAs and RAPs should be forwarded to Conservation for review and approval.

### 3.4.1 Remedial Action Plans and Strategies Were Not in Place

At a minimum, remediation plans should be in place for all Class 1 and Class 2 contaminated sites because these sites either pose or are likely to pose a threat to human health and safety and or to the environment. The intention to remediate contaminated sites can be gauged by the existence of remediation plans (RAPs).

When entities and municipalities were asked if they had developed individual remediation plans for sites that pose or may pose a threat to the environment, survey results indicated that remediation plans had not been developed for all of these sites. Only 5 of the 12 municipalities, or 42%, and 4 of the 10 entities, or 40%, that reported having sites that meet the definition of either Class 1 or Class 2 sites also reported having remediation plans developed for those sites.

Survey respondents reported to us that they have a total of 56 contaminated sites which require remediation. Twenty-six of these sites are owned by government entities, and 30 sites are owned by municipalities. Of these sites, RAPs have been developed for only 21 of 56, or 38%. The existence of remediation plans among municipalities was much lower than that of government entities (7% for municipalities, and 73% for entities).

We recommend that remediation plans be developed for all sites that meet the NCS criteria for Class 1 or Class 2 sites.

We recommend that entities and municipalities establish a remediation strategy that focuses on remediating sites based on risk.

We recommend that all Class 1 and Class 2 sites be remediated as funding permits.

### 3.4.2 Entities and Municipalities Did Not Provide Conservation with the Status of Environmental Site Assessments (ESAs) and Remedial Action Plans (RAPs) on a Consistent Basis

In addition to the monitoring of sites, another function of Conservation's Contaminated Sites Program is the review and approval of ESAs and RAPs. Conservation's Information Bulletin 96-02E *Contaminated Sites in Manitoba – Submission of Remedial Action Plans* states:

*"In order to ensure that remediation projects are implemented effectively, a Remedial Action Plan (RAP) must be developed in advance. Because of the mandate of Manitoba Conservation, it is important that the department be consulted during the RAP development phase..."*

*A detailed written RAP proposal is to be forwarded to Manitoba Conservation for review prior to the onset of any site remedial work. Prior to reviewing any RAP design/proposal, Manitoba Conservation will require submission of a comprehensive report detailing the nature, degree of severity, and extent (areal and vertical) of site contamination. Along with information on the RAP design...this investigation phase information/data will be assessed in determining and approving appropriate site remedial actions...*

*Upon receipt of a RAP proposal, Manitoba Conservation will review the material to ensure that an appropriate site assessment has been conducted with provincial guidelines and policies....*

*After any deficiencies have been addressed and it is determined that the RAP proposal is acceptable to Manitoba Conservation, a written confirmation will be submitted to the proponent."*

The review of these technical documents by Conservation can serve multiple purposes. For one thing, Conservation's independent review can provide assurance that the environment is not compromised and that the recommended course of action meets the minimum provincial standards for soil restoration. Such a review can also protect those responsible for contaminated sites from spending resources unnecessarily on actions that may exceed what is required by the Province to restore the property to an acceptable state.

Entities and municipalities surveyed were asked if they submit regular progress reports related to their management of contaminated or potentially contaminated sites to Conservation. Overall, only 22 of 84 respondents or 26% said that they follow this practice.

Also, organizations run the risk of spending resources unnecessarily if Conservation is not afforded the opportunity to review ESAs and RAPs. If this information is not reviewed and approved by Conservation, the remediation action outlined in these documents may not meet provincial standards or, at the other extreme, may be more than is required to meet provincial standards.

**We recommend that entities and municipalities inform Conservation of new developments related to contaminated sites and that all ESAs and RAPs for these sites be submitted to Conservation for review. Remediation plans should be approved by Conservation prior to implementation.**

### 3.5 Monitoring Practices Need Improvement

#### Audit Criterion

Entities and municipalities should adequately monitor contaminated sites and at-risk properties. All properties should be assessed regularly for changes in status to ensure that no further damage to the environment is occurring.

#### 3.5.1 Although "At-Risk" Sites Were Assessed Annually, Other Contaminated Properties Were Not Regularly Assessed

While it is possible for contamination to remain unchanged over the course of time, some sites experience further contamination as the source of contamination moves through underground pathways. All properties that have been exposed to contaminants should be assessed regularly. Contaminated sites that have been identified as posing a high risk to human health and safety, also referred to as "at-risk" sites, should undergo increased scrutiny. Assessment or re-assessment of these properties, if not remediated, should be done at least annually.

To determine whether or not entities and municipalities were reviewing their contaminated sites on a regular basis in the interest of preventing further contamination, we surveyed to determine when their most recent site assessments had been performed. Of those who indicated that all of their sites had been assessed, we found that only 52% of those assessments were done either within the last 2 fiscal years (ending March 31, 2005 and March 31, 2006), or were ongoing.

We asked our survey recipients if their "at-risk" sites were assessed at least once per year. Of the 10 entities and 12 municipalities who reported having "at-risk" sites that meet the description of Class 1 and Class 2 sites, all of them indicated that their "at-risk" sites are assessed annually.

**We recommend that all properties be assessed on a regular basis for changes in status.**

### 3.6 Tracking of Contaminated Properties Needed

#### Audit Criterion

A complete database of properties should be maintained. The information stored in a database should include site classification, remediation plan data, remediation cost estimates, remediation related activities and site monitoring activities. The database should be updated as changes to sites occur.

#### 3.6.1 Contaminated Sites Information Was Not Tracked in a Database

We acknowledge that the sophistication of the databases will vary among organizations, depending on the number of sites involved and the extent of contamination. However the existence of a database can facilitate the management of an inventory of all contaminated sites related data.

Thirty-two of the government entities and 62 of the municipalities surveyed reported that they have contaminated sites. It would logically follow that these entities and municipalities would have an electronic database in which to store this information.

When asked in our survey "Does your organization have an electronic database management system for storing information on contaminated and potentially contaminated sites?", of those who reported having contaminated sites, less than 10%, said they had such a database. A summary of the responses is shown in Figure 8.

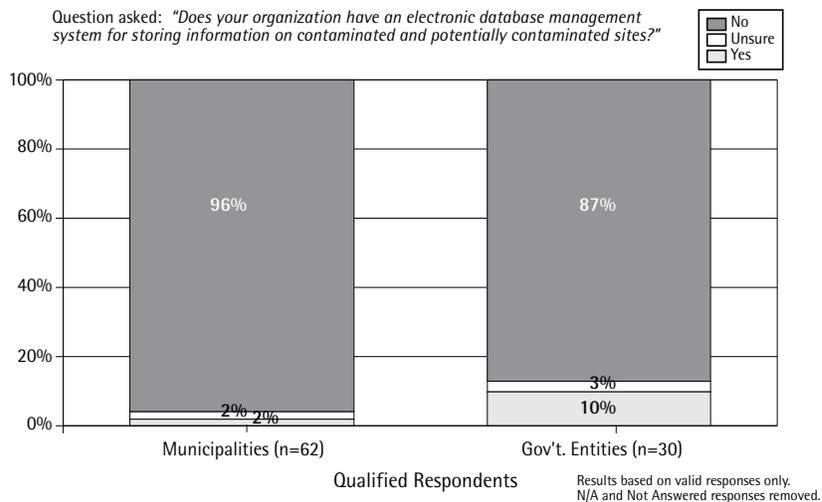


Figure 8

Source: Office of the Auditor General of Manitoba Environmental Liabilities Survey, 2006.

We recommend that all entities and municipalities with properties that have been exposed to contaminants maintain a database of their properties to track those sites. The database could include:

- site classification;
- remediation plan data;
- remediation cost estimates;
- remediation related activities; and
- site monitoring activities.

We recommend that the database be updated as changes to sites occur.

### 3.7 Adherence to Public Sector Accounting Standards Required

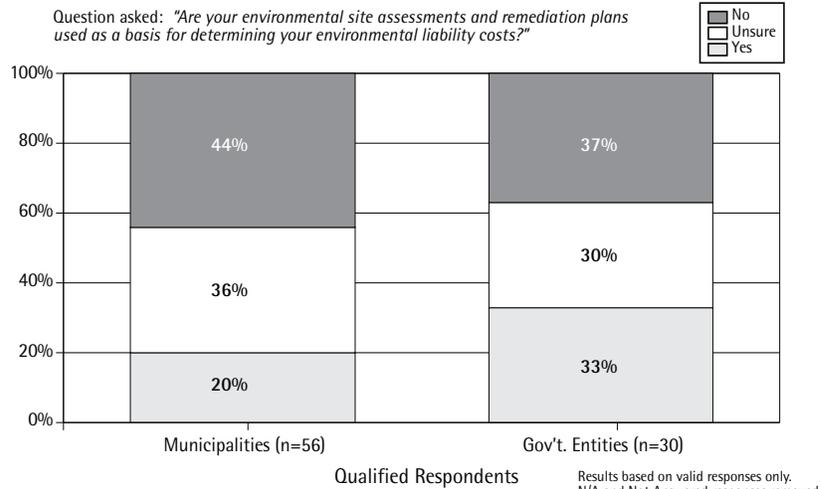
#### Audit Criterion

Liabilities should be recognized and/or appropriately disclosed in Financial Statements. ESAs and RAPs should be used to estimate liabilities.

#### 3.7.1 ESAs and RAPs Were Not Used to Quantify Liabilities

We surveyed entities and municipalities on their use of ESAs and RAPs as a basis for determining liabilities. We found that few were able to respond to this question affirmatively. Overall, use of these technical reports to establish cost estimates for environmental liabilities was limited to 21 of 86, or 24% of respondents who reported having contaminated sites. Only 10 of 30, or 33% of the entities and 11 of 56, or 20% of the municipalities with contaminated sites reported using these documents for the development of environmental liability estimates. The results are illustrated in **Figure 9**.

Figure 9



Source: Office of the Auditor General of Manitoba Environmental Liabilities Survey, 2006.

To meet PSA standards for the reporting of environmental liabilities, sound estimates are required for remediation costs. Estimation of the costs of remediation without the use of ESAs and RAPs may affect the accuracy and completeness of estimates for remediation costs.

**We recommend that ESAs and RAPs be used as a basis for determining cost estimates for environmental liabilities.**

### 3.7.2 Financial Reporting of Environmental Liabilities Was Incomplete

When accurate estimates can be made, environmental liabilities should be accrued in financial statements according to PSA standards. When a reasonable estimate cannot be made, a liability should be disclosed in the notes to financial statements and the disclosure should indicate the reason why a reasonable estimate cannot be made for the liability.

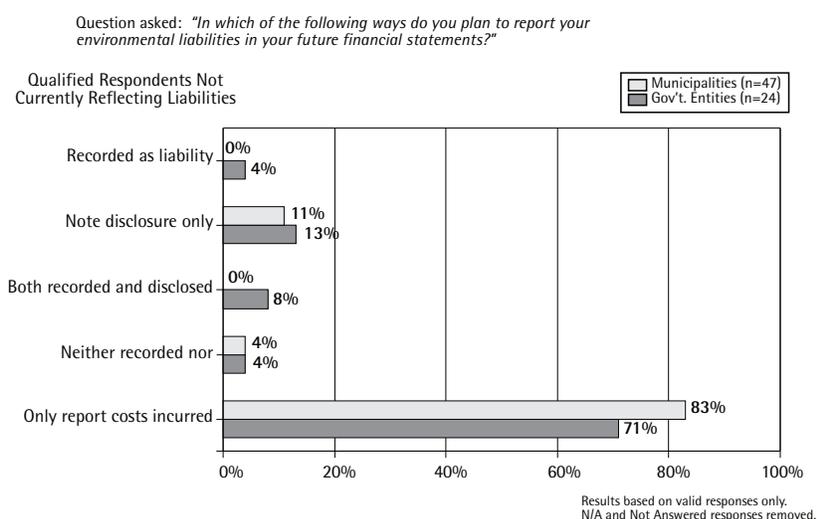
Contaminated sites that show a propensity to high concern for several human health and environmental factors and that require action to address those concerns, as well as those with a high potential for off-site impacts (Class 1 and Class 2 sites), are considered environmental liabilities. These liabilities should be reported in financial statements.

Ten entities and 12 municipalities indicated ownership of sites that fit the Class 1 and/or Class 2 descriptions. Fifty-nine percent of those with contaminated sites that pose a threat to the environment were not complying with PSA standards in their financial reporting. When we considered only the entities, 70% of those with reportable environmental liabilities were not complying with PSA standards. Only

4 of the 22 respondents or 18% report environmental liabilities in their financial statements.

Of those who have contaminated sites that do not report environmental liabilities in their financial statements, 56 of 71 or 79% indicated that they only record remediation costs as they are incurred. See Figure 10 for a summary of the responses.

Figure 10



Source: Office of the Auditor General of Manitoba Environmental Liabilities Survey, 2006.

The practice of recording remediation costs only as they are incurred is not aligned with PSA standards unless the contamination and remediation take place in the same fiscal year.

**We recommend that all entities and municipalities follow PSA standards for reporting and disclosing contaminated sites in their financial statements.**

## 4.0 Department of Conservation's Oversight of Contaminated Sites

Objective and Criteria	Conclusions
<p><b>Our objective was:</b> To determine whether the Department of Conservation had adequate monitoring procedures to ensure compliance by government entities, municipalities and industry with:</p> <ul style="list-style-type: none"> <li>• The Contaminated Sites Remediation Act</li> <li>• The Storage and Handling of Petroleum Products and Allied Products Regulation of The Dangerous Goods Handling and Transportation Act.</li> </ul> <p><b>The audit criteria established for this objective were:</b></p> <p><b>Section 4.1</b> Policy and procedures should be in place to guide the management of contaminated sites.</p> <p><b>Section 4.2</b> Conservation should ensure the existence of adequate remediation plans for sites that are being tracked for contamination.</p>	<p>Conservation's monitoring procedures to ensure compliance by government entities, municipalities and industry were not adequate.</p> <p><b>Policy and procedures to guide program management need improvement</b></p> <p>Although Conservation had policy and procedures in place to guide its staff in the management of contaminated sites, its policy was inadequate and ineffective. The policy in place had not been approved. (Section 4.1.1)</p> <p>Areas lacking policy included:</p> <ul style="list-style-type: none"> <li>• Classification of sites (Section 4.1.2)</li> <li>• Database management (Section 4.1.3)</li> <li>• Communication strategy (Section 4.1.4)</li> </ul> <p>Also, The Contaminated Sites Remediation Act did not address the monitoring of all contaminated sites. (Section 4.1.5)</p> <p><b>Need to ensure RAPs are developed and approved</b></p> <p>Conservation did not ensure the existence of adequate remediation plans for sites that are being tracked for contamination. They did not always establish responsibility for remediation (Section 4.2.1) and they were not consistent in their handling of RAPs. (Section 4.2.2).</p>

Objective and Criteria	Conclusions
<p><b>Section 4.3</b> Conservation should monitor all identified contaminated sites.</p>	<p><b>Monitoring of contaminated sites needs improvement</b> Conservation did not adequately monitor all identified contaminated sites. Weaknesses were noted in these areas:</p> <ul style="list-style-type: none"> <li>• Response to technical reports was not always timely (Section 4.3.1);</li> <li>• Conservation did not ensure that all sites requiring remediation were appropriately remediated (Section 4.3.2);</li> <li>• Missing documentation was not always followed-up (Section 4.3.3); and</li> <li>• Information updates were not always reviews, analyzed and followed-up (Section 4.3.4)</li> </ul>
<p><b>Section 4.4</b> Conservation should maintain a complete and accurate database of contaminated sites.</p>	<p><b>Database maintenance needs improvement</b> Conservation did not maintain a complete and accurate database of contaminated sites. (Section 4.4.1; Section 4.4.2; Section 4.4.3; Section 4.4.4; Section 4.4.5)</p>
<p><b>Section 4.5</b> Conservation should have a comprehensive communication strategy to make entities and industry aware of their obligations with regard to the identification and reporting of potentially contaminated sites.</p>	<p><b>Communication strategy needed</b> Conservation's communication strategy for the identification and reporting of contaminated sites was not adequate. (Section 4.5.1)</p>

## 4.1 Policy and Procedures to Guide Program Management Need Improvement

### Audit Criterion

Policy and procedures should be in place to guide the management of contaminated sites. Approved policy and procedures for the Contaminated Sites Program should be clearly documented.

Policy and procedures to manage contaminated sites should address:

- the classification and summarization of contaminated sites according to risk. All risk assessments should be conducted based on the priorities indicated by the classification;
- the tracking of all data related to contaminated sites; and
- the provision of adequate program information to all stakeholders.

### 4.1.1 Policy for Contaminated Sites Program Was Not Approved

The Contaminated Sites Program is governed by *The Contaminated Sites Remediation Act* (CSRA). From this Act many guidelines have been developed and documented in information bulletins. In addition to this documentation, the Contaminated Sites Program has a *Standard Operating Procedures* document. This document was originally prepared in November 1999.

A revised *Contaminated/Impacted Sites Program Standard Operating Procedure* had been drafted. At the time of our audit, the draft dated January 13, 2005 had not been approved. The original *Standard Operating Procedures* document focused on the "designation" of sites as contaminated. A designated site was described in the document as one for which "a site investigation or other specific evidence has confirmed the presence of contaminants at a level that poses or may pose a threat to human health or safety or to the environment". The revised draft of the document further described designated sites saying, "and there is no intention on the part of the responsible parties to submit and implement a remedial action plan".

The revised draft provided more information on what to do for sites where contaminants were present in concentrations above the most stringent Canadian Council of Ministers of the Environment (CCME) criteria but which, according to

Conservation, did not pose a threat to human health or safety or the environment. Conservation referred to these sites as "impacted". The revised document expanded on what was included in the 1999 version.

According to the program coordinator, the draft operational guidelines were in use at the time of our audit. Approval was not expected in the near future but the coordinator indicated that Environment Officers were supposed to use them. However, when we spoke to regional staff their understanding was that they were not to use the draft document until it had been approved. Therefore, regional staff were operating under the 1999 version of the *Standard Operating Procedures*.

The confusion we observed among program staff as to which document to follow indicated a severe communication problem within Conservation.

**We recommend that Conservation focus on completing their review of the *Standard Operating Procedures* and formally approve a revised document for use as soon as possible. Until the document has been approved, it cannot be considered the official document for use by program staff.**

***Response from Officials***

*Staff have now been directed to use the 1999 Standard Operating Procedures until it is replaced with an approved revised document. The department shall review procedures and guidelines and issue an approved revised document.*

**We recommend that Conservation improve communication with regional program staff to ensure all understand the procedures to be followed.**

***Response from Officials***

*Communication with regional program staff is being improved through the enhancement of existing communication mechanisms such as the T-Drive (shared files on internal server), the Contaminated/Impacted Sites Working Group, and the Regional Supervisors Committee.*

#### 4.1.2 Policies Did Not Include Classification of Sites

The CCME is comprised of Environment Ministers from the federal, provincial and territorial governments. The CCME website (<http://www.ccme.ca>) explains its role in this way:

*"CCME works to promote effective intergovernmental priorities and determine work to be carried out under the auspices of CCME. .... CCME members collectively establish nationally-consistent environmental standards, strategies and objectives so as to achieve a high level of environmental quality across the country. Ministers retain their individual authority and jurisdiction as members of CCME, while working together helps them to deliver their own mandate."*

The first part of our audit of the Province's Management of Contaminated Sites was released in a report dated November 2005. That report covered a review of provincially owned and leased sites – sites for which government departments were responsible. During that audit, information received from Conservation indicated that CCME guidelines were used, as well as CCME's National Classification System. As mentioned previously, Conservation's *Standard Operating Procedures* referenced the use of this classification system.

The use of the National Classification System, a system developed in conjunction with other governments, is the most appropriate classification system available for use by the Province of Manitoba. The use of this system should be mandatory when assessing provincially owned sites that have been exposed to contaminants in order to estimate environmental liabilities for the Public Accounts, as well as to establish remediation priorities.

Finance's guidelines for departments which were distributed with its Environmental Liabilities Accounting Policy included this guidance, *"Perform a risk assessment to determine if remediation will be required due to an immediate public safety or legal requirement or to address environmental damage using recognized standards such as the Canadian Council of Ministers for the Environment National Classification System"*. Clearly the use of classifications is essential in evaluating environmental liabilities.

During our audit, we became aware of the fact that the National Classification System (NCS) was not being used.

The NCS used an additive numerical method that assigned scores to a number of site characteristics or factors. Site characteristics were grouped under one of three categories:

- Contaminant Characteristics (the relative hazard of contaminants present at a site);

- Exposure Pathways (the route a contaminant may follow – e.g., groundwater, surface water, direct contact and/or air - to a receptor); and
- Receptors (living beings or resources that may be exposed to and affected by contamination – e.g., humans, plants, animals, or environmental resources).

As new site information becomes available or as steps toward site remediation are taken, individual contaminated sites can be reevaluated using the NCS.

The CCME issued a draft revision of the document for comment before June 2006 which expanded on the concepts introduced in their 1992 version. Other industry variations of a classification system were also available for use in classifying contaminated sites.

We expected that the use of a classification system would be the foundation of Conservation's Contaminated Sites Program. Use of a classification system is of value in categorizing and then prioritizing sites. Conservation should have a record of site classifications for all contaminated sites. When classification information is not provided by those responsible for contamination, it should be requested.

Once classifications are known, we expected that Conservation would establish program priorities and guide those responsible for contaminated sites in establishing remediation priorities. The next logical step in managing the Contaminated Sites Program should be the assessment of risk based on those classifications to determine the course of action required.

At the outset of our audit, we were informed by Conservation staff that manage and coordinate the Contaminated Sites Program that risk assessments were performed by Conservation but they did not use the CCME National Classification System for an initial classification of sites; neither did they promote it as a tool to use. They considered the NCS one of many tools available, but not one that was suitable for their use because they did not need it. Site classifications were not considered essential to the Contaminated Sites Program. It was explained by program staff that *"they intuitively know if a site is a risk"*. Further, staff commented that the NCS is for people who *"don't understand"* or for *"prioritizing sites for bureaucrats"*, and that it is *"good for people to use to get priorities set for getting things done but is not used by qualified consultants"*.

Contrary to what we were told, Conservation uses various documents published by the department, including one entitled, Environmental Site Investigations in Manitoba (Guideline 98-01), to determine whether remediation is required or whether monitoring is warranted. This document, which is available on Conservation's public website, states on page 10, *"Site classification must be undertaken as part of the site investigation process"*.

Also, Conservation's *Standard Operating Procedures* state:

*"In some situations, contaminant levels above the criteria recognized by Manitoba may be allowed to remain on a site without requiring major remediation. This approach, described as 'on-site risk management' may be considered in situations where localized contamination has been detected on a property and where all of the following conditions apply:*

- The site has been assessed according to the CCME National Classification System for Contaminated sites;*
- There is no evidence of off-site migration of the contaminant plume;*
- The activity which caused the contamination has been corrected or removed; and*
- The site is in an area where there is a low risk of exposure to the contaminated media (impermeable soils, no sensitive occupancies in immediate area)."*

Although the procedures document lacked clear direction in that it did not indicate the classification(s) for which "on-site risk management" was appropriate, it clearly stated that classifications must be performed using the NCS in order for staff to give consideration to on-site risk management.

Despite the fact that site classifications were referred to in these two program policy documents, Conservation staff indicated that their procedures did not include or require an initial classification of all contaminated or potentially contaminated sites. Even though classification information was often provided by consultants in ESAs, Conservation did not record this information and did not use it as a tool for prioritization.

**We recommend that Conservation require that environmental assessments for all contaminated sites specify the classification of those sites based on the NCS or a similar specified classification system.**

#### ***Response from Officials***

*This recommendation is consistent with the requirements of the department's guideline, *Environmental Site Investigations in Manitoba (Guideline 98-01, revised 2002)*. The department shall review procedures and operational guidelines to address this concern and shall ensure that staff are fully aware of and committed to these procedures and operational guidelines.*

We recommend that Conservation record classifications for all contaminated sites.

*Response from Officials*

*Staff will be directed to record classifications for all contaminated/impacted sites in the EMS database.*

We recommend that Conservation use reported classifications as a tool to support risk assessment.

*Response from Officials*

*Reported classifications, such as NCS, are used as a tool to support risk assessment. The department shall review procedures and operational guidelines to address this concern and shall ensure that staff are fully aware of and committed to these procedures and operational guidelines.*

#### 4.1.3 Policy for Database Management Was Inadequate

Policies for the tracking of all data related to contaminated sites should include tracking of contaminated site classifications and changes in those classifications, the receipt of information, the approval of documents including ESAs and RAPs, as well as all monitoring activities.

When we discussed policy related to database management, we found:

- No policy for timelines for inputting data;
- No classifications are recorded;
- Risk assessments are recorded;
- Responsibility for contamination is not recorded; and
- The input of monitoring and follow-up activities in the database commenced in February 2005.

Conservation's ability to ensure effective tracking of contaminated sites was hampered by the lack of clear policy related to its database management system.

We recommend that policy related to database management be established to ensure that effective tracking of contaminated sites is possible.

*Response from Officials*

*The EMS Coordinator is currently working on improved business rules for input of contaminated/impacted sites information into the EMS database.*

#### 4.1.4 External Communication Strategy Was Ineffective

Internal communication of the Contaminated Sites Program to staff involved with monitoring compliance is essential to ensure consistent program delivery.

Communication of information on dealing with contaminated sites externally is also required. This communication should include direction to property owners for the management of contaminated sites at the time the initial contamination is suspected or evident, direction on classification of contamination, and direction on preparation of remediation plans. External communication should also address the needs of those involved with regard to remediation activities and Conservation's requirements upon completion of remediation.

Conservation's policy for providing program information on the Contaminated Sites Program involved the use of the following:

##### Internal

- All Environment Officers had computer access to program details;
- The Contaminated Sites Working Group, comprised of the program coordinator and regional representatives, met approximately twice annually to discuss program changes; and
- The Contaminated Sites Working Group disseminated program information to regional staff involved with the program.

Overall, we found that the internal communication strategy on issues related to contaminated sites was adequate.

##### External

- A public webpage for the Contaminated Sites Program (<http://www.gov.mb.ca/conservation/regoperations/contams/index.html>); and
- Speaking engagements upon request.

The information on the Contaminated Sites Program made available to the public on Conservation's website included various "guidelines". Each "guideline" was found through a link to a separate document. For example, as the website explained, Guideline 98-01, Environmental Site Investigations in Manitoba, "provides information and direction on the methods and protocols considered acceptable by Manitoba Conservation for the investigation of sites where the

*quality of groundwater, surface water, sediments and/or silt may have been affected by contaminants as result of past or present usage of the site".*

Although this information was useful, the website lacked an overall description of the steps and processes to follow when a site becomes contaminated.

The website also included a "Manitoba Sites List". However, the listing was outdated. According to the website, the listing was "current to September 2002". The listing did not give any indication of the extent or nature of the contamination. It only provided the Conservation file number, the "file name", and the company name and address.

As mentioned previously, Conservation did not promote the use of the NCS to those responsible for contamination of sites nor did they promote the use of any other classification system. They did, however, provide a link under the Contaminated/Impacted Sites Program page of their website to some CCME guidelines on the CCME website.

**We recommend that Conservation update its website to ensure current and meaningful information on contaminated sites is available to the public. The site should provide clear direction for the public regarding their obligations in the event that they are responsible for a contaminated site, including Conservation's requirements before, during and after remediation.**

***Response from Officials***

*The Contaminated Sites Program Coordinator will review the contaminated/impacted sites website. The website will be improved through the addition of an overview of the department's requirements for dealing with a contaminated/impacted site.*

**We recommend that, as part of its communication strategy, Conservation promote the use of the NCS to those responsible for contamination of land sites.**

***Response from Officials***

*This recommendation is consistent with the requirements of the department's guideline, Environmental Site Investigations in Manitoba (Guideline 98-01, revised 2002). The department shall review procedures and operational guidelines to address this concern and shall ensure that*

*staff are fully aware of and committed to these procedures and operational guidelines.*

#### 4.1.5 Mandate of Conservation Was Not Addressed by Legislation

In addition to our review of Conservation's policy related to the management of contaminated sites, we reviewed *The Contaminated Sites Remediation Act* to whether or not it was adequate to ensuring the protection of the environment from the harmful effects of contamination. Specifically, the Act should provide direction for the monitoring of all contaminated or potentially contaminated sites.

The mandate of Conservation's Contaminated Sites Program includes much more than is covered by *The Contaminated Sites Remediation Act*. The Act focuses solely on three key issues: Designation, remediation of designated sites, and apportioning responsibility of designated sites.

A May 16, 1997 Press Release issued by the Province of Manitoba around the time the CSRA came into effect stated, *"New legislation is now in effect to better deal with issues relating to contaminated sites. The CSRA...deals with all aspects of the management of contaminated sites, including site investigation, designation and remediation"*.

Although the Province promoted the CSRA as a mechanism to manage all aspects of the management of contaminated sites, application of the legislation is limited to 'designated contaminated sites', not including all contaminated sites. The Press Release goes on to say, *"Although there are several sites in Manitoba impacted by varying amounts of contamination, there are currently only a few meeting the risk criteria for designation"*.

Of notable interest were comments we found in an internal document dated January 2005. The "discussion paper" was prepared for the Director of Headquarters Operations based on input from the Contaminated Sites Working Group. The document stated, *"...it has become evident that, while useful and detailed for administering the designated contaminated sites in Manitoba, the CSRA has been found to have deficiencies in other areas: for instance, it's utility when dealing with impacted sites, which constitute all but 7 of the 2,100 sites in the database, is less effective"*.

Because of the limitations of the CSRA and its specific application to 'designated contaminated sites', policy governing the management of all contaminated sites, commonly referred to by Conservation as 'impacted sites', is lacking.

**We recommend that Conservation conduct a review of the CSRA with a view to ensuring that the management of all contaminated sites is addressed in the Act.**

*Response from Officials*

*The Department also uses The Dangerous Goods Handling and Transportation Act (DGHTA) and the Storage and Handling of Petroleum Products and Allied Products Regulation (pursuant to DGHTA) to address contaminated/impacted sites. However, review of the CSRA may be appropriate given that it was enacted more than ten years ago. Review of the Act would also be an opportunity to enhance program delivery. The department will revisit the legislation.*

## 4.2 Need to Ensure Remedial Action Plans are Developed and Approved

### Audit Criterion

Conservation should ensure the existence of adequate remediation plans for sites that are being tracked for contamination.

### 4.2.1 Responsibility for Remediation Was Not Confirmed by Conservation

In many cases, the party responsible for the remediation of a contaminated site is the owner or occupier of the property. However, there are cases where contamination is the responsibility of another party. Clause 21(a) of *The Contaminated Sited Remediation Act* (CSRA) describes a "polluter pay" principle in this way:

*"the principle that the primary responsibility for the remediation of a contaminated site lies with the person or persons who contaminate it and that they should bear the responsibility for the remediation in proportion to their contributions to the contamination"*

Because it may not always be obvious where responsibility for the remediation of a contaminated site lies, Conservation should always confirm responsibility when they become aware of a contaminated or potentially contaminated site. Part 3 of the CSRA entitled, *Persons Responsible for Remediation* provides extensive direction for establishing responsibility for remediation of contaminated sites. This guidance should be applied to all sites being tracked by Conservation.

When Environmental Site Assessments (ESAs) and Remedial Action Plans (RAPs) are forwarded to Conservation, they generally indicate the party who is responsible for the remediation of a contaminated site. The ESAs and RAPs that Conservation has received are found in hard copy files established for each contaminated site. However, the responsibility for remediation is not recorded separately in the manual file, or in the electronic file.

Where ESAs and RAPs were not on file, we found no evidence that Conservation attempted to formally establish responsibility for remediation.

**We recommend that Conservation establish and record responsibility for all contaminated and potentially contaminated sites as they become aware of these sites.**

*Response from Officials*

*This recommendation recognizes that the current owner may not always be the party responsible for remediation and that in some cases the responsible party may not be known. The EMS database currently has limited capability to record this information, and additional recording capability will be explored within the EMS framework.*

#### 4.2.2 Handling of Remedial Action Plans Was Not Consistent

Conservation should obtain, assess and approve Remedial Action Plans for all contaminated sites that pose a risk to the environment. Upon completion of the assessment, owners of contaminated sites or a representative should be notified in writing of Conservation's approval of the proposed remediation. When changes must be made to the proposal to satisfy the requirements of Conservation, this information should also be conveyed in writing.

Conservation usually receives Environmental Site Assessments on a voluntary basis from consultants engaged by the owners of contaminated sites. Based on these assessments, Remedial Action Plans (RAPs) are subsequently prepared, sometimes voluntarily and sometimes at the request of Conservation.

For the most part, we found RAPs on file when warranted. Twenty-five of the 41 contaminated sites files that we examined or 61% included RAPs. However, of these 25 files, for two of the RAPs on file, we could not find evidence that they had been reviewed and did not find correspondence to the owner of the sites, or to the consultants engaged, to indicate Conservation's acceptance of the RAPs.

In one file that did include an RAP, we found evidence that Conservation had reviewed the document. Interdepartmental emails described a concern with

one aspect of the proposal for remediation, yet we found no evidence that this concern was relayed to the operator or to the consultant.

For 7 of the 41 files we looked at, or 17%, we saw no evidence that RAPs had been obtained even though there was evidence in the files to indicate the need for RAPs.

When RAPS are not obtained and reviewed by Conservation, there is a risk that contaminated sites may be remediated without the department's scrutiny and the remediation activity may not completely address protection of the environment using Manitoba standards.

Conservation's policy should include the conducting of a complete and prompt review of all Environmental Site Assessments (ESAs) and Remedial Action Plans (RAPs) submitted. These documents are submitted voluntarily, usually by consultants who have been engaged by owners of properties that have become contaminated. They are submitted with the expectation that Conservation will review them and express an opinion on the proposed course of action.

Conservation's policy was that all ESAs and RAPs be reviewed for scientific accuracy and that letters of approval be issued once the review is complete. In cases where modifications are required to obtain Conservation approval, these changes were requested by a certain date in the form of a letter.

However, timelines had not been established for reviewing and approving ESAs and RAPs. Due to limited staff resources, these documents were often not reviewed in a timely manner.

Delays in the review and approval of ESAs and RAPs may cause delays in conducting remediation activities as owners await Conservation's approval and/or comment before proceeding.

**We recommend that Conservation obtain RAPs for all sites requiring remediation. These plans should be assessed on a timely basis by Conservation and owners or representatives should be informed in writing of Conservation's approval. Alternatively, if changes to the RAPs are required, Conservation should notify the owner or representative in writing of the required changes.**

### *Response from Officials*

*This recommendation is consistent with existing direction to staff. The department will establish timelines for the review of RAPs.*

### 4.3 Monitoring of Contaminated Sites Needs Improvement

#### Audit Criterion

Conservation should monitor all identified contaminated sites:

- All reports of potential contamination should be responded to in a timely manner and should receive appropriate follow-up.
- Contaminated sites that present a high risk of environmental damage should be remediated quickly to prevent the contamination from spreading.
- Remediation activities should be monitored by Conservation.
- Conservation should require periodic updates on changes in risk-rankings of contaminated sites.
- Final reports following remediation activities should be submitted to Conservation for review.
- All information updates including reports following remediation should be reviewed, analyzed, and receive appropriate follow-up.

#### 4.3.1 Timely Response to Technical Reports Was Not Consistent

Conservation staff informed us that any site with Benzene floating on the surface is referred to as "Free Product" and is considered high risk, requiring immediate attention. Also, sites where benzene is dissolved in drinking water plumes are considered high risk, requiring remedial action. Emergency response to spills is a priority for prime-duty officers. Other complaints are prioritized by supervisors.

Conservation is charged with the responsibility of assessing sites that have been exposed to contaminants and determining an appropriate course of action. Environmental Site Assessments (ESAs), Remedial Action Plans (RAPs) and Final Construction reports, also known as Remediation Reports which are submitted once remediation has been carried out, all require a complete review by knowledgeable Conservation staff. For all of these reports, the consultant or owner who has submitted the documentation expects a response from Conservation before taking any further action. Given the threat of the spread of

contamination, a prompt reply should be a priority of Conservation to ensure the protection of the environment from further damage.

After reviewing ESAs, Conservation's specialists are in a position to recommend or require further action. For example, when they analyze test results included in ESAs, they may request remedial action, and would subsequently require that an RAP be submitted.

When RAPs are received, they must be reviewed and these specialists within Conservation must determine whether the course of action proposed is sufficient to protect the environment from further contamination. They are required to approve RAPs, recommend changes to details of the remedial action, or in extreme circumstances could refuse an RAP.

Finally, once remediation has been carried out, final reports are required in order to analyze the results of the remedial action and to determine whether further remediation activity is required or not.

For all three of these reports, the consultant or owner who submitted the report(s) is to be notified in writing of the acceptance, rejection, or recommendations of Conservation.

While we did not find any issues related to the response time when reports of contamination were received by Conservation, we did find that the review of technical reports submitted by consultants or property owners and the response to these reports was often inadequate.

In our testing of contaminated sites files, we found that for 10 out of 41 or 24%, the response by Conservation to technical reports submitted by consultants or property owners was inadequate, either because there was no formal response or the response was not timely. In addition, for 7 of these 41 files or 17%, we were unable to determine whether Conservation's response was appropriate because of a lack of information found in the file.

**We recommend that Conservation ensure that all technical reports received for contaminated sites are reviewed and, when warranted, responded to in a timely manner.**

### *Response from Officials*

*The recommendation for timely review of reports is consistent with existing direction to staff. Staff are not expected to respond to all technical reports unless there is a request to do so or if additional information is required. The department will establish timelines for the review of technical reports.*

#### 4.3.2 Evidence that Remediation Was Carried Out Per RAPs Was Lacking

As discussed earlier, one of the functions of the Contaminated Sites Program is the review and approval of Remedial Action Plans. Once these plans have been approved by Conservation, remediation should be carried out according to the approved plan. Remediation activities should be monitored by Conservation.

Of the 41 contaminated site files we looked at, we found that remediation had been done on 22 sites, or 54%. We found very little evidence that remediation activities were monitored by Conservation; very few site visits were documented during the time that remediation was carried out.

For 10 of the 41, or 24% of the contaminated sites files we looked at, we could not determine if remediation had taken place because the files were incomplete.

**We recommend that Conservation ensure that remediation is carried out according to approved RAPs.**

**We recommend that Conservation ensure that files for contaminated sites are complete and that all activity related to each site is noted in the files, both in the hard copy file as well as the electronic file.**

##### *Response from Officials*

*These recommendations are consistent with existing policy and direction to staff. The department shall review procedures and operational guidelines to address this concern and shall ensure that staff are fully aware of and committed to these procedures and operational guidelines.*

#### 4.3.3 Information Requested from Owners of Contaminated Sites Was Not Always Provided

Conservation should require periodic updates on changes in risk-rankings of contaminated sites. Final reports following remediation activities should be submitted to Conservation for review. These reports should include a description of the remediation activities carried out, soil and water test results for the remediated property, as well as a determination of the success of the remediation. Conservation should review these reports to determine if further remediation is required.

For 6 of the 41 files that we looked at, we found no evidence that final reports had been filed with Conservation. For these 6, although documentation in the file led us to believe that remediation may have been carried out, we could not positively determine if this was the case or not.

In general, final reports were submitted to Conservation shortly after remediation was carried out. For one file we found that the final report was not received by Conservation until one year after remediation had been completed.

We found requests by Conservation for specific information for 22 of the 41 files tested. For 2 of these files, we did not find evidence that the requested information was ever received.

**We recommend that Conservation ensure that all information requested is obtained in a timely manner.**

***Response from Officials***

*This recommendation is consistent with existing direction to staff. The department will establish timelines for receipt of information.*

#### **4.3.4 Updates Were Not Reviewed, Analyzed, or Followed-up**

All information updates, including reports following remediation, should be reviewed, analyzed, and receive appropriate follow-up.

For the 22 files where sites had been remediated, we looked for confirmation of acceptance of reports as evidence that reports had been reviewed. We did not find correspondence to owners to confirm this review for 4 of these files.

Eighteen sites had been remediated and final reports had been received and reviewed. For 2 of these 18 sites further information was requested, yet we found no evidence that this information was received and no evidence that Conservation had followed-up on the missing information.

As previously mentioned, there were 19 files for which we could not confirm whether or not remediation had been carried out. For 3 of these 19 sites, we did find evidence of problems noted by Conservation yet we did not see any evidence that the concerns noticed were followed-up.

**We recommend that Conservation review, analyze and respond to all reports submitted to them in a timely manner.**

***Response from Officials***

*The recommendation for timely review of reports is consistent with existing direction to staff. Staff are not expected to respond to all technical reports unless there is a request to do so or if additional information is required. The department will establish timelines for the review of reports.*

We recommend that Conservation follow-up on information not received as requested.

*Response from Officials*

*This recommendation is consistent with existing direction to staff. The department will establish timelines for follow-up on information not received as requested.*

## 4.4 Database Maintenance Needs Improvement

### Audit Criterion

Conservation should maintain a complete and accurate database of contaminated sites.

### 4.4.1 Contaminated Sites Data Was Not Current

In order to adequately monitor contaminated and potentially contaminated sites, Conservation should maintain a complete and accurate database of all properties that are known to have been exposed to contaminants. Data should be input on a regular basis to ensure that all data is current and accessible to all staff involved with the Contaminated Sites Program.

The management information system used by Conservation for its environmental programs is a system purchased in 1999 known as the Environmental Management System (EMS). The system is capable of storing and tracking data for all contaminated sites.

We were told by Conservation that the database was not up-to-date because some Environment Officers do not input all of their contaminated sites files in EMS. When asked how we would obtain a complete listing of all sites known to the Province, we were told that we would have to ask each Regional Office for a listing of their files not in EMS. We contacted 10 offices throughout the Province. Four of the offices reported that all of their contaminated sites are recorded in EMS. Two offices were able to quantify the number of sites not in EMS: one had 18 and the other had one. Two of the offices were unable to quantify the number of sites not in EMS without extensive research. Two of the offices did not respond.

For the sites that were recorded in EMS, Conservation recreated this data in an Excel document in February of 2005 and Environment Officers were asked to update the spreadsheet by February of 2006. Rather than depend on their central database to track current information, they had created a separate database as

a means to update data. It took at least a full year to complete that process, at which time the process would be repeated.

**We recommend that Conservation ensure that its central database of contaminated sites, EMS, is current.**

***Response from Officials***

*The EMS Coordinator is currently working with regional staff to ensure that the EMS database is current.*

**We recommend that Conservation use the EMS database as its primary source to track data.**

***Response from Officials***

*This recommendation is consistent with existing direction to staff. EMS is the department's primary database for tracking contaminated/impacted sites information. The department shall review procedures and operational guidelines to address this concern and shall ensure that staff are fully aware of and committed to these procedures and operational guidelines.*

#### **4.4.2 Database Was Incomplete and Inaccurate**

When contaminated site classifications are known to Conservation, this information should be recorded in the contaminated sites database. The status of sites recorded in the database should be current and accurate.

Assessing risk would facilitate the allocation of Conservation's resources for dealing with contaminated sites. Conservation would be positioned to identify resource priority levels based on the urgency of remediation requirements, with high risk sites being identified for early attention.

As explained previously, Conservation did not consider the classification of contaminated sites to be crucial information. Program staff described site classification as a tool that is not for their use, even though their *Standard Operating Procedures* indicated that site classifications were required in order for program staff to determine if "on-site risk management" was warranted. This would indicate that there was value in having this information.

Because site classifications were not viewed as necessary, this information was not included in the program's database even when available to Conservation. There was no field specified in the database to track this information.

We found that Conservation assigns a "specific activity" in its database for contaminated sites, segregating the sites in these seven categories:

- IS0 - No Contamination;
- IS1 - Suspected Site;
- IS2 - Confirm Site;
- IS3 - Remediation Underway;
- IS4 - Conditions on Site (i.e., Conservation has imposed conditions);
- IS5 - Site Closed - No Conditions (i.e., Conservation has not imposed conditions); and
- IS6 - Site Cleaned to < Tier 1.

Although these "specific activities" provided a basis for grouping sites which was somewhat dependant on the site history, they were merely indications of the status of the sites and did not provide enough information to establish environmental priorities. Even if we were to consider the "specific activity" assigned by Conservation as a preliminary risk assessment, we found this information to be inaccurate and incomplete.

We looked at the files for a sample of 41 contaminated sites selected from the Department's database of more than 2,000 files or sites. Of the 41 contaminated sites files we examined, we found:

- the majority, 29 (71%) did not warrant flagging as high risk sites, for the most part because the sites had already been remediated;
- 8 sites (20%) required remediation based on reports included with the manual files; and
- of these 8 sites that required remediation, 5 were listed in the database as "IS2 - Confirm Site" and 3 were listed as "IS3 - Remediation Underway". Although the status for all of these 8 sites indicated that remediation was either needed or underway, the information gave no indication of the urgency of the situation for each of these sites.

Further testing called into question the accuracy of the "specific activity" assigned to each site by Conservation. We found:

- 1 file which indicated that no contaminants were present at the site, yet Conservation had the site recorded as "IS3 - Remediation Underway";
- 2 other sites that were labeled as "IS3- Remediation Underway" had evidence in the files to indicate that remediation had been completed;
- 1 site that had documentation to indicate that remediation was underway was labeled by Conservation as "IS2-Confirm Site"; and
- The "specific activity" for 19 of the 41 files, or 46%, did not agree with the information found in the hard copy files. We could only confirm that the

information found in the database was complete and accurate for 14 or 34% of the files we looked at.

- For 4 of the 41 files tested, we could not conclude if the "specific activity" assigned by Conservation was accurate because information in the file appeared to be incomplete.

Because the sites were not properly identified, the information available could not be considered as a preliminary assessment on which priorities could be established. High risk sites were not identified for early attention.

**We recommend that Conservation ensure that the program database can accommodate site classifications in such a way that the information can be used for tracking and reporting purposes.**

***Response from Officials***

*The EMS Coordinator is working with the department's information Technology staff to improve and/or better utilize EMS to enhance program delivery.*

**We recommend that Conservation ensure that information in the database is complete and accurate.**

***Response from Officials***

*The EMS Coordinator is working with regional staff to ensure that contaminated sites information in EMS is complete and accurate.*

**We recommend that high risk contaminated sites be clearly identified for early remedial attention.**

***Response from Officials***

*This recommendation is consistent with existing direction to staff. The department shall review procedures and operational guidelines to address this concern and shall ensure that staff are fully aware of and committed to these procedures and operational guidelines.*

#### 4.4.3 Database Did Not Include Remediation Plan Details

Data related to the receipt and approval of remediation plans should be included in the database. For example, Conservation should be able to easily identify:

- Sites for which the receipt of an RAP is outstanding;
- RAPs that are currently in the review stage;
- Sites for which revisions to RAPs are required; and
- Approved RAPs for which remediation is outstanding.

An adequately designed database should facilitate the tracking of information such as this to ensure that the program is operated efficiently and effectively.

We found that the database does not include specific fields to track dates that RAPs are received, the approval of RAPS once they have been reviewed by Conservation, and/or correspondence dates related to RAPs. Some Environment Officers input notes in the database to indicate some details concerning RAPs. For example, they may input a note saying a RAP has been approved. Some even include a copy of response letters in the notes. However, tracking is not possible through these notes.

**We recommend that Conservation ensure that the database is structured in a way that will ensure effective and efficient tracking of remediation plans.**

##### *Response from Officials*

*The EMS Coordinator is working with the department's Information Technology staff to improve and/or better utilize EMS to enhance program delivery.*

#### 4.4.4 Monitoring and Follow-up Activities Were Not Recorded In Database

All monitoring and follow-up activities should be recorded in the database. Making full use of the database and including all information available in the electronic file would facilitate effective management of the Contaminated Sites Program.

Of the 41 files that we looked at, the manual files for 25 of them included monitoring data. Of these 25 files, 24 of them or 96% did not have this monitoring data recorded in EMS.

**We recommend that all monitoring data be input in the contaminated sites database.**

*Response from Officials*

*This recommendation is consistent with existing direction to staff to note the presence of monitoring data in the EMS database (actual data are not input into EMS). The department shall review procedures and operational guidelines to address this concern and shall ensure that staff are fully aware of and committed to these procedures and operational guidelines.*

#### 4.4.5 Information Updates Were Not Recorded In Database

All information updates should be recorded in the database to facilitate program management.

Of the 41 files which we tested, 22 of them had additional information in the manual files that one would expect to find in the electronic file. For example, the receipt and approval of all technical reports should have been recorded in the database. Of these 22 files, only four of them, or 18%, were appropriately recorded in EMS. For the remaining 18 files, or 82%, no data related to information updates was found in the database.

**We recommend that all information updates, including the tracking of technical reports received from operators or consultants, be input in the contaminated sites database.**

*Response from Officials*

*This recommendation is consistent with existing direction to staff. The department shall review procedures and operational guidelines to address this concern and shall ensure that staff are fully aware of and committed to these procedures and operational guidelines.*

## 4.5 Communication Strategy Needed

### Audit Criterion

Conservation should have a comprehensive communication strategy to make entities and industry aware of their obligations with regard to the identification and reporting of potentially contaminated sites.

### 4.5.1 Communication of Policy and Standard Definitions Should be Strengthened

Conservation should communicate policy and standard definitions to stakeholders to aid in explaining and understanding contaminated site risks as well as remediation management.

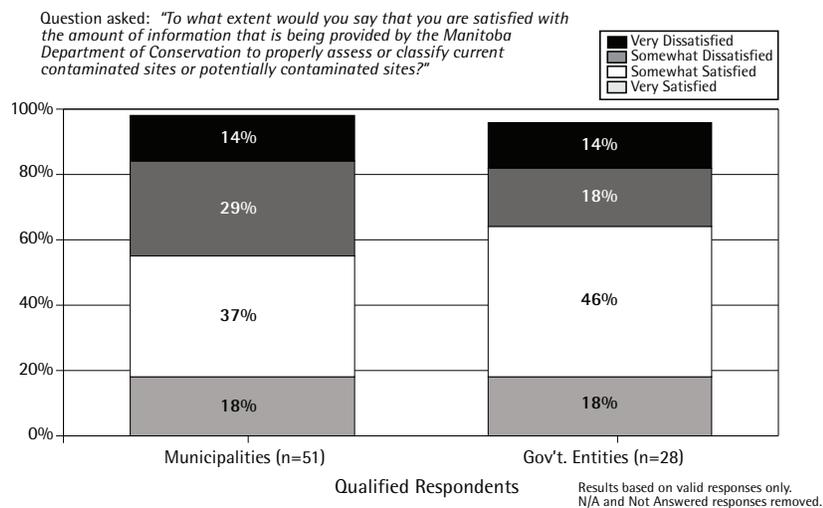
To gauge the success of Conservation in this area, we asked our survey recipients to indicate their satisfaction with the information they have received from Conservation with regard to the assessment and classification of contaminated sites.

Of 28 entities with known contaminated sites that responded to this question, 64% indicated that they were either somewhat or very satisfied. However, 18% of them reported that they were somewhat dissatisfied and 14% said they were very dissatisfied.

The responses from municipalities were similar. Of 51 who answered the question, while 55% were either somewhat or very satisfied, 29% were somewhat dissatisfied and 14% were very dissatisfied.

See **Figure 11** for a summary of the responses to our survey question.

Figure 11



Source: Office of the Auditor General of Manitoba Environmental Liabilities Survey, 2006.

The answers were very similar when we asked about information received from Conservation related to remediation management.

**We recommend that Conservation communicate policy and standard definitions to aid in explaining and understanding contaminated site risks as well as remediation management.**

### *Response from Officials*

*This recommendation is consistent with existing direction to staff. EMS is the department's primary database for tracking contaminated/impacted sites information. The department shall review procedures and operational guidelines to address this concern and shall ensure that staff are fully aware of and committed to these procedures and operational guidelines.*

## 5.0 Department of Conservation's Oversight of Landfills

Objective and Criteria	Conclusions
<p><b>Our objective was:</b></p> <p>To determine whether the Department of Conservation was adequately licensing, permitting and monitoring landfills to ensure compliance by landfill owners and operators with:</p> <ul style="list-style-type: none"> <li>• <i>The Environment Act</i>, and</li> <li>• <i>The Waste Disposal Grounds Regulation of The Environment Act</i>.</li> </ul> <p><b>The audit criteria established for this objective were:</b></p> <p><b>Section 5.1</b></p> <p>Legislation should adequately address the risks, liabilities and due diligence associated with landfills.</p> <p><b>Section 5.2</b></p> <p>Policies and procedures should be in place to guide the management of landfills.</p>	<p>Conservation's procedures for the management of landfills did not ensure compliance by landfill owners and operators with legislation.</p> <p><b>Legislation for landfills needs to be more comprehensive</b></p> <p>Legislation did not adequately address the risks, liabilities and due diligence associated with landfills. (Section 5.1.1) Also, legislation did not require that a permanent record of landfills be maintained. (Section 5.1.2)</p> <p><b>Policies and procedures for landfill management need improvement</b></p> <p>Policies and procedures to guide the management of landfills were inadequate to ensure protection of the environment. (Section 5.2.1) Weaknesses were noted in these policy areas:</p> <ul style="list-style-type: none"> <li>• Assessment or prioritization of landfills based on risk (Section 5.2.2);</li> <li>• Closure of landfills (Section 5.2.3);</li> <li>• Monitoring (Section 5.2.4);</li> <li>• Database tracking (Section 5.2.5); and</li> <li>• Communication strategy (Section 5.2.6).</li> </ul>

Objective and Criteria	Conclusions
<p><b>Section 5.3</b> Conservation should have adequate landfill permitting processes.</p>	<p><b>Landfill permitting processes need improvement</b></p> <p>Conservation did not have adequate landfill permitting processes. Weaknesses were noted in these areas:</p> <ul style="list-style-type: none"> <li>• Review and approval of closure plans (Section 5.3.1);</li> <li>• Assessment of landfill applications (Section 5.3.2);</li> <li>• Issuance and renewal of permits (Section 5.3.3); and</li> <li>• Permits issued without appropriate conditions (Section 5.3.4).</li> </ul>
<p><b>Section 5.4</b> Conservation should have adequate landfill licensing processes.</p>	<p><b>Landfill licensing processes need improvement</b></p> <p>Generally, Conservation had adequate landfill licensing processes. However, we identified two areas of concern:</p> <ul style="list-style-type: none"> <li>• The requirement to license landfills was not consistent for landfills of similar risk. The largest landfill in the Province was not licensed (Section 5.4.1); and</li> <li>• Closure and post-closure plans were not adequately managed. (Section 5.4.2).</li> </ul>
<p><b>Section 5.5</b> Conservation should identify and classify landfills according to risk to the environment.</p>	<p><b>Risk management for landfills needs to be improved</b></p> <p>Conservation did not adequately identify and classify landfills according to risk to the environment. (Section 5.5.1)</p>
<p><b>Section 5.6</b> Conservation should ensure the existence of adequate closure and post-closure plans and that closure notices are obtained for all closed landfills.</p>	<p><b>Adherence to Regulation requirements regarding closure of landfills needed</b></p> <p>Conservation did not ensure the existence of adequate closure and post-closure plans and that closure notices were obtained for all closed landfills. (Section 5.6.1)</p>

Objective and Criteria	Conclusions
<p>Section 5.7</p> <p>Conservation should adequately monitor all landfills.</p>	<p><b>Monitoring of landfills needs improvement</b></p> <p>Conservation's monitoring of landfills was not sufficient. Weaknesses were noted in these areas:</p> <p>Follow-up on updates required from operators was inconsistent (Section 5.7.1);</p> <p>Conservation was not ensuring that conditions of operation were met (Section 5.7.2); and</p> <p>Follow-up on closed landfills was inconsistent (Section 5.7.3).</p>

## 5.1 Legislation for Landfills Needs to be More Comprehensive

### Audit Criterion

Legislation should adequately address the risks, liabilities and due diligence associated with landfills.

### 5.1.1 Legislation is Not As Comprehensive As Legislation in Other Jurisdictions

The intent of *The Environment Act*, as explained in the Act, is "to develop and maintain an environmental management system in Manitoba which will ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for this and future generations". One aspect covered under this Act is the management of waste disposal. The Waste Disposal Grounds Regulation addresses issues related to landfills.

We compared Manitoba's Waste Disposal Grounds Regulation to legislation in other jurisdictions. The jurisdictions we compared and the specific legislation within each jurisdiction were:

Jurisdiction	Legislation
Manitoba	Waste Disposal Grounds Regulation
Prince Edward Island	Waste Resource Management Regulations
Saskatchewan	The Municipal Refuse Management Regulations
Alberta	Code of Practice for Landfills (incorporated by the Waste Control Regulation)
Yukon	The Environment Act
North Dakota	North Dakota Century Code Chapter 23-29 and 33-20

The specific aspects of legislation included in our comparison were:

- Licence and Permit Renewals;
- Monitoring and Reporting Requirements;
- Basis for Determining Waste Disposal Classes;
- Provision for the Review of Legislation;
- Phase-In Process to Obtain Compliance of all Landfills; and
- Closure Requirements.

## Licence and Permit Renewals

Licenses and permits should not be issued for indefinite periods of time. Even though these legal documents are subject to being revoked at the discretion of authorized persons at any time, expiry dates ensure that periodic reviews are conducted, providing assurance that the environment is not being compromised. A formal application form for renewal on the part of the licensee or permit holder also serves to remind these owners/operators that they operate under a regulatory process and must comply with the conditions imposed on them.

The Yukon Environment Act stipulates that permits may be issued or renewed for a period of up to 3 years. In order for a permit to be renewed, formal application must be made by the permit holder.

However, we found that the Manitoba Waste Disposal Grounds Regulation does not set out any requirements for the renewal of permits, nor does it define the length of time a permit can remain in effect. As for licensed landfills, the Regulation does not include any guidance for expiry dates for licenses either.

## Monitoring and Reporting Requirements

Landfill operators should be required to frequently monitor leachate and surface and groundwater. They should also be required to provide periodic reports to Conservation, at least annually. This would include reports of activity and monitoring results.

Following is a summary of the legislated requirements for monitoring and reporting in Manitoba as well as that of some other jurisdictions:

Jurisdiction	Monitoring and Reporting Requirements
Prince Edward Island	Records of the operation to be completed daily and made available for inspection at all times; by June 30 each year must submit a written report to the Minister, including results of leachate monitoring and surface water monitoring.
Alberta	Groundwater monitoring required on an annual basis throughout active life and post-closure period; Annual report including waste volumes and monitoring records to be prepared annually for active landfills; operating record to be provided to Alberta Environmental Protection upon request.
Yukon	Solid waste management plans required. Must cover 10 year period and be revised and updated at least one year before it expires; permit holder shall retain records (waste volumes, monitoring test results) for 3 years and make the records available for inspection upon request.
Manitoba	None stipulated.

### Basis for Determining Waste Disposal Classes

Landfills should be grouped in such a way to clearly distinguish the level of risk that they pose to the environment. For example, there may be high risk landfills, moderate risk landfills, or low risk landfills. The use of risk-based classifications would facilitate the setting of priorities for monitoring of landfills.

Legislation for landfills in Alberta and North Dakota is based on the volume of waste received.

Manitoba's Waste Disposal Grounds Regulation groups landfills by the population served by the facilities at the time they were established:

- Class 1 facilities are those that originally served a population of more than 5,000;
- Class 2 facilities served a population of more than 1,000 but less than or equal to 5,000 at the time of establishment; and
- Class 3 facilities served a population of 1,000 or less.

In 1999, a report was released by Manitoba Conservation entitled, *Final Report of the Manitoba Regional Waste Management Task Force*. As part of the process "a comprehensive review of waste management regulations, strategies and operational regional waste systems in North Dakota, Saskatchewan, Nova Scotia, Montana, Alberta, and California was undertaken."

The report concluded with this recommendation for regulatory amendment:

*"1.3a - Recommendation*

*That the following amendments be made to the Waste Disposal Ground Regulation (see Appendix 2):*

- elimination of the population based WDG Class structure;*
- establish provision for codes of practice for WDGs and other waste management facilities; and*
- establish design and operational criteria for municipal solid waste disposal facilities receiving more than 4,000 tonnes of waste annually, facilities receiving less than 4,000 tonnes of waste annually, and for construction and demolition waste disposal sites.*

*Following is an excerpt from Appendix 2 of the report:*

*WASTE DISPOSAL GROUND CLASSIFICATION (BASED ON THE ESTIMATED TOTAL WEIGHT OF SOLID WASTE RECEIVED)*

*Class 1 Site: Total weight exceeds 4000 tonnes per year.*

*Class 2 Site: Total weight exceeds 1000 tonnes but less than 4000 tonnes per year.*

*Class 3 Site: Total weight is less than 1000 tonnes per year.*

*CLASS 1 WASTE DISPOSAL GROUND REQUIREMENTS - CLASSIFICATION CRITERIA*

*A waste disposal ground meeting any one of the following conditions is classified as a Class 1 site:*

- 1. any existing or proposed waste disposal site receiving solid waste in excess of 4000 tonnes per year or 350 tonnes per month; or*
- 2. any existing or proposed waste disposal site importing or accepting solid waste from another jurisdiction for commercial purposes, i.e., waste disposal for profit (this criterion does not apply to regional waste management partnership arrangement); or*
- 3. any existing or proposed private disposal site established for commercial purposes, i.e., waste disposal for profit."*

Despite the recommendations of this report by Conservation, no amendments were made to the Regulation.

### Provision for the Review of Legislation

In recent years, sustainable environmental management has come to the forefront as governments and citizens become more aware of our changing environment. Legislation must be reviewed and updated to ensure that the most recent information on environmental sustainability is addressed.

We noted that the Code of Practice for Landfills under the Waste Control Regulation in Alberta include a legislated requirement for the Code to be reviewed at least every five years.

The Waste Disposal Grounds Regulation in Manitoba does not provide for a required review.

### Phase-in Process to Obtain Compliance of all Landfills

The Province should establish legislation in such a way that all operators of waste disposal grounds operate on a level playing field, that is that they must comply with all aspects of the Regulation. For each of the classifications set out by the Province (Class 1, Class 2, and Class 3) landfills should be subjected to the same regulatory authority and operational conditions should be set by that authority. More specifically, all Class 1 waste disposal grounds should be licensed through the Environmental Approvals Branch.

When the Waste Disposal Grounds Regulation (150/91) came into force in 1991 replacing the former Waste Disposal Grounds Regulation (98/88), existing landfills were "grandfathered in" under their former classification and were not required to comply with certain aspects of the revised Regulation. For example, existing Class 1 landfills were exempted indefinitely from the requirement to obtain an environmental licence. They were allowed to continue operating under the authority of regionally issued permits, even though the permitting process is much less stringent than the licensing process. Also, although there were some basic conditions included in the former Regulation for Class 1 landfills, no specific conditions for Class 1 landfills were included in the new Regulation. Conditions for Class 2 and Class 3 sites were carried forward to the new Regulation. As a result, specific legislation for these "grandfathered in" Class 1 permitted facilities is virtually non-existent and any requirements imposed on permitted Class 1 landfills are left up to the discretion of regional directors.

We reviewed the process that was followed when North Dakota introduced new legislation in 1992 and found that existing permit holders at the time the new legislation came into force (December 1, 1992) had to notify the department of all requirements necessary to bring the permit holder into compliance, including a proposed schedule. This notification had to be filed by October 9, 1993. The Department was required by legislation to establish a compliance schedule for all of these permit holders to achieve compliance with the new legislation.

We found this recommendation in the 1999 Final Report of the Manitoba Regional Waste Management Task Force which concurs with our belief that a phase-in process is a reasonable expectation:

*"1.1d - Recommendation:*

*That all existing WDGs, of similar Class, meet the same operating requirements within 3 years (2003). That exemptions to requirements as set out in recommendation 1.1b be allowed on a case specific basis where environmental conditions permit, and only for WDGs receiving less than 4,000 tonnes of waste annually. (See Appendix 2)"*

Again, despite this internal recommendation within Conservation, no action was taken to amend the Regulation.

### Closure Requirements

Requiring a notice of closure does not in itself provide assurance that the environment is being protected. Legislation should involve remedial action when necessary and should also include requirements to monitor groundwater.

Following is a comparison of the legislation related to closure requirements in Manitoba to that of Saskatchewan and Alberta:

Jurisdiction	Closure Requirements
Saskatchewan	Before closure, operators must submit a proposal to the minister that outlines the steps proposed to protect the environment and obtain prior written approval of the proposal by the minister.
Alberta	After closure, operators must verify with the Director that closure and reclamation have been completed; file a closure and reclamation report; maintain the integrity of the final cover system and diversion and drainage structures; make repairs to the cover system as necessary; maintain, operate and monitor groundwater monitoring, leak detection, leachate collection, and gas venting systems where installed; protect and maintain surveyed benchmarks; annually compile monitoring data, records of maintenance and repairs and any remediation action taken; maintain operating records, including post-closure records, until the end of the post-closure period. Specifications for final cover are also included.
Manitoba	All Classes of WDG operators must submit closure notice (including information such as where the site is located, how long it was in operation, depth and type of waste, future plans for site, and closure date). Final cover specifications are included in the Regulation for Class 2 and Class 3 sites, but not for Class 1.

Other than providing notice of closure, no monitoring of closed landfills is required by legislation.

We recommend that the Waste Disposal Grounds Regulation be reviewed and that consideration be given to including requirements for:

- licenses and permits for the operation of landfills expire after a stated period of time;
- renewal of licenses and permits for the operation of landfills require a formal application on the part of the permit holder;
- monitoring and reporting requirements during operation;
- periodic review and amendment to the Regulation as needed;
- when the Regulation is amended, a phase-in process to ensure that all operators in each class of landfills are subjected to the same regulatory authority; and
- specific requirements for monitoring of closed landfills.

### 5.1.2 No Permanent Record was Maintained of Land Used for Landfills

Legislation should be specific enough to ensure protection of the environment and the interests of the citizens of Manitoba. Legislation should adequately address the risks, liabilities and due diligence associated with landfills.

One area which would serve to protect the interests of Manitobans is in the identification of properties that have been or are being used as landfills. A permanent record which the public can access should be kept by the Province of all such properties.

In addition to the deficiencies in the Waste Disposal Grounds Regulation mentioned previously, we noted that Section 13(2) of the Regulation falls short of protecting the interests of potential purchasers of properties that have been used or are being used for landfills. Also, the interests of those wanting to build on adjacent properties are not protected.

Section 13(2) provides for the director to file notice of the closure of a landfill at the Land Titles Office. Such notice would serve to provide a permanent record of the use of the property as a landfill. The Regulation does not address notification of existing landfills at the Land Titles Office.

The Regulation stipulates in Section 14 that no dwellings are to be constructed on or within 400 metres of a landfill or an abandoned landfill.













































































































