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## Main points

In this chapter, we report the results of our audit of the Department's processes to regulate air emissions in accordance with *The Clean Air Act* and *The Mineral Industry Environmental Protection Regulations, 1996*. Our audit covered the Department's processes from April 1, 2002 to October 31, 2003.

Regulating air emissions is a challenge. To meet this challenge, the Department needs to decide what resources it needs to monitor air emissions. The Department also needs to establish processes to ensure it issues appropriate permits to operators and follows up expired permits. The Department could then establish processes to monitor compliance with permits, handle air emission complaints, maintain information relating to air emissions, and report publicly on air emissions.

## Introduction

The Department of Environment is responsible for managing, enhancing, and protecting the Province's natural and environmental resources and sustaining them for future generations. Information about the Department is available at its web site (<http://www.se.gov.sk.ca/>).

To fulfill its mandate, the Department must protect primary resources including water, air, and land by using regulatory and non-regulatory controls. The Department regulates water and air quality and the contamination of land through five EcoRegions<sup>1</sup>. The staff of the EcoRegions manage water quality, air emissions, and land contamination.

In our 2003 Report – Volume 3, we reported the results of our audits of the Department, the special purpose funds and the Crown agencies that it manages for the year ended March 31, 2003. In that report, we also said that we planned to examine the Department's processes to regulate air emissions and described the criteria that we would use to evaluate those processes. Our work is now complete. This chapter describes the results of our work.

### Regulating air emissions

The Department is responsible to protect Saskatchewan's air quality by regulating air pollutants that originate in the Province. The Department regulates air emissions from operators and monitors ambient (overall) air quality.

To monitor ambient air quality, the Department monitors air pollution levels. Air pollution results from fuel emissions, industrial operations, transportation, and forest fires. The Department has stations in Saskatoon and Regina that monitor surrounding air pollution levels. The Department reports on ambient air quality in its annual reports.

Regulating air emissions from industrial operations and from exploration and mining of mineral resources is important to protect Saskatchewan's

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<sup>1</sup> An EcoRegion reflects the natural association of plants, humans, and other organisms together with the non-living components of the environment that are unique to the region.

air quality. An emission is the release of an air contaminant into the atmosphere that contributes to air pollution.

Under *The Clean Air Act (Act)* and *The Mineral Industry Environmental Protection Regulations, 1996*, the Department is responsible to protect Saskatchewan's air quality by regulating air emissions that originate in the Province. The Department regulates emissions by certain industries and mine operations that may release potentially significant sources of air contaminants (e.g. carbon dioxide, sulphur dioxide, benzene). Other sources of air contaminants such as stubble burning and crude oil production are monitored by the Department of Agriculture, Food and Rural Revitalization and the Department of Industry and Resources, respectively.

The Department issues permits to operators of certain industries including exploration of mineral resources. At October 2003, the Department had issued permits to 116 operators. The Environment Assessment Branch of the Department works with the EcoRegions to identify operators that may become sources of significant air contaminants. The EcoRegions then issue permits to those operators and monitor compliance with those permits. Two EcoRegions called Grassland and Parkland are responsible for monitoring almost all operator permits. The Department needs a centralized process to issue permits to industrial operators and to monitor compliance with those permits. In the absence of a centralized process, the EcoRegions may not use consistent practices to issue permits and to monitor compliance with those permits.

The Department must have effective processes to identify operators who need permits and develop the terms and conditions the permits should contain. The Department should then monitor the operators to ensure they comply with the permits and take appropriate action when operators do not comply with the permits.

If the Department does not effectively regulate air emissions, it can lead to poor air quality. Poor air quality harms the environment and human health. Air contaminants make breathing difficult, impair visibility and attack ecosystems.

The Department reports in *The State of the Environment Report* (a public report on Saskatchewan's natural environment and its resources) that air

quality has been consistently good over the last six years. Saskatchewan air quality is good because of the low density of the provincial population and a moderate level of industrial activity.

Recently, the Government of Canada agreed to reduce Greenhouse gas emission (e.g. carbon dioxide, methane, nitrous oxide) levels between 2008 and 2012 by 6% from 1990 levels. Environment Canada requires operators who must meet certain emission limits to report their emissions annually. Environment Canada then reports these emissions publicly. It also reviews emission reports from operators, performs site inspections, and takes action against operators that do not comply. Environment Canada does not share its findings with the Department.

## **Our audit objective and scope**

The objective of our audit was to determine if the Department had adequate processes to regulate air emissions in accordance with *The Clean Air Act* and *The Mineral Industry Environmental Protection Regulations, 1996*.

Our audit covered the Department's systems from April 1, 2002 to October 31, 2003. We did our work in accordance with *The Standards for Assurance Engagements* established by The Canadian Institute of Chartered Accountants.

## **Our criteria**

To assess the adequacy of the Department's processes to regulate air emissions, we used the criteria listed in the Exhibit. We developed the criteria based on our review of relevant literature and best practices. The Department agreed that the criteria are reasonable and attainable. We reported these criteria in our 2003 Report – Volume 3.

**Exhibit**

To regulate air emissions, the Department needs processes to:

1. Issue relevant permits for sources of significant air contaminants
  - ◆ Identify operators that require a permit
  - ◆ Set criteria for permits
  - ◆ Issue approved permits promptly
2. Regularly monitor compliance with permits
  - ◆ Regularly assess compliance with permit terms and conditions
  - ◆ Maintain records of compliance, complaints, and investigations
  - ◆ Enforce compliance with permits
3. Maintain capacity to regulate air emissions
  - ◆ Maintain and use a human resource plan
  - ◆ Use adequate equipment to monitor emissions
  - ◆ Evaluate capacity against needs and take appropriate action
4. Regularly report on air emissions
  - ◆ Collect data
  - ◆ Provide regular operational reports to senior management
  - ◆ Provide regular reports to the industry and the public

**Our conclusion**

We concluded that the Department did not have adequate processes to regulate air emissions. Regulating air emissions is a challenge. To meet this challenge, the Department needs to decide what resources it needs to monitor air emissions. The Department also needs to establish processes to ensure it issues appropriate permits to operators and follows up expired permits. The Department could then establish processes to monitor compliance with permits, handle air emission complaints, maintain information relating to air emissions, and report publicly on air emissions.

We make seven recommendations to help the Department improve its processes.

## Detailed findings and recommendations

We describe below our detailed findings for each criterion. For each criterion, we set out what we expected (in italics), what we found, and any resulting recommendations.

### ***Issue relevant permits for sources of significant air contaminants***

*We expected the Department would have processes to:*

- ◆ *identify operators that require a permit;*
- ◆ *set criteria for permits; and*
- ◆ *issue approved permits promptly.*

The Department has processes to identify operators that may become sources of significant air contaminants. The Department evaluates operators, using an environmental risk assessment process, to determine the potential air contaminants (the hazard) and the area that may be potentially impacted (the exposure). The Department then uses a risk management approach to identify which operators require permits. It does this based on the expected emissions, location, and operators' codes of practices and guidelines. If the hazard, exposure, or a combination of the two is found to be a significant risk, the Department requires the operator to apply for a permit.

Under the Act, the Department can waive a permit for a minor source of air contaminants through a Minister's Order. However, the Department has not established a process to obtain Minister's Orders. We noted many cases where the Department waived permits for operators without obtaining a Minister's Order.

The Department uses industry specific guidelines, national standards, the Act, and *The Mineral Industry Environmental Protection Regulations, 1996* to create the terms and conditions of the permits. However, the Department does not have written guidelines to ensure that staff in different regions treat similar sources of air contaminants consistently. Because the Department does not have guidance on how to set terms and conditions for permits, staff prescribed different terms and conditions for permits for similar sources of air contaminants. Also, staff used

inconsistent permit periods and stipulated inconsistent monitoring and reporting requirements for similar operators.

For example, some permits required operators to provide independent annual testing of air contaminants while other similar operators were not required to do so. Also, none of the permits we examined specified the emission limits. We found other regulators include emission limits in their permits.

To ensure permit terms and conditions are appropriate, the Department requires either a Director of an EcoRegion or the Director of the Environmental Protection Branch to approve permits. However, the Department did not have an adequate process to ensure that only authorized staff approve permits. We found many cases where unauthorized staff approved permits.

The Act requires that the Department ensure operators apply to renew expiring permits. The Department needs to establish processes to ensure expired permits are either promptly renewed or document why renewals are not necessary. Because the Department did not have such a process, we found that the staff did not always ensure that operators promptly applied for renewal of their permits. We also found that the staff routinely extended the expiry dates of old permits without reviewing and assessing the renewal requests.

- 1. We recommend that the Department establish processes to obtain Minister's Orders for waiving permits for minor sources of air contaminants.**
- 2. We recommend that the Department set sound and consistent terms and conditions for permits to regulate air emissions.**
- 3. We recommend that the Department establish processes to ensure permits to regulate air emissions are properly approved and expired permits are followed up promptly.**

Management told us the Department plans to develop a policy to ensure employees obtain Minister's Order for waiving permits for minor sources of air contaminants.



Management also told us the Department will be restructured to create more centralized administrative controls that should result in a consistent approach to setting permit terms and conditions.

In addition, management told us the Department recognizes the need to develop a consistent approach for approval, renewal, and amending permits and that the Department will establish a delegation of authority to ensure permits are approved properly. As well, management told us the Department has identified the need for a central system to help improve the renewal of expired permits.

***Regularly monitor compliance with permits***

*We expected the Department would have processes to:*

- ◆ *regularly assess the operators' compliance with permit terms and conditions;*
- ◆ *maintain records of compliance, complaints, and investigations;*  
*and*
- ◆ *enforce compliance with permits.*

The Department has not established written guidelines to assess operator compliance with permit terms and conditions. Staff, however, carry out some monitoring to assess compliance. This monitoring involves discussing with operators their emission monitoring processes, receiving and reviewing emission reports from operators and/or independent parties, and conducting on-site inspections.

Because the Department has not established and communicated guidelines for monitoring operator compliance with permit terms and conditions, staff monitored compliance inconsistently. For example, in one EcoRegion staff made efforts to inspect each permit operator annually but did not inspect a high-risk operator annually. In another EcoRegion, staff only inspected high-risk operators annually. Also, staff did not always receive and review emission reports promptly and document site inspections. Nor did staff always communicate to operators the results of site inspections.

To ensure prompt and proper monitoring, the Department needs written procedures setting out what information staff should obtain from operators and what procedures they must do during site inspections. Also, the

Department must ensure that staff know what to document for monitoring and inspection work, communicate their findings to operators, and regularly follow up findings.

The Department has processes to record complaints, investigate complaints received, and document the resolution of complaints. The Department requires its staff to investigate complaints promptly. The Department, however, needs to ensure its staff comply with those processes. We found that staff did not always document complaints or inform complainants about what the Department did to resolve the complaint.

**4. We recommend that the Department set sound and consistent processes for monitoring compliance with permits to regulate air emissions and for handling air emission complaints.**

Management told us the Department plans to allocate additional resources to address this recommendation.

***Maintain capacity to regulate air emissions***

*We expected the Department would have processes to:*

- ◆ *maintain and use a human resource plan;*
- ◆ *use adequate equipment to monitor emissions; and*
- ◆ *evaluate capacity against needs and take appropriate action.*

A human resource plan is useful to identify the workforce an agency needs to achieve its strategic goals and objectives. A human resource plan also helps identify the competencies employees need and thus provides a basis for preparing an appropriate employee training plan. The Department has begun to develop a human resource plan. As part of that work, it has documented the competencies needed by employees who regulate air emissions. The Department has not yet assessed whether current employees involved in regulating air emissions have the necessary competencies. As a result, it has not yet determined whether a training plan is needed to obtain those competencies.

The Department does not have its own equipment to monitor air emissions. It relies on the monitoring equipment owned by operators. The

Department obtains independent verification of that equipment. Regulators of air emissions in New Brunswick and Australia told us that they also rely on monitoring equipment of operators. Sometimes, the Department relies on the air modelling that operators or their consultants complete at the time the operators begin operations to project expected air emissions.

To help ensure that the Department has adequate resources, it must document what it wants to achieve and then assess if it has the necessary resources to do so. For example, the Department should document the number of permits it expects to issue and monitor. It should then assess the resources it needs. It also needs to estimate the number of complaints it may have to investigate and the resources it needs. Currently, the Department determines its human resource needs to regulate air emissions by reviewing the historical workload of its employees without estimating its future needs.

**5. We recommend that the Department complete its human resource plan including a plan for employee training to regulate air emissions.**

Management told us the Department has done a preliminary review of staff and identified the need to hire a senior scientist. Management also told us that the Department plans to do a full human resource evaluation upon completion of its current restructuring.

***Regularly report on air emissions***

*We expected the Department would have processes to:*

- ◆ *collect data;*
- ◆ *provide regular operational reports to senior management; and*
- ◆ *provide regular reports to the industry and the public.*

The Department maintains manual records on each of its permit holders. These records are incomplete. For example, the records for many permit holders did not include all inspection reports, records of complaints, and emission reports. Other authorities that regulate air emissions in Ontario, New Brunswick, and Australia maintain relevant information on

databases<sup>2</sup>. Databases allow staff quick access to information on any permit holder (e.g. compliance with terms and conditions, numbers of inspections undertaken, complaints received, and information about past enforcement) that would be helpful to monitor operators and compile reports.

The Department has not established and communicated to staff what operational reports it needs and how often. Nor has the Department set out performance targets for regulating air emissions. Staff provide senior management some information on the activities undertaken to regulate emissions. The information does not include how many site inspections staff did, what they found and action taken.

The Department should require staff to prepare reports indicating how well it is maintaining air quality. Staff should also provide regular information on the number of permits issued, results of monitoring, complaints investigated, and enforcement orders issued. The Department must establish processes to ensure such information is collected, maintained, and available when needed.

The Department's *2002-03 Annual Report* includes some information about regulating air emissions. The Department also discusses air quality in *The State of the Environment Report* (a public report on Saskatchewan's natural environment and resources).

The Department should provide more information to industry and the public. The information should include emission limits set, actual emissions, permitted operators, compliance with permit terms and conditions, investigation of complaints, and the Department's enforcement activities. The information should be timely. We note other regulators such as New Brunswick and Alberta<sup>3</sup> provide such information publicly.

**6. We recommend that the Department establish systems to collect and maintain information to prepare reliable reports.**

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<sup>2</sup> A database is a collection of relevant information in a computer, organized so that it can be expanded, updated, and retrieved rapidly for various uses.

<sup>3</sup> See their web sites at [www.qnb.ca/0009/](http://www.qnb.ca/0009/) and [www.gov.ab.ca/env/](http://www.gov.ab.ca/env/) respectively

**7. We recommend that the Department improve its internal and external reporting on air emissions.**

Management told us that the organizational restructuring currently underway will assist the Department in collecting and reporting air emission information.

## **Our future work plans**

In 2004, we plan to examine the Department's processes to manage the provincial parks. We plan to complete our research and establish criteria to do this work. We will discuss and agree the proposed criteria with the Department and include the criteria in our 2004 Report – Volume 3. In the future, we plan to examine the Department's processes to regulate water quality in Saskatchewan.

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