

Fall 2012



Report of the Commissioner of the Environment and Sustainable Development

CHAPTER 1

Atlantic Offshore Oil and Gas Activities



Office of the Auditor General of Canada

OAG

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Office of the Auditor General of Canada
Distribution Centre
240 Sparks Street
Ottawa, Ontario
K1A 0G6

Telephone: 613-952-0213, ext. 5000, or 1-888-761-5953

Fax: 613-943-5485

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Email: distribution@oag-bvg.gc.ca

Ce document est également publié en français.

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Cat. No. FA1-2/2012-2-1E-PDF

ISBN 978-1-100-21332-3

ISSN 1495-0782

CHAPTER 1

Atlantic Offshore Oil and Gas Activities

Performance audit reports

This report presents the results of a performance audit conducted by the Office of the Auditor General of Canada under the authority of the *Auditor General Act*.

A performance audit is an independent, objective, and systematic assessment of how well government is managing its activities, responsibilities, and resources. Audit topics are selected based on their significance. While the Office may comment on policy implementation in a performance audit, it does not comment on the merits of a policy.

Performance audits are planned, performed, and reported in accordance with professional auditing standards and Office policies. They are conducted by qualified auditors who

- establish audit objectives and criteria for the assessment of performance,
- gather the evidence necessary to assess performance against the criteria,
- report both positive and negative findings,
- conclude against the established audit objectives, and
- make recommendations for improvement when there are significant differences between criteria and assessed performance.

Performance audits contribute to a public service that is ethical and effective and a government that is accountable to Parliament and Canadians.

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Atlantic Offshore Oil and Gas Activities

Main Points

What we examined

Canada's offshore oil and natural gas exploration and development activities in the Atlantic region are regulated by the Canada–Newfoundland and Labrador Offshore Petroleum Board and the Canada–Nova Scotia Offshore Petroleum Board. The boards are joint federal–provincial bodies. Their core regulatory responsibilities include safety, protection of the environment, and management and conservation of petroleum resources.

The boards are responsible for managing significant environmental risks associated with offshore oil and gas activities. According to the governing legislation, offshore operators are required to respond to spills. However, if the operator cannot or does not take appropriate measures, the board may lead the response to a major spill. The boards may seek support from federal parties, including the Canadian Coast Guard, Environment Canada, Transport Canada, and Natural Resources Canada.

We examined how the boards are managing the environmental risks and impacts associated with offshore oil and gas activities. Our audit work included the boards' procedures for assessing and authorizing offshore petroleum projects; ensuring compliance with environmental requirements; and preparing for and responding to spills. The boards work with the federal departments of Natural Resources, Environment, Transport, and Fisheries and Oceans, including the Canadian Coast Guard. We also looked at the advice and support those departments provide to the boards. Our audit did not include any provincial organizations or private sector operators.

Audit work for this chapter was completed on 24 August 2012. More details on the conduct of the audit are in **About the Audit** at the end of this chapter.

Why it's important

Marine ecosystems in Atlantic Canada are biologically diverse, providing critical habitat for species at risk and migratory birds in locations such as the Grand Banks, Sable Island, and The Gully Marine Protected Area. The offshore regions are also a vital part of the country's economy, providing employment for thousands of people and supporting activities such as aquaculture and fisheries, tourism and recreation, and shipping and transportation.

The potential impacts of an offshore oil spill in Atlantic Canada, such as seen in the Gulf of Mexico in 2010, could be widespread and devastating to the environment, industry, and the livelihoods of many Canadians. As a result, it is essential that the offshore petroleum boards manage the risks and impacts associated with the oil and gas activities they regulate.

What we found

- The boards have applied some good practices when assessing and approving offshore projects and activities, such as seeking input from key stakeholders. However, the boards have not yet established or updated their policies and procedures to guide environmental assessments, nor are they systematically tracking the measures to prevent or reduce environmental impacts. It will be important for the boards to determine how they will meet the objectives of their governing legislation to protect the environment, given the changes introduced by the new *Canadian Environmental Assessment Act, 2012*.
- The boards have taken adequate steps to ensure that offshore operators comply with environmental requirements. More remains to be done to implement risk-based audits of the operators' management systems, and to establish more formal arrangements for obtaining independent observations of offshore oil and gas activities.
- The boards have managed the current environmental impacts associated with oil and gas activities in Canada's Atlantic offshore areas in a manner consistent with the existing size and scale of operations. However, if a board were to take over the response to a major oil spill, the board and the federal entities that might contribute to the response efforts are not adequately prepared to play this role.
- Specifically, we found that the response plans of the boards and the federal entities are not coordinated and are sometimes inconsistent; the boards and federal entities have not tested or exercised their collective plans or collective capacity; and several memoranda of understanding are either out of date or not in place. In addition, the Newfoundland–Labrador Board has not yet completed the assessment of the operators' spill response capabilities that it began in 2008.

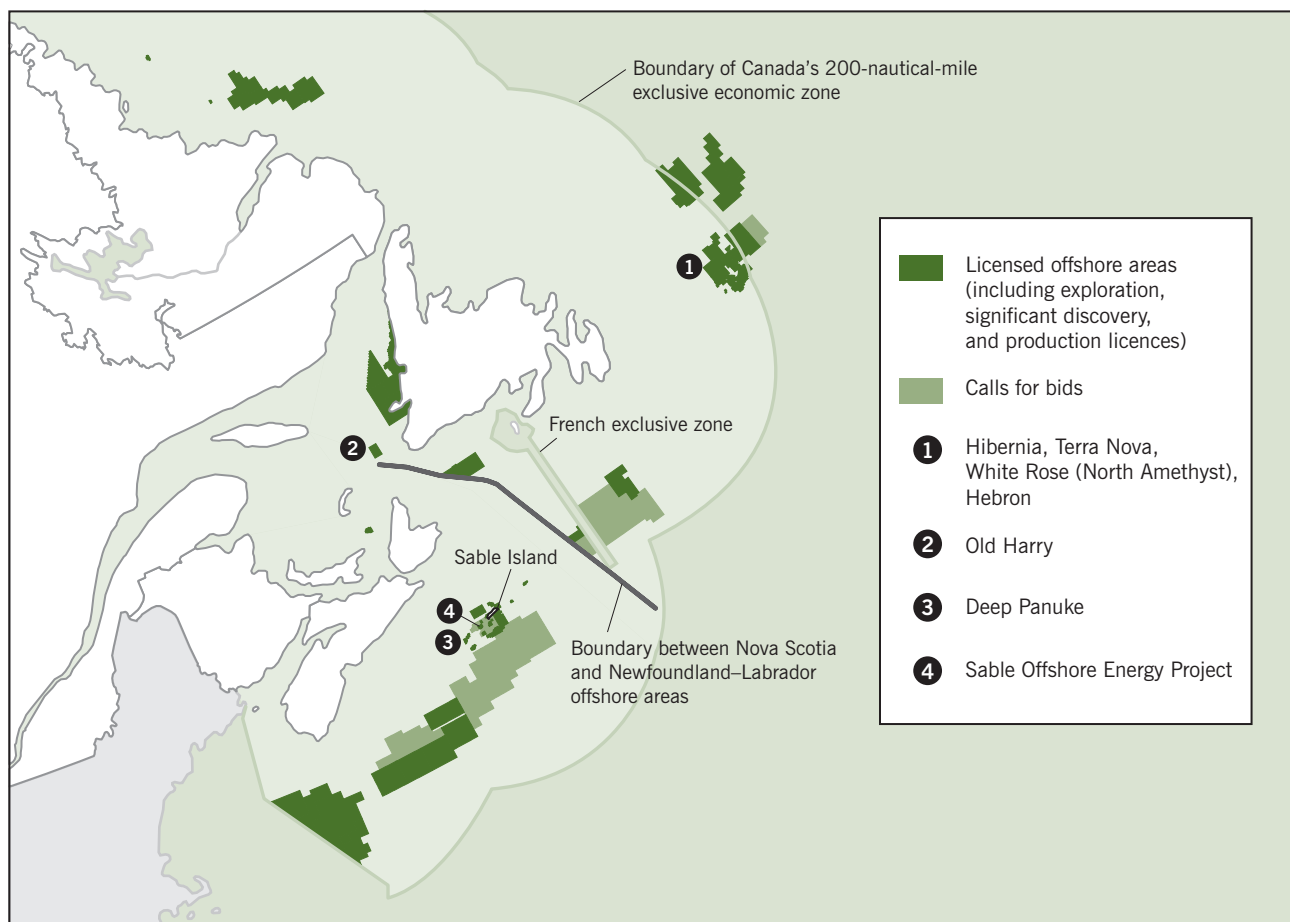
- Unlike the Newfoundland–Labrador Board, the Nova Scotia Board does not currently regulate activities that produce oil. It expects exploration for oil within its jurisdiction in the near future, and so has work to do to prepare for this.

The entities have responded. The entities agree with our recommendations. Their detailed responses follow the recommendations throughout the chapter.

Introduction

1.1 The offshore oil and gas industry has contributed significantly to the economy of Atlantic Canada. The first offshore well in Atlantic Canada was drilled in 1943, off the coast of Prince Edward Island. Subsequent exploration activity has concentrated on the continental shelf offshore from Nova Scotia and from Newfoundland and Labrador. These efforts found natural gas south of Sable Island in the areas off Nova Scotia in 1969, and oil in the Hibernia field off Newfoundland in 1979. Production of oil began from the Cohasset-Panuke field in 1992 and from the Hibernia field in 1997. Exploration licences are now in place for several areas of Atlantic Canada, including the Gulf of St. Lawrence, the west coast of Newfoundland, and deeper water on the edge of the continental shelf off both Newfoundland and Nova Scotia (Exhibit 1.1).

Exhibit 1.1 Oil and gas activities take place in many areas in the Atlantic offshore



Sources: Adapted from publications of the Canada–Newfoundland and Labrador Offshore Petroleum Board and the Canada–Nova Scotia Offshore Petroleum Board

1.2 Several private sector companies have conducted operations in the Atlantic offshore, including seismic surveys and exploratory drilling. These operators have drilled more than 370 wells in the regions offshore from Newfoundland and Labrador, yielding discoveries of both oil and natural gas. Only oil has been commercially produced so far. Four projects account for the current production: Hibernia, Terra Nova, White Rose, and North Amethyst (a satellite of White Rose). Together, the four projects produced nearly 100 million barrels of oil in 2011.

1.3 In the areas offshore from Nova Scotia, operators have drilled more than 200 wells, resulting in the production of oil and natural gas. In 2011, about 2.8 billion cubic metres of natural gas was produced, all from the Sable Offshore Energy Project. The Deep Panuke project is currently expected to begin natural gas production in 2013.

1.4 Production has brought economic benefits. As provided for in the governing legislation, the federal government receives all royalties and other specific revenues generated by offshore oil and gas activity, and then transfers to the two provinces amounts equal to what it receives. For the 2010–11 fiscal year, the federal government received \$225.6 million in royalties and other revenue from oil and gas activity in the areas offshore from Nova Scotia, and \$1.24 billion from activity offshore from Newfoundland and Labrador. The federal government then transferred to the two provinces amounts equal to what it received. At the end of 2010, offshore projects employed 306 people in Nova Scotia and 4,051 in Newfoundland and Labrador. The projects also yielded indirect economic benefits in many different sectors.

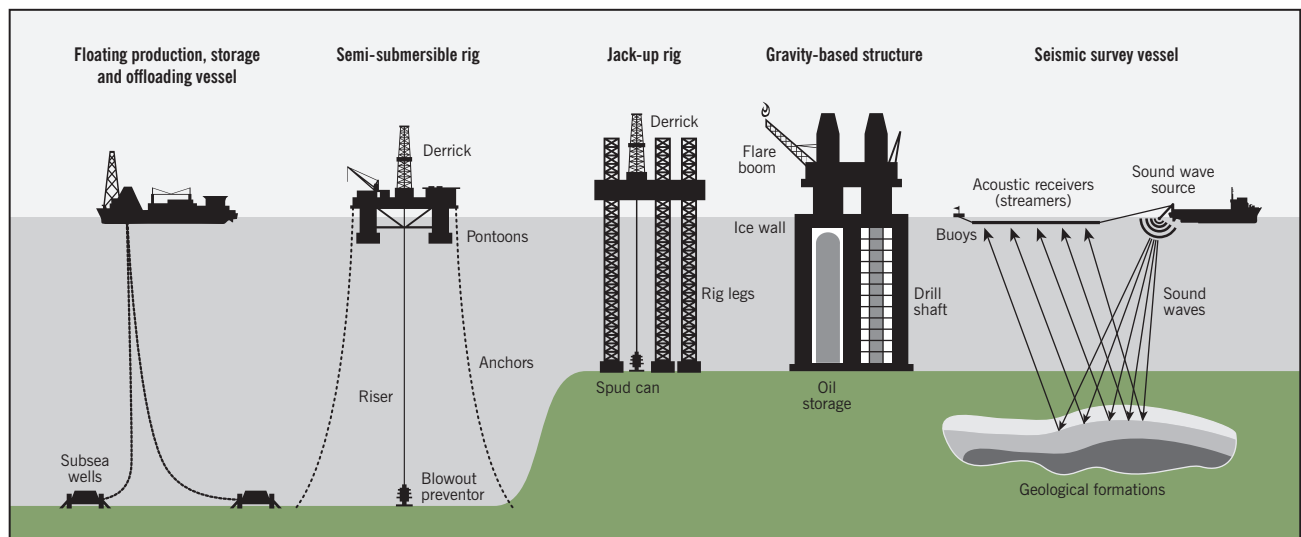
1.5 Offshore oil and gas activities may have various impacts on the environment (Exhibit 1.2). For example, seismic surveys to identify possible drilling locations may generate underwater noise many times higher than normal ambient levels, and may take place over thousands of kilometres, possibly affecting whales, other marine mammals, and smaller organisms that may be nearby. Drilling and extraction activities generate waste, such as **drill cuttings** and **produced water**, both of which may contain hydrocarbons. During production, the practice of flaring (burning off natural gas) releases greenhouse gases and other air pollutants. There may also be accidental impacts, such as oil spills, which may harm seabirds and fish, and could affect the fishing industry and coastal areas.

Drill cuttings—Particles that are generated by drilling beneath the seabed and carried to the surface with drilling fluids.

Produced water—Water associated with oil and gas reservoirs, extracted along with the oil and gas. At most offshore production sites, the water is separated from the petroleum, treated, and then discharged to the marine environment or disposed of below the ocean floor.

1.6 Past incidents in Canada and elsewhere highlight the safety and environmental risks involved in offshore oil and gas production, as well as the need for effective regulation. In 1982, 84 workers died when the *Ocean Ranger* (a semi-submersible rig) capsized off the coast of Newfoundland. The 2010 Macondo (*Deepwater Horizon*) blowout and spill in the Gulf of Mexico killed 11 workers and was headline news around the world, focusing attention on the economic and environmental damage from a major incident. In 2012, workers took close to two months to stop a blowout at the Elgin gas well in the North Sea offshore area of the United Kingdom. Companies operating off Canada's Atlantic coast must also cope with a highly challenging environment; compounding the technical and geological risks are icebergs, fog, severe weather, and fields that are far offshore.

Exhibit 1.2 Oil and gas drilling operations may lead to environmental impacts



Accidental impacts

- Oil spills
- Chemical spills
- Gas releases
- Dropped objects
- Collisions

Operational impacts

- Solid and liquid wastes (including sewage, drainage, and dust)
- Muds, cuttings, and sediments
- Discharges of cooling water, ballast water, brines, and drilling chemicals
- Air emissions from power generation, ventilation exhaust, fuel, and chemical storage
- Flaring
- Noise and light
- Disturbance of seabed and rock dumping

Source: Adapted from the OSPAR Commission and environmental assessments

The key players

1.7 Since 1986, the Canada–Newfoundland and Labrador Offshore Petroleum Board has regulated oil and gas activities in areas offshore from Newfoundland and Labrador. Since 1990, the Canada–Nova Scotia Offshore Petroleum Board has performed the same function in the areas offshore from Nova Scotia. Each board was established through mirror legislation in the provincial and federal legislatures. (We refer to them together as the boards and individually as the Newfoundland–Labrador Board and the Nova Scotia Board.) They operate independently of the two levels of government, except when ministers review certain decisions prescribed in legislation.

1.8 At the federal level, the enabling legislation is the *Canada–Newfoundland Atlantic Accord Implementation Act* and the *Canada–Nova Scotia Offshore Petroleum Resources Accord Implementation Act*. (We refer to these together as the Accord Acts.) The two jurisdictions have similar regulations under the Accord Acts, and the boards have worked together to develop shared guidelines for the industry they regulate. (The National Energy Board, an independent federal agency, regulates the offshore industry in other parts of Canada, including the Arctic.)

1.9 Under the Accord Acts, the boards' core regulatory responsibilities include safety, protection of the environment, and conservation of petroleum resources. The boards have indicated that they place the highest priority on safety and environmental protection.

1.10 For each board, the federal and concerned provincial government independently appoint an equal number of the board members, and jointly appoint the board's chair. Each board is funded equally by the federal and concerned provincial government. The Nova Scotia Board received a total of \$6.8 million from the federal and provincial governments in the 2011–12 fiscal year and has 39 people on staff. The Newfoundland–Labrador Board received \$14.9 million in 2011–12 and has 72 people on staff.

1.11 Several federal departments and agencies have responsibilities related to those of the boards, in particular for environmental protection in offshore areas. They include

- Natural Resources Canada,
- Environment Canada,
- Transport Canada, and
- Fisheries and Oceans Canada (including the Canadian Coast Guard).

1.12 The federal Minister of Natural Resources, with his provincial counterparts, has overall responsibility for the two boards. The other departments included in this audit provide support only. Transport Canada has regulatory responsibility for marine safety, including Canada's marine oil spill response regime in the case of spills from ships, but does not have any responsibility to respond to spills from offshore facilities. The Canadian Coast Guard has a mandate to respond to spills from ships, but not from offshore facilities. It could provide resources in the case of a spill from an offshore oil and gas facility. Environment Canada and Fisheries and Oceans Canada, among other things, provide scientific advice to the boards. Environment Canada also chairs the Regional Environmental Emergencies Team, an interagency team that brings together experts to provide a single source of advice.

1.13 This is the first time that the Commissioner of the Environment and Sustainable Development has audited either of the offshore petroleum boards. However, we have conducted other audits related to environmental issues in offshore regions. In the 2010 Fall Report of the Commissioner of the Environment and Sustainable Development, Chapter 1, we reported on the management regime in place to respond to oil spills from ships. The present report contains two related chapters: Marine Protected Areas and Financial Assurances for Environmental Risks.

Focus of the audit

1.14 In July 2011, a federal order-in-council requested that the Auditor General of Canada conduct a performance audit of the Canada–Newfoundland and Labrador Offshore Petroleum Board and the Canada–Nova Scotia Offshore Petroleum Board, and report matters of significance to the House of Commons.

1.15 Our objective was to determine whether the offshore petroleum boards, along with other federal parties, have managed the environmental risks and impacts of offshore oil and gas activities according to applicable legislation, regulations, directives, good practices, and agreements with other players.

1.16 Our audit focused on how the boards

- assess and monitor the potential environmental impacts of proposed oil and gas activities;
- ensure compliance with environmental requirements; and
- prepare for and respond to spills, in collaboration with other parties.

1.17 We looked at selected federal departments with environmental responsibilities related to those of the boards; we did not look at any provincial entities or provincial responsibilities, or at private sector operators. We also excluded occupational health and safety issues. However, we recognize that some unforeseen events may give rise to environmental as well as health and safety issues. We considered such events, as appropriate.

1.18 More details on the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendations

Assessing and approving proposed activities

1.19 To minimize the environmental impacts due to offshore oil and gas activities, the Canada–Nova Scotia Offshore Petroleum Board (the Nova Scotia Board) and the Canada–Newfoundland and Labrador Offshore Petroleum Board (the Newfoundland–Labrador Board) assess the potential environmental impacts and set requirements for preventing or reducing them. The two boards follow similar steps in reviewing and approving or authorizing offshore activities (Exhibit 1.3). Most of these steps are required under their enabling legislation, environmental assessment legislation, and associated regulations.

1.20 In July 2012, Parliament replaced the *Canadian Environmental Assessment Act* with new legislation. This change came during our audit and affected how the boards are supposed to consider environmental impacts. Under the previous legislation, the boards were required to conduct assessments on a range of activities that included seismic surveys as well as exploratory wells and offshore production facilities. Under the new *Canadian Environmental Assessment Act, 2012*, and the associated regulations, only production projects are currently required to undergo assessment, and the Canadian Environmental Assessment Agency will lead these assessments.

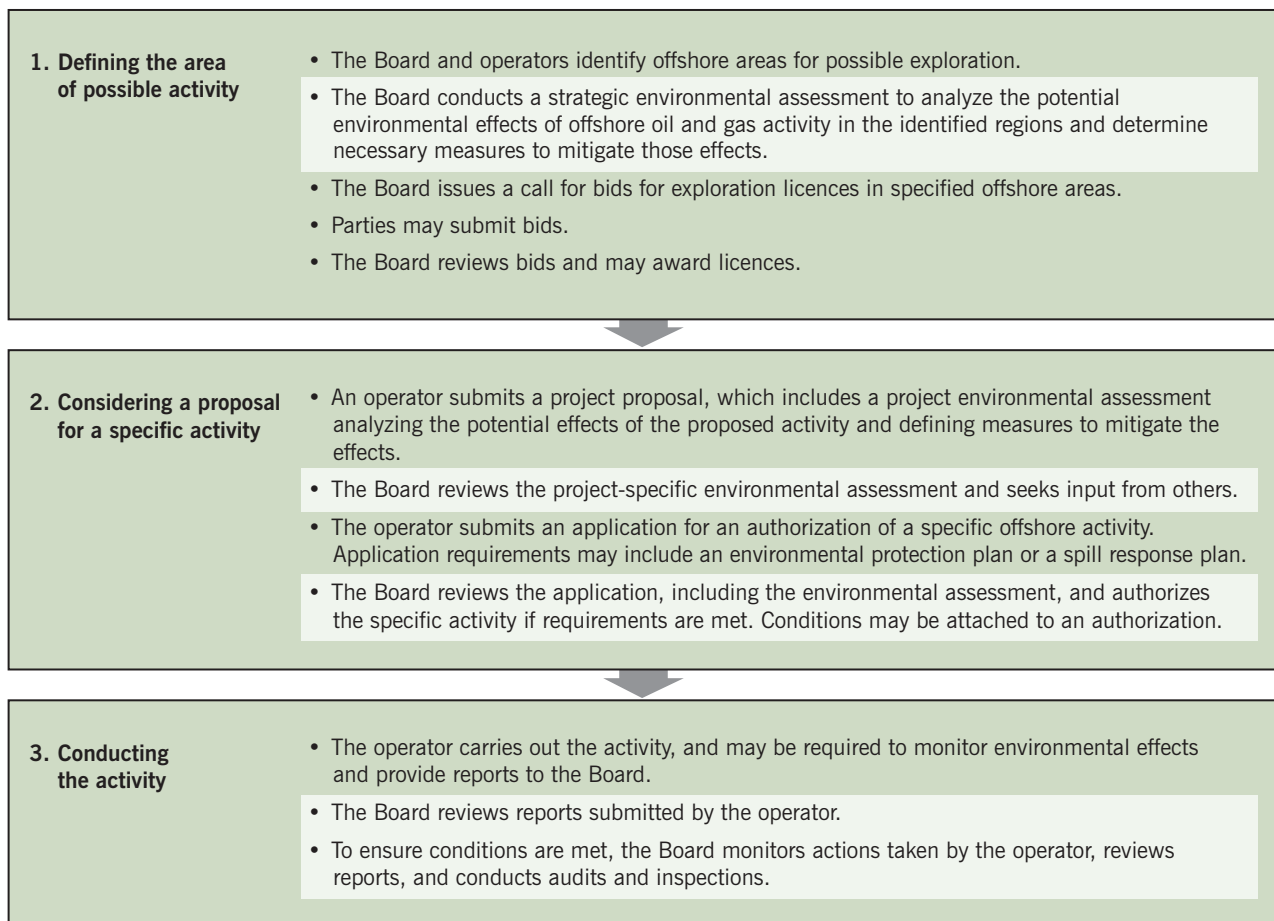
1.21 The boards continue to be responsible for environmental protection under their enabling legislation (the *Canada–Nova Scotia Offshore Petroleum Resources Accord Implementation Act* and the *Canada–Newfoundland Atlantic Accord Implementation Act*, referred to here as the Accord Acts). The boards have indicated that, in the short term, they plan to apply environmental review processes similar to those required under the old environmental assessment legislation. Four assessments begun under the old legislation are now being continued under the Accord Acts. In addition, under the *Canadian*

Environmental Assessment Act, 2012, the boards are responsible for assessing projects on federal lands when they have a decision in relation to those projects. The new Act also provides for designated projects begun under the former legislation to be completed by the boards. The Newfoundland–Labrador Board is continuing with two such projects, one of which is described in Exhibit 1.4.

1.22 To determine whether the environmental effects of proposed offshore oil and gas activities were appropriately considered, we examined the following steps taken by the boards:

- conducting strategic environmental assessments,
- reviewing project environmental assessments, and
- reviewing applications for authorizations.

Exhibit 1.3 The boards follow well-defined steps when reviewing and approving offshore activities



Note: This is a simplified version of the actual process. This chapter considers highlighted steps in more detail.

Exhibit 1.4 The environmental assessment for Old Harry will continue

In the Gulf of St. Lawrence, the Old Harry formation is a focus of current exploration interest. In 2008, the Newfoundland–Labrador Board granted a licence for exploration activity, and then launched an environmental assessment process for exploratory drilling in February 2011.

Five Canadian provinces have coasts on the Estuary or Gulf of St. Lawrence. This is one of the largest and most productive marine ecosystems in the world. It is also important economically, being used intensively for fisheries and recreation and as a major transportation route. The Board has noted the high level of public concern about the environmental impacts of offshore petroleum activities in this area.

The Old Harry environmental assessment is being continued, although exploratory drilling is not subject to an assessment under the new *Canadian Environmental Assessment Act, 2012*. The Minister of the Environment designated the environmental assessment of this project for completion. As of the end of our audit, the assessment by the Board was still in progress.

The boards assess environmental impacts at regional and project levels

1.23 Strategic environmental assessments. The boards themselves conduct strategic environmental assessments. This type of assessment is a tool that contributes to informed decisions by incorporating environmental considerations into the development of public policy and strategic decisions. The offshore boards have applied the tool to analyze broad geographic areas, and to identify areas or components of the environment that are particularly sensitive and should be avoided or protected by using mitigation measures. Assessments may also identify key information gaps. The results can reduce the time and effort required to assess project-specific environmental effects, which operators do later in the approval process.

1.24 According to international practices and guidance prepared by the Canadian Environmental Assessment Agency, a strategic environmental assessment should include

- examination of alternatives to the proposed plan or program,
- effective public participation, and
- consideration of environmental information early enough to influence decision making.

1.25 At the end of our audit, the Newfoundland–Labrador Board had completed six strategic assessments covering all of the major offshore areas, and had amended one assessment and was also updating it. The Nova Scotia Board had completed assessments for four areas (one in conjunction with the Newfoundland–Labrador Board) and was conducting two new assessments.

1.26 We found that the boards have applied some good practices. For example, the boards sought input from key stakeholders, including federal departments and the public. We noted, however, that there were some weaknesses. For example, the final strategic environmental assessment did not always incorporate the input from federal experts. Further, in all four cases we examined, the boards issued a call for bids before the assessment was completed. In one of these cases, the responsible board awarded exploration licences before the assessment was finished. Although the boards took some steps to communicate preliminary results, potential bidders did not always have complete information about the environmental constraints and required protection measures until near the end of, or after, the bid preparation process.

1.27 Recommendation. To maximize opportunities for protecting the environment and to ensure that potential project proponents have the environmental information to make appropriate decisions, the boards should ensure that the results of up-to-date strategic environmental assessments are available prior to issuing a call for bids.

The boards' response. Agreed—in principle. The boards have in place processes that maximize opportunities for protecting the environment and disseminating environmental information while also ensuring the fairness and efficiency of the rights issuance regime.

The boards' practice regarding strategic environmental assessments (SEAs) is to ensure that the results of up-to-date SEAs are known either ahead of the issuance of a call for bids, or sufficiently in advance of the closing of a call for bids and ahead of irrevocable decisions that would be taken by bidders and by the boards.

With respect to the Nova Scotia Board, this practice is based on joint policy direction by the federal and Nova Scotia governments. The Newfoundland–Labrador Board has no such restriction.

Consistent with the recommendation, the boards plan to maintain current SEAs in areas where there is the most potential for petroleum exploration and where future calls for bids are most likely.

If there is not an SEA (or updated SEA) available at the time of a call for bids, the call document would state that, ensuring full transparency of the process. In addition, the call would be made without prejudice to the environmental assessment process. The issuance of an exploration licence by the Board is also subject to fundamental decision approval by the federal and respective provincial governments.

1.28 Project environmental assessments. Operators conduct project environmental assessments. This type of assessment is recognized internationally as an effective way for decision makers to minimize environmental impacts. Once individual projects are proposed for a specific location, the boards require operators to assess the expected environmental effects. The boards treated the different phases and steps of offshore oil and gas developments as separate projects. We observed that of the 54 assessments performed since 2003, 3 were detailed analyses of major projects (comprehensive studies) and the remainder were screenings of the possible environmental effects, mainly related to seismic surveys.

1.29 We conducted interviews and examined documents on selected project environmental assessments undertaken since 2003 to determine whether the boards appropriately considered the possible impacts of proposed projects and the significance of adverse environmental effects. For example, the boards are not supposed to approve any proposal until the required project environmental assessment is finished. We found that, as required, the boards reviewed and approved project environmental assessments before approving the projects. They also coordinated the review by appropriate federal departments, held appropriate consultations, and identified mitigation measures and monitoring programs. However, both boards lack up-to-date and approved policies and procedures for guiding their review of project environmental assessments. Given the new legislation that came into force in July 2012, such policies and procedures will be particularly important as the boards reconsider how they will review project environmental impacts.

1.30 We found that both strategic and project environmental assessments identified some information gaps—for example, related to the effects on seabirds from drilling and operating wells (Exhibit 1.5), the effects of seismic surveys, and the effects of trace contaminants in produced water. Although some research is under way, incomplete scientific research and information in these areas could limit the ability of a range of organizations to assess and monitor environmental effects.

1.31 The ability of the federal government to address some of these information gaps may be affected by changes at a key government research centre within Fisheries and Oceans Canada: the Centre for Offshore Oil, Gas and Energy Research. The Centre coordinates nationwide research into the environmental and oceanographic impacts of offshore petroleum exploration, production, and transportation. Fisheries and Oceans Canada has indicated that the Centre's in-house research on the biological effects of oil and gas will be phased out.

Exhibit 1.5 The effects of offshore projects on seabirds need to be better understood

Many species of seabirds are protected under the *Migratory Birds Convention Act, 1994*, but seabirds may be killed or injured when they are attracted to offshore oil and gas platforms by increased food availability, lights, or natural gas flares. Seabirds are sometimes also exposed to oil sheens from operational discharges or spills. Studies have shown that oil-fouled feathers affect the buoyancy of birds and their ability to regulate their body temperature when swimming in cold water, with a possible result of death by hypothermia or starvation. In addition, ingested oil can impair the functioning of birds' internal organs.



Leach's storm-petrel

Photo: John Chardine, Environment Canada

Some offshore operations are located in critical feeding areas for certain migratory species, including Leach's storm-petrel, and diving auks such as dovekies and murre. Experts have pointed to the need for more research to estimate the effects on birds of light attraction, flaring, oil sheens, and fouling of feathers by substances that are discharged during drilling and production, such as synthetic drilling fluids.

1.32 Recommendation. The boards should work with their federal partners, including Environment Canada and Fisheries and Oceans Canada, to identify and address the key information gaps in strategic and project environmental assessments.

The boards' response. Agreed. The boards will continue to identify priority areas of research in cooperation with federal departments and agencies and other stakeholders. This would be for targeted research by government departments and agencies, through initiatives such as the Environmental Studies Research Funds and the Program of Energy Research and Development, and through a wider body of domestic and international work in specific areas. This will be done on an ongoing basis.

Environment Canada's response. Agreed. Environment Canada will work with the boards to determine key information gaps in strategic and project environmental assessments.

Fisheries and Oceans Canada's response. Agreed. Fisheries and Oceans Canada will continue to support the boards by providing expert advice during the environmental assessment of projects according to their memoranda of understanding and the Department's mandate.

1.33 Authorizations. The boards issue authorizations for activities, including seismic surveys, and drilling and production operations. Between January 2010 and June 2012, the Nova Scotia Board issued 6 such authorizations and the Newfoundland–Labrador Board issued 14.

Environmental protection plan—A plan outlining the key environmental requirements for drilling or production operations, including allowable limits of contaminants in produced water, acceptable methods for disposing of drill cuttings, and a list of the chemicals that can be used.

Depending on the activity to be authorized, requirements for additional information could include an **environmental protection plan**, a spill response plan, or plans for other environmental measures, such as procedures for controlling discharges of oil. We assessed whether the boards checked that operators had supplied the necessary environmental information for authorization applications. We examined the summary files associated with all authorizations from this time period pertaining to drilling, production, and geophysical activities for both boards. We found that these records indicated that the applications contained all the required environmental information.

1.34 Under the regulations governing Atlantic offshore petroleum drilling and production, applicants for some authorizations must submit an environmental protection plan to the responsible board. The plan contains the commitments made by the operators, and may be subject to audits or inspections by the board. We examined all current environmental protection plans and found that they were up to date or being revised, and that, in combination with other documents, they contained all of the key components required by the regulations.

Monitoring environmental impacts

1.35 According to the *Canadian Environmental Assessment Act*, the *Accord Acts*, the *Species at Risk Act*, and various regulations, guidance, policies, and procedures, the boards need to ensure that monitoring and follow-up programs are implemented for approved project environmental assessments and authorizations. We assessed three categories of monitoring resulting from these requirements:

- follow-up programs to track the requirements for mitigation measures and monitoring for approved projects, and to verify that these requirements were implemented;
- systematic environmental effects monitoring programs to compare predicted impacts with the observed impacts; and
- programs to measure the impacts on species at risk.

The boards do not systematically track environmental assessment mitigation and follow-up measures

1.36 According to environmental assessment legislation, follow-up programs are intended to verify the accuracy of environmental impact predictions and to determine the effectiveness of any mitigation measures. We selected 11 project environmental assessments, focusing on a range of project types and those most recently approved by the boards, to see how the mitigation and monitoring requirements were implemented.

1.37 For some projects, such as drilling wells, the mitigation measures are described in detail in the environmental protection plan. For other projects, such as seismic surveys, mitigation measures appear in several places, including in environmental assessments, as conditions on authorizations, or in correspondence with operators. Based on the files and other information, we found that neither board had procedures to systematically track what mitigation and follow-up measures were required.

1.38 We also looked at how the boards tracked implementation of the mitigation and follow-up measures over time. As their main source of information about the implementation of mitigation measures, the boards rely on the daily, weekly, and monthly reports received from the operators. These reports include a variety of measurements but do not always link the measurements to the mitigation measures. As a result, the boards are not systematically tracking whether and how well the operators have implemented mitigation measures.

Environmental effects monitoring programs help advance understanding of the impacts of offshore oil and gas activities

1.39 Environmental effects monitoring programs can be valuable tools for measuring the environmental effects of offshore oil and gas activities, testing the predictions of the project environmental assessments, identifying emerging concerns, and, if appropriate, improving mitigation measures. Based on reviews of the operators' environmental assessments of each of the major offshore projects, the boards have required operators to establish programs that systematically monitor the environmental effects of their activities. Monitoring may also be required to track long-term effects after a spill.

1.40 We examined whether the boards had ensured that the operators designed and executed their environmental effects monitoring programs appropriately. This included ensuring that

- the programs measured the appropriate components of the environment,
- the program design was scientifically sound, and
- there were appropriate quality controls.

1.41 We noted that the operators at different offshore facilities are tracking different combinations of environmental components, based on the location of the facilities. For example, all of them measure toxic substances in produced water, but they monitor different fish and shellfish species depending on the abundance and commercial

importance of those species in the project area. In Nova Scotia, the monitoring programs track seabirds and marine mammals. In Newfoundland and Labrador, however, similar monitoring efforts are not part of the environmental effects monitoring programs. Instead, two of the three operators of major projects monitor marine wildlife by using observers aboard offshore platforms and vessels. Work by Environment Canada also contributes to understanding of the projects' effects on marine migratory birds.

1.42 We found that board staff and experts from the federal government and other agencies examine whether the operators have designed and implemented their environmental effects monitoring programs appropriately, and whether reporting is accurate. The boards rely on the input and expertise of the federal experts to ensure program quality. We examined the comments received for four projects (one for Nova Scotia, and three for Newfoundland and Labrador) and found that the experts were satisfied with the quality of the monitoring programs for three of them. In one program, the experts raised significant concerns, particularly about the quality of the monitoring of seabirds and fish habitat. The board considered this advice in its final approval of the environmental effects monitoring reports.

1.43 Regular review of the monitoring results by the boards, departmental experts, and other specialists can help in evaluating the adequacy of regulations, guidelines, and conditions attached to authorizations. Regular review can also help ensure that operators work toward continuous improvement based on new scientific information. We found that the results from the monitoring programs were used to adjust the programs for subsequent years, to help design monitoring programs for new projects, and to help develop revisions to guidelines. An up-to-date and accurate understanding of the effects of offshore oil and gas activities is necessary so that environmental assessments and authorization reviews focus on the most important issues.

1.44 The boards have worked with the operators to make some of the methods and results of monitoring programs publicly available, but results from some operators' monitoring programs are not generally accessible. The Accord Acts place some constraints on what information can be released and when. In our view, improved accessibility would help ensure scientific credibility and promote public understanding of the actual impacts of offshore oil and gas operations.

Full public access would also improve the ability to share lessons between projects and between boards, and would facilitate research by government, industry, and academia.

1.45 Recommendation. The boards should work with the operators to improve the transparency, accessibility, and utility of the environmental effects monitoring programs and the results obtained. This should include facilitating continuous improvement and collaborative research involving industry, government, and academia, with the aim of improving understanding of the effects of oil and gas activities on the offshore environment.

The boards' response. Agreed. The Newfoundland–Labrador Board currently publishes the results from environmental effects monitoring programs on its website. It will continue to work with operators and government agencies and external reviewers to ensure that the programs remain transparent and relevant. Subject to the cited constraints of the Accord Acts, the Nova Scotia Board will seek the cooperation of relevant parties to implement this recommendation.

Responsibilities for monitoring species at risk need clarification

1.46 The federal *Species at Risk Act* requires the boards to ensure that measures are taken to monitor the adverse effects of offshore projects on species listed under the Act and on their critical habitat. In the offshore area, the species concerned are mainly seabirds (such as the ivory gull), fish (such as the Atlantic wolffish), marine mammals (such as the North Atlantic right whale), and turtles (such as the leatherback turtle). Monitoring is required regardless of the significance of the adverse effects and is required for all wildlife species listed under the Act.

1.47 We found that species at risk are currently being monitored under other monitoring programs, such as those intended to avoid impacts on marine mammals from seismic surveys, or the seabird and marine mammal observation programs (see paragraph 1.41). However, neither board has policies and procedures in place related to their obligations under the *Species at Risk Act*. A clear set of such procedures is now especially important with the new environmental assessment legislation, given the boards' roles as federal authorities and their responsibilities regarding federal lands.

Ensuring compliance with environmental requirements

1.48 As the regulators for oil and gas activities, the boards need to ensure that operators comply with environmental requirements. To guide their oversight of operator compliance, both boards have policies based on the Accord Acts and regulations. The policies describe the roles, responsibilities, authorities, and tools used by the boards. The boards assess compliance by conducting audits and inspections and by reviewing operators' reports. If there are concerns about non-compliance, the boards may formally investigate and take other steps (see paragraph 1.61). We examined these activities to assess whether the boards were taking adequate steps to ensure compliance with environmental requirements.

The boards have not yet fully aligned their audit programs with goal-oriented regulations

1.49 At the end of December 2009, revised regulations governing drilling and production introduced a shift from prescriptive to goal-oriented regulation. Instead of specifying which technical requirements should be met and how, the regulatory guidance specifies the environmental goals that the operators are required to meet, and the operators determine how they will meet them. The new regulations are intended to give operators greater flexibility and to support innovation and continuous improvement. This shift influences how the boards determine whether operators are in compliance and how they respond to situations of non-compliance.

1.50 The boards use audits as one way to verify that an operator's operating procedures and management systems achieve continuous compliance. In addition, board staff may conduct inspections, involving the presence of a board officer during operations, to confirm that regulatory requirements are met and to support audit findings.

1.51 A shift from prescriptive to goal-oriented regulations will typically lead to changes in audit approaches. For example, operators applying to the boards for drilling and production authorizations for offshore activity are now required to have a management system in place, with documented policies and procedures for carrying out their activities in compliance with environmental requirements. We found that board employees review the operator's environmental protection plans to ensure that management systems are in place. The commitments in the operators' environmental protection plans also provide a basis for audits and inspections.

1.52 Both boards have begun to conduct audits that examine management systems. Their policies suggest a goal of one such audit

per operator per year. However, the Newfoundland–Labrador Board has not met this goal. In the case of the Nova Scotia Board, it is too soon to make this assessment, since it just finalized its policy in March 2012. The boards’ policies and procedures do not distinctly define management system audits. It is therefore difficult to distinguish such audits, which check for the presence of appropriate systems, from inspections, which check for compliance with technical requirements. When we looked at the audits and inspections completed since 2009 at both boards, we found that they tended to be based on prescribed requirements rather than on how well management systems were working. The boards have taken steps to strengthen their audit functions with this in mind.

1.53 Given the number of employees available at both boards to conduct audits and inspections, the boards need to identify audits carefully so that they focus on key risk areas, such as poor compliance history. We found that the boards select audits and inspections based on professional judgment, but that neither board has a documented or systematic process for identifying which aspects of which operations should be audited based on specific risks. In our view, systematic audit planning is important given the shift to a goal-oriented regulatory environment, particularly if exploration and development activities in the region increase.

1.54 Recommendation. Each board should establish a systematic process to prepare an annual risk-based audit plan and use it to implement audits of operators’ management systems in keeping with board policies.

The boards’ response. Agreed. The boards will incorporate a risk classification matrix into their current auditing and inspection policies and procedures to further strengthen the systematic manner in which annual risk-based audit plans are developed. This will be done commensurate with the scale of offshore operations within the respective jurisdictions.

The boards rely on operator reports to assess compliance

1.55 To demonstrate compliance with regulatory requirements, operators are required to submit reports detailing the status of their work programs as well as to report on sampling and testing results. As noted earlier, board employees indicated that their review of the operators’ daily, weekly, and monthly reports is a primary method to assess compliance. We noted in paragraph 1.37 that the boards did not have a systematic procedure to guide their review of operators’ reports,

making it difficult to evaluate compliance with mitigation and monitoring requirements. We examined two further aspects of how the boards used reports from operators to assess compliance: whether the boards received and reviewed the required annual environmental reports, and how the boards tracked information about spills.

1.56 Annual environmental reports. For each offshore production project, operators are required to provide an annual environmental report that summarizes environmental matters for the year. We found that operators submitted the reports as required, with the required content. The reports supplied information about spills, for example, along with extensive information collected from weather and wave monitoring. The boards give operators guidance about what the annual reports should contain. However, the boards have not used the reports as opportunities to help focus the operators' management systems on key environmental issues or to promote continuous improvement. Partly because of constraints in the Accord Acts, the information in the reports is not publicly available and therefore cannot contribute to a better scientific understanding of the offshore environment.

1.57 Information about spills. Operators are required to report all oil or gas spills to the responsible board. The board then reviews and, if necessary, investigates each spill. We examined whether the boards took adequate steps to ensure that all spills were reported to them and properly managed.

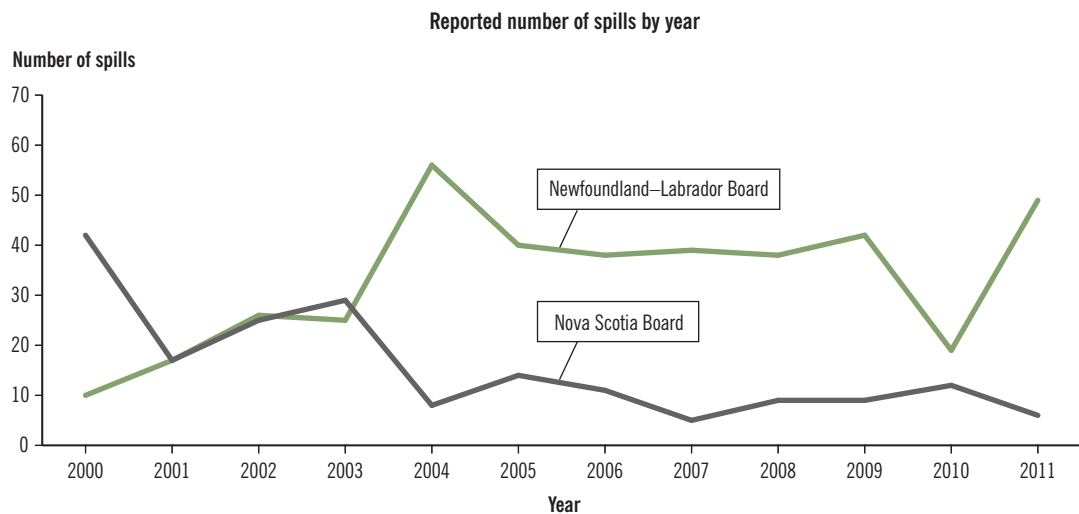
1.58 We found that both boards have obtained information from the operators about spills and have reported this information publicly (Exhibit 1.6). The boards rely on reports from operators to find out about the occurrence of a spill, its size, the substances involved, the circumstances, the root cause, and whether the spill was cleaned up.

1.59 We examined board records for the last two years and found that the boards tracked the operators' responses to spills. The boards indicated that operators had successfully addressed all spills. Although we did not conduct formal audit tests outside the boards on this aspect, no documented cases came to our attention involving failure of an operator to report a spill.

1.60 Board officers may visit a spill location if they judge it necessary from the information reported to them. However, we found that the boards had few additional options for obtaining independent observations of spills and the success of cleanup actions. One way the boards currently obtain such information is through Transport Canada's National Aerial Surveillance Program. Consistent with

the Department's mandate, this program is focused on spills from ships. For its monitoring work, the program has an aircraft based in Moncton, New Brunswick, equipped with oil spill detection capabilities, and an arrangement with Provincial Airlines, based in St. John's, Newfoundland, to visually monitor offshore areas. However, the boards have not established any formal arrangements with Transport Canada to obtain surveillance services. Nevertheless, aircraft from the program have carried out flights over oil and gas production areas, and reported spills that they spotted. The Integrated Satellite Tracking of Polluters initiative, led by Environment Canada, also collects information about spills and may report spills observed, but again there is no formal working arrangement between the boards and the Department to ensure that specific concerns are identified.

Exhibit 1.6 Both boards have reported the number and volume of spills



	Yearly total volume of reported spills in thousands of litres*											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Newfoundland-Labrador Board	4.9	5.7	12.3	31.4	274.0	4.2	4.3	75.2	4.9	0.3	0.2	34.0
Nova Scotia Board	1.8	0.2	7.6	27.5	357.5	1.2	159.3	0.08	0.03	0.2	0.7	0.4

* Where a reported spill volume was a range, the maximum of the range was used. The reported spills include several different substances, such as diesel fuel and hydraulic oil.

Sources: Canada-Newfoundland and Labrador Offshore Petroleum Board and Canada-Nova Scotia Offshore Petroleum Board

Non-compliance situations seldom require the use of legislated enforcement tools

1.61 The Accord Acts equip the boards with a variety of tools in the event of non-compliance. For example, they can

- issue orders to comply,
- suspend or revoke an authorization or operating licence,
- refer a matter for prosecution, or
- assume control of operations.

Prosecution of a case of non-compliance can result in fines and penalties.

1.62 In alleged non-compliance situations, the boards can undertake formal investigations to determine the appropriate enforcement action. We found that since 2009, the Nova Scotia Board has not dealt with any environmental incidents that warranted investigation. In 2011, the Newfoundland–Labrador Board investigated one incident of a reported spill of 26,400 litres of synthetic drilling fluid into the ocean. As a result of the investigation, charges were laid and financial penalties were applied.

1.63 Both boards cite the operators' desire to protect their reputations as an important driver of compliance. We found that most situations of non-compliance were resolved without the use of more serious measures or enforcement tools. The two boards use different combinations of letters and notices to achieve compliance. Both boards have policies outlining how they will escalate their response in a case of non-compliance, if necessary.

Preparing for and responding to spills

1.64 As illustrated by the Macondo (*Deepwater Horizon*) spill in the Gulf of Mexico in 2010, major spills (Exhibit 1.7) are among the most significant contributors to the environmental impact of oil and gas activities. They are relatively infrequent (Exhibit 1.8), but can have severe and long-lasting consequences. A spill from a ship involves a well-defined and limited quantity of oil, but it is difficult to predict

Exhibit 1.7 Definitions of major spills vary

The severity of spills is defined in two main ways: by the size of a spill or by the players involved in the response and what roles they play, with more significant spills requiring resources from other players, possibly from other parts of the world. We observed that different players involved in offshore spills in Atlantic Canada use different and sometimes inconsistent ways of categorizing spills and of deciding when more significant effort is required. For the purpose of this chapter, a major spill is one requiring response activities by the operators together with the boards and other federal entities.



Skimming oil from the surface of the ocean after a spill

Photo: National Oceanic and Atmospheric Administration Office of Response and Restoration

the amount of oil that might ultimately be released from underground reservoirs as a result of loss of well control (a blowout).

1.65 The environmental risks associated with oil production are higher than those associated with gas production. In Nova Scotia, natural gas accounts for all current production. If a well blowout happened there, the environmental risk would be relatively low and the safety risk would be high because of the possibility of an explosion. In Newfoundland, crude oil accounts for most production; a blowout or major spill there would pose significant environmental and safety risks. As well, the operating environment is more severe in the areas offshore from Newfoundland and Labrador than off Nova Scotia, and those conditions could raise greater obstacles to a rapid or effective spill response. If new deepwater wells are drilled for oil off the coast of Nova Scotia, the activities will entail increased environmental risks to be managed by the Nova Scotia Board.

1.66 When a spill occurs, an operator has two immediate responsibilities: to report the event to the responsible board, and to respond as soon as possible with reasonable measures aimed at preventing further spillage and minimizing the environmental impact. The operator would lead the response, guided by its own spill response plan. As set out in the Accord Acts, the responsible board must monitor the operator's activities, and can give direction to the operator. The Acts also provide that if the operator does not or cannot fulfill its responsibilities, the board may take over the spill response. Although neither board has had to play this role in the past, if one did take over managing a spill response, it would coordinate its actions with federal departments and agencies.

Exhibit 1.8 Large oil spills have not been frequent

Historical averages suggest the following probabilities for incidents involving offshore oil platforms. These estimates should be used with caution.

Type of spill	Spill size	Rate of occurrence
Blowout from an exploratory well	Very large (more than 10,000 barrels)	Less than 1 in 1,000 per well drilled
Blowout from a producing well	Very large	Less than 1 in 10,000 per well per year
Spill from a platform	Large (more than 1,000 barrels) Example: the 2004 Terra Nova spill off the coast of Newfoundland	Less than 1 in 10,000 per well per year
Spill from a platform	Medium (1 to 1,000 barrels)	Less than 1 in 10 per well per year

Sources: Environment Canada; Det Norske Veritas; American Petroleum Institute; environmental assessments for Hebron and Old Harry projects

1.67 We examined each board’s review of operator spill response plans, as well as the extent to which the board’s own emergency response plans contained key elements. Based on our review of national and international standards, applicable regulations and guidance, and other sources, we assessed whether the response plans contained the following key elements:

- a clear statement of who will do what, including who will lead the response under different circumstances;
- an assessment of the risks;
- the means to detect spills quickly and accurately;
- the means to predict the future path of the spill (this requires up-to-date information about the type and volume of oil spilled);
- access to people with the necessary expertise and training;
- adequate resources;
- coordination with other related response plans; and
- appropriate exercising and testing of the plans.

Gaps in these areas would have different consequences for the two boards, given the different contexts and associated risks. We also examined how the boards, together with federal partners on which they could depend in the event of a major spill, are collectively prepared to respond.

The Newfoundland–Labrador Board has not obtained adequate assurance that operators are ready to respond effectively to a spill

1.68 As part of the process of obtaining authorization to drill or operate a well, operators are required to submit spill response plans for board review. We examined how the boards reviewed the plans. We found that requiring operators to seek regular renewal of authorizations ensured that plans were up to date and that they included most key elements. However, neither board had formal, systematic methods for reviewing spill response plans.

1.69 In 2008, the Newfoundland–Labrador Board raised concerns about whether producing operators under its jurisdiction had spill response capabilities that were effective and consistent with good practices in other jurisdictions. By 2009, the Board had required all producing operators to review their spill response capability. Three years later, the Board has not yet finished assessing whether operators have sufficient equipment and resources. Between 2009

Dispersants—Chemical products that accelerate the breakup of oil slicks. They work like dish soap by changing the surface tension of the oil so it breaks apart into very small droplets that mix more easily with water.

and 2012, the Board issued six production authorizations. It also found that operators assumed they would be able to use chemical **dispersants** in the event of a major spill. In fact, there are several legal barriers to the use of dispersants in Canadian waters, and the Newfoundland–Labrador Board has indicated that more work is needed to determine if the chemicals are an effective countermeasure against spills of some types of oil under its jurisdiction.

1.70 Recommendation. The Newfoundland–Labrador Board should complete its review of the spill response capability of operators under its jurisdiction as soon as possible.

The Board’s response. Agreed. The Newfoundland–Labrador Board will complete its review by 31 March 2013.

1.71 We also identified gaps in the Newfoundland–Labrador Board’s review of the arrangements that operators are supposed to have in place to obtain equipment and personnel in the event of a spill. Some of the operators have plans that indicate that they could rely on the Canadian Coast Guard to provide resources for their spill response; however, the Coast Guard does not have a specific mandate to respond to spills from offshore oil and gas facilities. In recent years, the Coast Guard has participated only as an observer in operator response exercises. The plans also indicate that operators would employ Canadian and international private sector response organizations for response services if a major spill occurs. Transport Canada has certified Canadian private sector organizations to respond to spills of up to 10,000 tonnes of oil from ships. However, no regulator has certified the capacity of these organizations to respond to offshore oil and gas spills, or considered the possibility of conflicting demands for their resources.

1.72 Recommendation. The boards should seek the advice of Transport Canada, the Canadian Coast Guard, and international partners to design an approach for third party verification of the capacity of organizations that would respond to spills from offshore oil and gas facilities.

The boards’ response. The boards agree with this recommendation with the following understanding: According to legislation, the boards’ role is to assess the adequacy of operators’ spill response plans and commitments to ensure their sufficiency and robustness. The operators hold the duty to verify the capacity of any organizations that support those plans.

In keeping with the legislated regulatory regime, the boards commit to tasking operators with defining an approach—to the satisfaction of the

boards—that ensures third party verification of the capacity of organizations that they would rely on for responding to spills from offshore oil and gas facilities. In providing guidance to operators in undertaking this task, and in evaluating the acceptability of proposed approaches, the boards will consult with Transport Canada and the Canadian Coast Guard.

The boards' emergency response plans are missing some elements

1.73 The boards would be the lead agencies overseeing the response to a spill resulting from oil and gas activities in the offshore areas. As a result, each board needs its own emergency response plan, along with related policies describing when and how the plans would be used. We assessed the boards' plans to see whether they included the same general elements required in the operators' plans (see paragraph 1.67).

1.74 We found that both boards recently updated their emergency response plans but that there were gaps related to their description of how they would coordinate with federal organizations and their assessment of the risks (see paragraphs 1.78 and 1.107). In addition, several aspects of the Newfoundland–Labrador Board's plan need improvement given the greater risks faced in areas under its jurisdiction. Internal roles and responsibilities need clarification, as do the training requirements and qualifications for key personnel. The Board does not have in-house technical expertise to manage a major spill or a loss of well control, but it has recently established a contract to obtain some of the drilling expertise it might require to begin to fill this gap. The Board would also have to rely on others to provide spill response equipment, but it has not established the necessary formal arrangements—for example, with private contractors. Finally, we found that, since 2004, the Board has not tested its plan or held emergency exercises that might enable it to identify and address potential problems with the plan.

The boards and supporting federal departments need to do more to prepare for a major oil spill

1.75 As we have noted, the two boards currently operate in quite different environments. As a consequence, the potential challenges would be greater for the Newfoundland–Labrador Board if it had to lead a response.

1.76 Many players could be involved in providing support during the response to a major spill, including several federal departments and agencies. Given this fact, we looked at different aspects of preparations

for spills. We noted that the federal government has valuable resources and capabilities at its disposal in the case of a major spill. For example, Environment Canada has a database of oil characteristics; this can help predict how oil will behave in the ocean and what the impacts of a spill might be. Environment Canada can also model oil spills to predict where the oil will go. Transport Canada has aerial surveillance capabilities that were used to help respond to the Macondo spill in the Gulf of Mexico (see paragraph 1.60). Environment Canada and Fisheries and Oceans Canada have been researching the use of dispersants on oil from Atlantic Canada sources.

1.77 However, we also identified several areas of concern. When taken together, these raise questions about whether the boards and their federal partners are adequately prepared to respond to a major oil spill.

1.78 Poorly coordinated plans. We looked for a coordinated, well-defined set of plans that would support an efficient and timely response. In particular, we examined the plans of the two boards and Natural Resources Canada (the federal department having lead responsibility for this type of emergency). Under the *Emergency Management Act*, federal ministers are required to have plans that address risks in their areas of responsibility. We also considered the supporting roles of other federal organizations, including the Canadian Coast Guard and Transport Canada, as well as whether the plans aligned with the overall Federal Emergency Response Plan, the Government of Canada’s “all-hazards” response plan.

1.79 We found that the plans we examined were inconsistent and did not always take each other into account. As a result, it was unclear who would perform some key roles during a major spill, and how. This situation could delay an effective response and cause limited resources to be used inefficiently. Our observations were consistent with the results of exercises led by Natural Resources Canada in May and November 2011. Natural Resources Canada has not yet acted on some recommendations from these exercises—for example, setting up annual exercises or formalizing collaboration with the boards.

1.80 Incomplete board agreements with federal entities. In an emergency, an effective and timely response depends on the efficient use of resources. To achieve the necessary efficiency, it is essential to have in place up-to-date agreements that ensure effective coordination, prevent duplication of efforts, and clarify roles and responsibilities. The Accord Acts require the boards to put such agreements in place. The Nova Scotia Board established memoranda of understanding with Environment Canada in 2003 and with Fisheries and Oceans Canada

in 2004 that address some aspects of spill response. However, we noted that, in general, memoranda of understanding between the boards and federal departments and agencies are out of date or non-existent, or do not cover some important activities. For example, the Nova Scotia Board and the Canadian Coast Guard were working on a memorandum to identify their roles and responsibilities in the event of a spill, but this document was only in draft form at the conclusion of our audit work. The Newfoundland–Labrador Board has a memorandum with the Canadian Coast Guard, but it was signed in 1989 when the Coast Guard was part of Transport Canada, and all departments party to the memorandum have since changed names.

1.81 Unresolved jurisdictional issues between entities. In examining the responsibilities of federal departments and agencies, we noted that there were unresolved jurisdictional issues, some of which could hinder an adequate and timely response. Transport Canada has overall responsibility for the marine oil pollution regulatory regime for ships and has worked with the boards to determine how different spills will be addressed. However, during our audit we heard differing views about when a spill would fall under the Accord Acts, and hence be in the jurisdiction of the boards, or under the *Canada Shipping Act, 2001* and be the responsibility of another entity. Partly as a consequence, the possible roles of the Canadian Coast Guard in the event of a major offshore spill need to be clarified, in particular what resources, expertise, and leadership it would provide if one of the boards were leading the response. The boards are updating memoranda of understanding to address some of these jurisdictional points, but they were still in draft form as of the end of our audit.

1.82 Inadequate testing. The Newfoundland–Labrador Board and some federal departments observe annual exercises to test operator spill responses but have not tested their own response. The Nova Scotia Board conducts at least one internal emergency exercise annually, but with minimal involvement of federal partners. Natural Resources Canada has conducted a limited exercise of some aspects of the federal response, but the overall federal capacity has not undergone field testing.

1.83 Insufficient oil spill response tools. The Canadian Coast Guard has equipment for responding to oil spills from ships and might make it available in the event of a spill from an offshore facility. However, the Coast Guard does not have a mandate to respond to spills from such facilities and so does not have the resources or equipment that might be needed to deal with a major spill. The Coast Guard does maintain a stockpile of dispersant, but (as noted earlier) current rules do not allow

the use of this substance in Canadian waters. The Newfoundland–Labrador Board, together with operators and other federal regulators, is examining how dispersants might be used in the Atlantic offshore. If their use is found to be environmentally acceptable, this would provide another tool for managing and mitigating oil spills.

1.84 Recommendation. The boards should work with appropriate federal departments and agencies, and other organizations as necessary, to ensure that individual and collective response plans for a major oil spill are adequately resourced and coordinated, well defined, and regularly tested, individually and collectively. The plans should be supported by up-to-date and effective memoranda of understanding between all involved parties.

The boards' response. Agreed. The boards are current in their involvement with the operators who, as first responders, are legally required to respond to any spill event.

The boards will continue to work with appropriate federal departments and agencies to ensure that the individual and collective response plans for responding to a major oil spill remain up to date. These plans will be supported by updated memoranda of understanding as appropriate.

The Nova Scotia Board will complete these actions prior to a future exploratory drilling program that may encounter oil (earliest expected date is 2015).

1.85 Recommendation. Natural Resources Canada, the Canadian Coast Guard, Transport Canada, and Environment Canada should work with the boards and others, as necessary, to establish and clarify the roles and responsibilities of federal government departments and agencies in the event of a major oil spill, as well as the resources that would be available. This should include a coordinated response plan.

The departments' response. Agreed (by Natural Resources Canada, Canadian Coast Guard, Transport Canada, and Environment Canada). The roles and responsibilities of federal departments, agencies, and the boards in the event of a spill are established by various acts and regulations. The nature of a spill would determine the departments and agencies involved, as well as their level of engagement. In 2011, Natural Resources Canada and federal departments and agencies conducted two tabletop spill response exercises, and have continued to work together on a range of issues related to oil spills. The departments will work together and with the boards to review roles and responsibilities related to the response to a major oil spill. The review will take into consideration the legal authority, mandate, and available

resources of each organization, and identify gaps, while acknowledging the primary role of the operator in spill response. In addition, Natural Resources Canada commits to hosting an annual simulation exercise with its partners.

The boards have learned lessons from past incidents

1.86 Because major spills and offshore incidents are relatively rare, the boards have few opportunities to assess how their spill preparedness and response approaches will work in practice. It is therefore essential for the boards and other federal departments to identify and apply relevant lessons from events in Canada and other jurisdictions. For example, the 2009 Montara blowout off the coast of Australia was attributed partly to inadequate regulatory oversight. Such lessons are a way for regulatory and response regimes to evolve and improve.

1.87 Both Canadian boards are members of two organizations that examine lessons learned from internationally significant incidents: the International Regulators' Forum and the International Offshore Petroleum Environmental Regulators' Group. The boards have also taken other steps to share lessons learned and good practices with offshore regulators from other countries.

1.88 We wanted to know whether the boards had identified key lessons and put them into practice. The Newfoundland–Labrador Board reviewed and summarized lessons from two major spills: the 2004 Terra Nova spill off Newfoundland and the 2010 Macondo (*Deepwater Horizon*) blowout in the Gulf of Mexico. The Board identified the need for

- broader emergency response training and exercises,
- access to expertise that would help in overseeing efforts to control a well in the event of a blowout, and
- an assessment of how dispersants might be permitted and applied as a spill countermeasure in the areas offshore from Newfoundland and Labrador.

1.89 We found that the Newfoundland–Labrador Board completed its review of lessons from the 2010 Macondo spill in May 2012 and has taken some steps to apply those lessons. For example, the Board has requested that operators submit information demonstrating how they would integrate the use of dispersants into their response operations. However, we also found that the Board had not finalized its lessons learned report from the 2004 Terra Nova spill and had not acted on

several of the identified lessons. For example, the Board had not begun broader emergency response exercises. The Nova Scotia Board has worked with the Newfoundland–Labrador Board to identify and apply the lessons from other jurisdictions.



A semi-submersible drilling rig off the coast of Newfoundland

Photo: Greg Locke

1.90 We assessed whether other federal entities had identified key lessons and put them into practice. We found that all the departments had identified lessons from the Macondo blowout and were acting to apply those lessons. For example, federal departments are working with partners to determine how the use of dispersants might be authorized in the future. In addition, Natural Resources Canada is considering what changes might be needed to liability limits for offshore operators. However, we also noted that several departments identified the need to do more to clarify their roles and responsibilities regarding a response to a major spill in the Atlantic offshore.

1.91 Recommendation. The boards should develop and maintain systematic practices for identifying and applying lessons learned from their own and other jurisdictions. They should integrate what they have learned with the boards' procedures for continuous improvement and with lessons learned processes in federal departments and agencies.

The boards' response. Agreed. The boards currently have processes in place by which lessons learned from their own and other jurisdictions are applied. This was shown in the Macondo *Deepwater Horizon* event and by the Review of Offshore Oil-spill Prevention and Remediation Requirements and Practices in Newfoundland and Labrador, with departmental managers at both boards assessing the numerous reports and modifying board practices, where necessary. Internationally, many of these lessons learned are available to us through our charter member status in the International Regulators' Forum and the International Offshore Petroleum Environmental Regulators' Forum in which the Boards will continue their memberships. Additionally, the boards will continue to liaise with federal departments, agencies, and non-governmental organizations. The boards' internal practices and procedures will be strengthened by applying a systematic process to maintain their high standard.

Supporting key environmental decisions

1.92 The boards must manage a complex set of regulatory activities. We looked at the way the appointed members of the boards oversee key environmental decisions, such as whether to approve major projects, and how the boards ensure that they have the necessary internal and external capacity. We also examined their approach to managing environmental risks.

Oversight by board members could be strengthened

1.93 To oversee each board's environmental mandate, the government-appointed members of the board need to work with senior managers to obtain relevant information, weigh options, and document their key operational and policy decisions. Based on the experience of boards of directors in similar situations, we identified several challenges to effective oversight by the boards.

1.94 Competencies and experience. Ideally, the appointed board members collectively would have all the competencies and experience required to exercise their responsibilities. Among other things, this means that they would have a background in industry practices and environmental issues. We found that Natural Resources Canada analyzes the competencies of board members to identify gaps in the collective skill set. Despite this, each board does not always have a full complement of members continuously in place with all of the desired competencies and experience.

1.95 Reporting. Board members discuss the environmental issues brought to their attention by board staff. We found that Newfoundland–Labrador Board members received quarterly summary reports from staff on environmental issues. Members of the Nova Scotia Board's new Health, Safety and Environment Committee also received regular updates on environmental concerns. We found as well that the members of both boards documented their key decisions on environmental matters.

1.96 Organizational structure. Organizations that function effectively have a structure that allows them to make decisions when there are competing views or potentially conflicting aspects of their mandates. In the case of the boards, the Chief Conservation Officer has two responsibilities that could come into conflict: protecting the environment and ensuring that hydrocarbon resources are extracted efficiently. In our view, the boards could reconsider their internal structure to reduce the potential for conflicting responsibilities, although some changes would require amendments to legislation.

The boards need to sustain their internal and external capacity

1.97 Internal capacity. The boards must be able to manage their regulatory responsibilities given the size of the industry and the types and extent of activities under way (for instance, the number of approval processes per year). This means having adequate staff, in terms of both numbers and qualifications of their employees. At the same time, the boards need to maintain a critical mass of expertise. For example, we were told that the demands on the Newfoundland–Labrador Board associated with the inquiry into the 2009 Cougar helicopter crash delayed the implementation of new audit and inspection procedures.

1.98 In addition, the departure of any board employee should not affect either board's ability to carry out its core functions. In our view, the concentration of responsibilities and experience in a few individuals poses a risk to the organization's capacity to manage the impacts of offshore oil and gas activities—particularly given the lack of up-to-date policies, procedures, and memoranda of understanding with other departments and agencies. During our audit, we noted that from April to August 2012, a single experienced individual at the Newfoundland–Labrador Board temporarily carried the responsibilities of Chair of the Board, Chief Executive Officer, and Chief Conservation Officer—each a substantial and demanding role.

1.99 Staff members number 39 at the Nova Scotia Board and 72 at the Newfoundland–Labrador Board. There may be opportunities for the two boards and the National Energy Board to share more functions and expertise so that they are better able to respond to increasing or unexpected demands. For example, all three boards shared responsibilities for the development of their Environmental Protection Plan Guidelines, intended for onshore and offshore operators. Closer ties could benefit all parties, particularly as the National Energy Board moves toward regulating offshore activities in Canada's North. Such arrangements could also support efficient implementation of the new Canada–Quebec accord governing the management of some offshore petroleum resources in the Gulf of St. Lawrence.

1.100 External capacity—environmental assessment. The boards depend on the input and support of federal departments and agencies in several ways. During both strategic and project environmental assessments, Environment Canada and Fisheries and Oceans Canada advise the boards on possible impacts, suitable mitigation measures, and the need for follow-up monitoring. The departments' support is essential given the range of different environmental impacts, the need

to be well informed about emerging environmental issues and research, and the small number of environmental staff at each board. The same two departments have also played a critical role in supporting the review of the operators' environmental effects monitoring programs and providing advice about protecting species at risk.

1.101 As noted earlier, the federal government replaced the environmental assessment process in July 2012. The new legislation and regulations will affect what environmental reviews the boards perform and how other federal entities provide expert support to the boards. Staff told us that the boards would continue to assess environmental effects based on their responsibilities under the Accord Acts and as federal authorities under the new legislation. However, it is unclear what support will be available from federal departments and agencies, such as Environment Canada and Fisheries and Oceans Canada—organizations on which the boards have depended for advice and expertise in conducting their assessments. There is no specific requirement for federal authorities to provide this support to the boards for projects not designated under the new legislation. There are memoranda of understanding that outline the expectations for support from federal departments, but these have not yet been revised since the legislative changes came into effect.

1.102 Recommendation. Given the new environmental assessment legislation, the boards should document or update their policies and procedures, and update their memoranda of understanding with their federal partners, including Environment Canada and Fisheries and Oceans Canada, to ensure that the boards will have the capacity for effective environmental review of projects not designated under the *Canadian Environmental Assessment Act, 2012*.

The boards' response. Agreed. The boards are undertaking a review of their processes for environmental assessment of projects not designated under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) and will update their policies and procedures by the end of the first quarter of 2013 at the latest. In the interim, since the adoption of the CEAA 2012, the boards have been reviewing the potential environmental effects of proposed activities in a manner consistent with the previously existing *Canadian Environmental Assessment Act* (S.C. 1992, c. 37), and publishing the associated documents on their websites. The boards have already commenced the process of updating existing memoranda of understanding with Environment Canada and with Fisheries and Oceans Canada.

Environment Canada's response. Agreed. Environment Canada agrees to work with the boards to discuss their needs, determine what it could provide to address those needs, and reflect any formal agreement in an updated memorandum of understanding.

Fisheries and Oceans Canada's response. Agreed. Fisheries and Oceans Canada will continue to work collaboratively with the boards by providing expert advice on fish, fish habitat, fisheries, and aquatic species at risk for existing and forthcoming environmental reviews of projects as per our commitment in the memoranda of understanding. Over the long term, the Department will work with the boards to update the memoranda of understanding to clarify their roles and responsibilities in the light of the recent legislative change (*Canadian Environmental Assessment Act, 2012*).

1.103 External capacity—advice during emergencies. The interdepartmental Regional Environmental Emergencies Team, chaired by Environment Canada, is intended to provide a single source of scientific advice during a major spill or other emergency. Both boards indicated that they would rely on this expert team in the event of a major spill. As part of the federal budget tabled in 2012, funding for Environment Canada's Environmental Emergencies Program was reduced by half, and the Department now will focus on providing support from a central office in Montreal. It is not yet clear what the impact of these changes will be on the regional team's ability to provide consolidated advice during environmental emergencies or on the boards' ability to obtain such advice during a spill.

1.104 Recommendation. Working with the boards and its other partners, Natural Resources Canada should assess the capacity of the boards to exercise their responsibilities, including how they rely on other federal parties, and should explore opportunities for sharing expertise among those responsible for offshore oil and gas activities.

The Department's and boards' response. Agreed. Natural Resources Canada will work with the boards and the respective provincial governments to assess the capacity of the boards to exercise their responsibilities. The Department will establish a senior level committee to meet regularly to bring together the departments and agencies with responsibility and expertise related to offshore oil and gas activities to further coordination and knowledge sharing.

The boards are willing to be part of an ongoing discussion with relevant federal departments and agencies to ensure that the requirements for effective spill prevention and response and the sharing of expertise and coordination needed for effecting this are addressed on a continuous basis.

Risk management practices could be extended to support better decisions

1.105 A theme that cuts across the different areas we examined is the opportunity for the boards and other responsible federal parties to integrate better risk management practices into their oversight of offshore oil and gas activities. International standards and good practices, and Canadian federal guidance point to two main ways of doing this.

1.106 The first is using enterprise risk management, which involves identifying and managing the key threats that could prevent an organization from achieving its corporate goals. The senior management of the Nova Scotia Board recently put this kind of management framework in place. For example, it identified the need to work toward good alignment with government policy. The Newfoundland–Labrador Board currently does not have a similar framework.

1.107 Second is systematically understanding and managing the risks of different incidents. For example, strategic environmental assessments and project environmental assessments produce some predictions of the risks of possible spills. We found, however, that neither board nor any other federal organization has included an estimation of the combined risks of different kinds of management system failures in its own emergency response plans related to offshore oil and gas activities. This means that the plans may not focus on the key risks. We also noted that neither board has consistently and explicitly identified what risks are acceptable (that is, its risk tolerance).

Conclusion

1.108 Our audit examined whether the Canada–Newfoundland and Labrador Offshore Petroleum Board and the Canada–Nova Scotia Offshore Petroleum Board appropriately managed the environmental risks and impacts associated with offshore oil and gas activities. We looked at whether the boards exercised due diligence when assessing and approving offshore projects and activities, and whether they took adequate steps to ensure that operators complied with environmental requirements. We also considered whether the boards, together with other federal parties, were adequately prepared to respond to spills.

1.109 We conclude that, on balance, the boards exercised due diligence when assessing and approving offshore projects and activities. We also identified some ways in which the boards could improve these processes, such as adopting updated policies and procedures to guide strategic and project environmental assessments, strengthening their monitoring of mitigation measures, and better defining procedures for monitoring species at risk. It will be particularly important for the boards to determine how they will meet the environmental protection objectives of their governing legislation, given the changes introduced by the new *Canadian Environmental Assessment Act, 2012*. In our view, the timing may be right for Natural Resources Canada to assess the internal and external capacities of the boards to exercise their responsibilities.

1.110 We conclude that while the boards took adequate steps to ensure that operators comply with environmental requirements, several improvements are needed. These include risk-based audits of the operators' management systems, and more formal arrangements for obtaining independent observations of offshore oil and gas activities.

1.111 In the event of a spill from an offshore oil or gas activity, the project operator is required to immediately take all reasonable measures to clean up the spill and prevent further spillage. To date, the boards have ensured that operators have adequately responded to reported spills. However, our audit identified concerns regarding preparations for a future spill: in 2008, the Newfoundland–Labrador Board began an assessment of the operators' spill response capabilities, but the assessment is still incomplete.

1.112 The enabling legislation also provides that the boards may take over a spill response if the operator does not or cannot respond immediately or does not take reasonable measures. We found that the boards and the federal entities that may contribute to response efforts are not adequately prepared to respond to a major oil spill if one of the boards had to take over a response. The Nova Scotia Board does not at present regulate activities that produce oil, but it expects exploratory drilling for oil to begin within its jurisdiction soon.

1.113 Specifically, we found that the response plans of the boards and federal entities lack coordination and are sometimes inconsistent; the boards and federal entities have not tested or exercised their collective plans or collective capacity; and several memoranda of understanding are either out of date or not in place. Exacerbating these deficiencies are uncertainties about roles and responsibilities in the event of a spill, as well as program reductions at Environment Canada and Fisheries and Oceans Canada.

1.114 Overall, both boards have managed the current environmental impacts associated with oil and gas activities in Canada's Atlantic offshore areas in a manner consistent with the size and scale of operations in those regions. However, if a board were to take over the response to a major oil spill, the board and the federal entities that might contribute to the response efforts are not adequately prepared to respond. Although the probability of a major spill in the Atlantic offshore area is relatively low, in our view the boards and the federal departments with support responsibilities need to do more to prepare for such an event.

About the Audit

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

Objectives

The overall audit objective was to determine whether the Canada–Newfoundland and Labrador Offshore Petroleum Board and the Canada–Nova Scotia Offshore Petroleum Board, along with other federal parties, appropriately managed the environmental risks and impacts associated with offshore oil and gas activities. By “appropriately managed,” we mean that the two boards acted according to applicable legislation, regulations, directives, and agreements with other players. We also expected the boards to follow good practices for risk management, and for learning and applying lessons from other jurisdictions.

The three sub-objectives were to determine whether the boards

- exercised due diligence regarding environmental risks and impacts when assessing and approving offshore projects and activities;
- took adequate steps to ensure that operators complied with environmental requirements; and
- along with other federal parties, adequately prepared for and responded to spills.

Scope and approach

We focused on the roles and activities of the boards related to environmental protection. We looked at how Environment Canada and Fisheries and Oceans Canada supported board activities by providing advice during environmental assessments. Our work with the federal entities also addressed their roles in spill preparedness and response. For this aspect, we included Natural Resources Canada, Environment Canada, Transport Canada, and Fisheries and Oceans Canada (including the Canadian Coast Guard).

The boards are joint federal–provincial bodies. We did not examine occupational health and safety, resource management, issuance of land rights, or industrial benefits. We also excluded facilities and activities that are outside the boards’ regulatory authority, such as pipelines, onshore facilities, and ship traffic. Further, we did not examine the activities of operators.

We examined how the boards assessed and approved offshore projects by looking at a selection of 5 strategic environmental assessments, a sample of 11 project environmental assessments, and all authorizations over the last two years. The samples were chosen to best represent current practices and to reflect a range of different project types and phases.

To assess how the boards were ensuring that the operators complied with environmental requirements, we used a sample of 11 environmental assessments and then chose a mix of different mitigation measures and monitoring requirements that represented a mix of various activities. We also examined all current

annual environmental reports, environmental protection plans, and environmental effects monitoring programs for major projects.

To examine the preparation and response to spills, we looked at all current operator emergency response plans, and all 86 records documenting the response to spills over the last two years.

Criteria

In the table that follows, we have included only selected sources for the criteria. When we refer to the Accord Acts, we mean the *Canada–Nova Scotia Offshore Petroleum Resources Accord Implementation Act* and the *Canada–Newfoundland Atlantic Accord Implementation Act*. When we refer to the Drilling and Production Regulations, we mean the *Nova Scotia Offshore Petroleum Drilling and Production Regulations* and the *Newfoundland Offshore Petroleum Drilling and Production Regulations*. When we refer to various guidelines, these are guidelines prepared by the two offshore boards.

Criteria	Sources
To determine whether the offshore petroleum boards, along with other federal parties, appropriately managed the environmental risks and impacts associated with offshore oil and gas activities, we used the following criteria:	
Assessing and approving offshore activities	
The boards conduct strategic environmental assessments.	<ul style="list-style-type: none"> • Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals; and associated guidance documents prepared by the Canadian Environmental Assessment Agency • Accord Acts
The boards ensure that environmental assessments are conducted in accordance with the requirements of the <i>Canadian Environmental Assessment Act</i> , the Accord Acts, and their own internal policies and procedures.	<ul style="list-style-type: none"> • <i>Canadian Environmental Assessment Act</i> (repealed July 2012) • Accord Acts
The boards assess applications for authorizations to ensure compliance with the environmental protection provisions of the relevant regulations.	<ul style="list-style-type: none"> • Drilling and Production Regulations • Environmental Protection Plan Guidelines • Drilling and Production Guidelines
The boards provide adequate oversight of the approval decisions for offshore projects and activities.	<ul style="list-style-type: none"> • <i>Canadian Environmental Assessment Act</i> (repealed July 2012) • Accord Acts • Special Examination of Crown Corporations—Recommended General Criteria and Sub-Criteria, Office of the Auditor General
Ensuring compliance with environmental requirements	
The boards ensure that operators have environmental management systems in place and that they are functioning as intended.	<ul style="list-style-type: none"> • Drilling and Production Regulations • ISO and Canadian Standards Association (CSA) standards for environmental management systems, including 14001–04 and 14004–04

Criteria	Sources
The boards take adequate steps to ensure that monitoring and mitigation measures are undertaken in accordance with environmental assessments, environmental protection plans, and authorizations issued.	<ul style="list-style-type: none"> • <i>Canadian Environmental Assessment Act</i> (repealed July 2012) • Accord Acts • <i>Species at Risk Act</i> • Drilling and Production Regulations
The boards take adequate steps to ensure that environmental effects monitoring programs are in place and functioning as intended.	<ul style="list-style-type: none"> • Commitments in strategic environmental assessments prepared by the boards • Commitments from the project environmental assessments for the major offshore projects
Preparing for and responding to spills	
The boards ensure that offshore operators have adequate contingency plans in place to respond to spills.	<ul style="list-style-type: none"> • Drilling and Production Regulations • Drilling and Production Guidelines • Environmental Protection Plan Guidelines
The boards have adequate contingency plans in place that address their own responsibilities.	<ul style="list-style-type: none"> • Accord Acts
The boards have up-to-date memoranda of understanding with federal parties, and use them to define roles and responsibilities when preparing for and responding to spills.	<ul style="list-style-type: none"> • Accord Acts • Drilling and Production Regulations
The boards, along with other federal parties, assess the adequacy of the combined contingency plans of all parties.	<ul style="list-style-type: none"> • Accord Acts • Provisions and commitments of memorandum of understanding between the boards and federal entities • ISO 14001 and CSA standards for emergency preparedness and response, including CSA Z731-03
The boards have adequate mechanisms to provide assurance that all spills are reported to them.	<ul style="list-style-type: none"> • Accord Acts • Drilling and Production Regulations • Canada Oil and Gas Drilling and Production Regulations • Environmental Protection Plan Guidelines • Guideline for the Reporting and Investigation of Incidents
The boards monitor the response of offshore operators to spills, assess the appropriateness and timeliness of the response, and take action if necessary.	<ul style="list-style-type: none"> • Accord Acts • Drilling and Production Regulations • Environmental Protection Plan Guidelines
The boards, along with other federal parties, identify and apply the key lessons from past spills and other incidents in other jurisdictions.	<ul style="list-style-type: none"> • Commitments in 2010–11 annual reports of Nova Scotia and Newfoundland–Labrador boards

Management reviewed and accepted the suitability of the criteria used in the audit.

Period covered by the audit

The audit focused on practices since January 2010. In some areas, we looked at older decisions that influenced current practices and the current level of environmental protection. Audit work for this chapter was completed on 24 August 2012.

Audit team

Principal: Kimberley Leach

Director: Peter Morrison

Tanya Burger

Kate Kooka

Leslie Lapp

Melissa Miller

David Wright

For information, please contact Communications at 613-995-3708 or 1-888-761-5953 (toll-free).

Appendix List of recommendations

The following is a list of recommendations found in Chapter 1. The number in front of the recommendation indicates the paragraph number where it appears in the chapter. The numbers in parentheses indicate the paragraph numbers where the topic is discussed.

Recommendation	Response
<p>Assessing and approving proposed activities</p> <p>1.27 To maximize opportunities for protecting the environment and to ensure that potential project proponents have the environmental information to make appropriate decisions, the boards should ensure that the results of up-to-date strategic environmental assessments are available prior to issuing a call for bids. (1.23–1.26)</p>	<p>The boards’ response. Agreed—in principle. The boards have in place processes that maximize opportunities for protecting the environment and disseminating environmental information while also ensuring the fairness and efficiency of the rights issuance regime.</p> <p>The boards’ practice regarding strategic environmental assessments (SEAs) is to ensure that the results of up-to-date SEAs are known either ahead of the issuance of a call for bids, or sufficiently in advance of the closing of a call for bids and ahead of irrevocable decisions that would be taken by bidders and by the boards.</p> <p>With respect to the Nova Scotia Board, this practice is based on joint policy direction by the federal and Nova Scotia governments. The Newfoundland–Labrador Board has no such restriction.</p> <p>Consistent with the recommendation, the boards plan to maintain current SEAs in areas where there is the most potential for petroleum exploration and where future calls for bids are most likely.</p> <p>If there is not an SEA (or updated SEA) available at the time of a call for bids, the call document would state that, ensuring full transparency of the process. In addition, the call would be made without prejudice to the environmental assessment process. The issuance of an exploration licence by the Board is also subject to fundamental decision approval by the federal and respective provincial governments.</p>

Recommendation	Response
<p>1.32 The boards should work with their federal partners, including Environment Canada and Fisheries and Oceans Canada, to identify and address the key information gaps in strategic and project environmental assessments. (1.23, 1.30–1.31)</p>	<p>The boards’ response. Agreed. The boards will continue to identify priority areas of research in cooperation with federal departments and agencies and other stakeholders. This would be for targeted research by government departments and agencies, through initiatives such as the Environmental Studies Research Funds and the Program of Energy Research and Development, and through a wider body of domestic and international work in specific areas. This will be done on an ongoing basis.</p> <p>Environment Canada’s response. Agreed. Environment Canada will work with the boards to determine key information gaps in strategic and project environmental assessments.</p> <p>Fisheries and Oceans Canada’s response. Agreed. Fisheries and Oceans Canada will continue to support the boards by providing expert advice during the environmental assessment of projects according to their memoranda of understanding and the Department’s mandate.</p>
<hr/> <p>Monitoring environmental impacts</p>	
<p>1.45 The boards should work with the operators to improve the transparency, accessibility, and utility of the environmental effects monitoring programs and the results obtained. This should include facilitating continuous improvement and collaborative research involving industry, government, and academia, with the aim of improving understanding of the effects of oil and gas activities on the offshore environment. (1.39–1.44)</p>	<p>The boards’ response. Agreed. The Newfoundland–Labrador Board currently publishes the results from environmental effects monitoring programs on its website. It will continue to work with operators and government agencies and external reviewers to ensure that the programs remain transparent and relevant. Subject to the cited constraints of the Accord Acts, the Nova Scotia Board will seek the cooperation of relevant parties to implement this recommendation.</p>
<hr/> <p>Ensuring compliance with environmental requirements</p>	
<p>1.54 Each board should establish a systematic process to prepare an annual risk-based audit plan and use it to implement audits of operators’ management systems in keeping with board policies. (1.49–1.53)</p>	<p>The boards’ response. Agreed. The boards will incorporate a risk classification matrix into their current auditing and inspection policies and procedures to further strengthen the systematic manner in which annual risk-based audit plans are developed. This will be done commensurate with the scale of offshore operations within the respective jurisdictions.</p>

Recommendation	Response
<p>Preparing for and responding to spills</p> <p>1.70 The Newfoundland–Labrador Board should complete its review of the spill response capability of operators under its jurisdiction as soon as possible. (1.68–1.69)</p> <p>1.72 The boards should seek the advice of Transport Canada, the Canadian Coast Guard, and international partners to design an approach for third party verification of the capacity of organizations that would respond to spills from offshore oil and gas facilities. (1.71)</p> <p>1.84 The boards should work with appropriate federal departments and agencies, and other organizations as necessary, to ensure that individual and collective response plans for a major oil spill are adequately resourced and coordinated, well defined, and regularly tested, individually and collectively. The plans should be supported by up-to-date and effective memoranda of understanding between all involved parties. (1.73–1.83)</p>	<p>The Board’s response. Agreed. The Newfoundland–Labrador Board will complete its review by 31 March 2013.</p> <p>The boards’ response. The boards agree with this recommendation with the following understanding: According to legislation, the boards’ role is to assess the adequacy of operators’ spill response plans and commitments to ensure their sufficiency and robustness. The operators hold the duty to verify the capacity of any organizations that support those plans.</p> <p>In keeping with the legislated regulatory regime, the boards commit to tasking operators with defining an approach—to the satisfaction of the boards—that ensures third party verification of the capacity of organizations that they would rely on for responding to spills from offshore oil and gas facilities. In providing guidance to operators in undertaking this task, and in evaluating the acceptability of proposed approaches, the boards will consult with Transport Canada and the Canadian Coast Guard.</p> <p>The boards’ response. Agreed. The boards are current in their involvement with the operators who, as first responders, are legally required to respond to any spill event.</p> <p>The boards will continue to work with appropriate federal departments and agencies to ensure that the individual and collective response plans for responding to a major oil spill remain up to date. These plans will be supported by updated memoranda of understanding as appropriate.</p> <p>The Nova Scotia Board will complete these actions prior to a future exploratory drilling program that may encounter oil (earliest expected date is 2015).</p>

Recommendation	Response
<p>1.85 Natural Resources Canada, the Canadian Coast Guard, Transport Canada, and Environment Canada should work with the boards and others, as necessary, to establish and clarify the roles and responsibilities of federal government departments and agencies in the event of a major oil spill, as well as the resources that would be available. This should include a coordinated response plan. (1.78–1.83)</p>	<p>The departments’ response. Agreed (by Natural Resources Canada, Canadian Coast Guard, Transport Canada, and Environment Canada). The roles and responsibilities of federal departments, agencies, and the boards in the event of a spill are established by various acts and regulations. The nature of a spill would determine the departments and agencies involved, as well as their level of engagement. In 2011, Natural Resources Canada and federal departments and agencies conducted two tabletop spill response exercises, and have continued to work together on a range of issues related to oil spills. The departments will work together and with the boards to review roles and responsibilities related to the response to a major oil spill. The review will take into consideration the legal authority, mandate, and available resources of each organization, and identify gaps, while acknowledging the primary role of the operator in spill response. In addition, Natural Resources Canada commits to hosting an annual simulation exercise with its partners.</p>
<p>1.91 The boards should develop and maintain systematic practices for identifying and applying lessons learned from their own and other jurisdictions. They should integrate what they have learned with the boards’ procedures for continuous improvement and with lessons learned processes in federal departments and agencies. (1.86–1.90)</p>	<p>The boards’ response. Agreed. The boards currently have processes in place by which lessons learned from their own and other jurisdictions are applied. This was shown in the <i>Macondo Deepwater Horizon</i> event and by the Review of Offshore Oil-spill Prevention and Remediation Requirements and Practices in Newfoundland and Labrador, with departmental managers at both boards assessing the numerous reports and modifying board practices, where necessary. Internationally, many of these lessons learned are available to us through our charter member status in the International Regulators’ Forum and the International Offshore Petroleum Environmental Regulators’ Forum in which the Boards will continue their memberships. Additionally, the boards will continue to liaise with federal departments, agencies, and non-governmental organizations. The boards’ internal practices and procedures will be strengthened by applying a systematic process to maintain their high standard.</p>

Recommendation	Response
<p>Supporting key environmental decisions</p> <p>1.102 Given the new environmental assessment legislation, the boards should document or update their policies and procedures, and update their memoranda of understanding with their federal partners, including Environment Canada and Fisheries and Oceans Canada, to ensure that the boards will have the capacity for effective environmental review of projects not designated under the <i>Canadian Environmental Assessment Act, 2012</i>. (1.100–1.101)</p>	<p>The boards’ response. Agreed. The boards are undertaking a review of their processes for environmental assessment of projects not designated under the <i>Canadian Environmental Assessment Act, 2012</i> (CEAA 2012) and will update their policies and procedures by the end of the first quarter of 2013 at the latest. In the interim, since the adoption of the CEAA 2012, the boards have been reviewing the potential environmental effects of proposed activities in a manner consistent with the previously existing <i>Canadian Environmental Assessment Act</i> (S.C. 1992, c. 37), and publishing the associated documents on their websites. The boards have already commenced the process of updating existing memoranda of understanding with Environment Canada and with Fisheries and Oceans Canada.</p> <p>Environment Canada’s response. Agreed. Environment Canada agrees to work with the boards to discuss their needs, determine what it could provide to address those needs, and reflect any formal agreement in an updated memorandum of understanding.</p> <p>Fisheries and Oceans Canada’s response. Agreed. Fisheries and Oceans Canada will continue to work collaboratively with the boards by providing expert advice on fish, fish habitat, fisheries, and aquatic species at risk for existing and forthcoming environmental reviews of projects as per our commitment in the memoranda of understanding. Over the long term, the Department will work with the boards to update the memoranda of understanding to clarify their roles and responsibilities in the light of the recent legislative change (<i>Canadian Environmental Assessment Act, 2012</i>).</p>

Recommendation	Response
<p>1.104 Working with the boards and its other partners, Natural Resources Canada should assess the capacity of the boards to exercise their responsibilities, including how they rely on other federal parties, and should explore opportunities for sharing expertise among those responsible for offshore oil and gas activities. (1.93–1.101, 1.103)</p>	<p>The Department’s and boards’ response. Agreed. Natural Resources Canada will work with the boards and the respective provincial governments to assess the capacity of the boards to exercise their responsibilities. The Department will establish a senior level committee to meet regularly to bring together the departments and agencies with responsibility and expertise related to offshore oil and gas activities to further coordination and knowledge sharing.</p> <p>The boards are willing to be part of an ongoing discussion with relevant federal departments and agencies to ensure that the requirements for effective spill prevention and response and the sharing of expertise and coordination needed for effecting this are addressed on a continuous basis.</p>