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Federal Contaminated Sites Action Plan (FCSAP) ANNUAL REPORT (2013-2014)





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Federal Contaminated Sites Action Plan: 2013-2014 Annual Report

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EXECUTIVE SUMMARY

Established by the Government of Canada in 2005, the Federal Contaminated Sites Action Plan (FCSAP) is a 15-year, \$4.2-billion program. Its primary objective is to reduce environmental and human-health risks and related financial liabilities from federal contaminated sites.

In Phase I of FCSAP (2005-2011), federal departments, agencies and consolidated Crown corporations (also referred to as custodians) made significant progress in addressing contaminated sites. FCSAP Phase II was approved in fiscal year 2011-2012 to continue this work for five years, with a focus on the remediation of the highest-priority sites. A third phase is planned for 2016-2020. This report describes the progress made in fiscal year 2013-2014, the third year of Phase II.

Nationally, federal departments involved in FCSAP reported total expenditures of \$329.5 million in fiscal year 2013-2014. This includes \$8.9 million spent on assessments, \$300 million spent on the remediation and risk management of federal contaminated sites, and \$20.6 million for program management activities. In fiscal year 2013-2014, the program achieved several results:

- Custodians conducted assessments at 347 sites, to characterize environmental conditions; of the 163 sites that were fully assessed, 39% require remediation or risk management, while 61% require no further action, as they pose no significant risk.
- Custodians conducted remediation and risk-management activities at 368 sites, resulting in improvements to environmental quality and reduction of federal financial liability; at 22 of these, the remediation process was completed.
- Approximately 1600 jobs (person-years) were created or maintained, with an estimated 5.2 direct jobs resulting from every million dollars spent on FCSAP projects.

These results are reflected in the Federal Contaminated Sites Inventory (FCSI), which is maintained by the Treasury Board of Canada Secretariat. At the end of fiscal year 2013-2014, the FCSI listed approximately 22 590 sites. A comparison of FCSI data from fiscal years 2012-2013 and 2013-2014 shows that the number of sites suspected of being contaminated decreased by 25%. There was also a 6% decrease in the number of active sites and a 14% increase in the number of closed sites, where no further action will be required. Much of this progress was a result of the FCSAP funding available, which allowed custodians to conduct assessment and remediation work at their sites. Approximately 76% of expenditures reported to the FCSI in fiscal year 2013-2014 were attributable to FCSAP, as not all federal contaminated sites are part of the program.

Contamination of federal sites may translate into liability for the Government of Canada, when appropriate accounting criteria are met. The total liability for the remediation of all federal contaminated sites decreased by \$95 million to a total of \$4.796 billion during fiscal year 2013-2014. Adjusted liability, an estimate of the liability for sites eligible for FCSAP funding, increased by \$47 million to a total of \$3.651 billion during fiscal year 2013-2014. Adjusted liability is expected to decline eventually, as fewer new sites are added to the federal inventory and more existing sites are remediated.

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ABBREVIATIONS AND ACRONYMS

AAFC	Agriculture and Agri-Food Canada
AANDC	Aboriginal Affairs and Northern Development Canada
CBSA	Canada Border Services Agency
CCME	Canadian Council of Ministers of the Environment
CSC	Correctional Service of Canada
DFO	Fisheries and Oceans Canada
DND	Department of National Defence
EC	Environment Canada
FCSAP	Federal Contaminated Sites Action Plan
FCSI	Federal Contaminated Sites Inventory
HSC	Highest step completed
IC	Industry Canada
JCCBI	Jacques Cartier and Champlain Bridges Incorporated
LED	Lands and Economic Development
NAO	Northern Affairs Organization
NCC	National Capital Commission
NRC	National Research Council
NRCan	Natural Resources Canada
PCA	Parks Canada Agency
PWGSC	Public Works and Government Services Canada
RCMP	Royal Canadian Mounted Police
TBS	Treasury Board of Canada Secretariat
TC	Transport Canada

1 INTRODUCTION

The Federal Contaminated Sites Action Plan (FCSAP) is a \$4.2-billion, 15-year program introduced by the Government of Canada in 2005. Its goal is to reduce environmental and human-health risks posed by the highest-priority legacy federal contaminated sites, along with the associated federal financial liabilities. Federal departments, agencies and consolidated Crown corporations are referred to as custodians of the FCSAP program and share costs with FCSAP.

Federal contaminated sites are located on land or aquatic areas owned or leased by the federal government, or where the federal government has accepted responsibility for the contamination. FCSAP projects on federal properties include harbours and ports, military bases, airports, lighthouses, school facilities and fuel storage tanks on reserve land, and abandoned mines. Contamination at these sites is often the result of historical activities that took place without an understanding of the environmental consequences.

The FCSAP program provides a consistent approach to dealing with contaminated sites. Before FCSAP, federal departments, agencies and consolidated Crown corporations spent up to \$100 million annually to remediate or manage risks associated with contaminated sites. Since the start of the program in 2005 to April 2014, \$2.4 billion, including the custodian cost share, has been spent on assessment, remediation and risk management, and program management activities.

Environment Canada provides program administration through the FCSAP Secretariat, with support from the Treasury Board of Canada Secretariat. Environment Canada, Fisheries and Oceans Canada, Health Canada, and Public Works and Government Services Canada provide expert advice and technical assistance to custodians in support of the program. For more information about the administration of FCSAP, see Appendix A.

FCSAP objective

Reduce human-health and environmental risks and associated federal financial liabilities at the highest-priority federal contaminated sites.

Types of funding

FCSAP provides funding for the assessment and remediation of contaminated sites that are under the responsibility of federal departments, agencies or consolidated Crown corporations and have been contaminated by historical activities, defined as occurring before April 1, 1998.

FCSAP funds the remediation of two classes of terrestrial¹ and aquatic² sites:

- **Class 1:** sites where there is a high priority for action or where action is required.
- **Class 2:** sites where there is a medium priority for action or where action is likely required. To be eligible for funding in Phase II, Class 2 sites must have spent FCSAP remediation expenditures before April 1, 2011.

Contaminated Site

According to the Treasury Board of Canada's Policy on Management of Real Property, a contaminated site is "a site at which substances occur at concentrations that: (1) are above background levels and pose, or are likely to pose, an immediate or long-term hazard to human health or the environment, or (2) exceed the levels specified in policies and regulations."

¹ Terrestrial sites are classified in accordance with the Canadian Council of Ministers of the Environment National Classification System for Contaminated Sites (2008): www.ccme.ca/en/resources/contaminated_site_management/management.html.

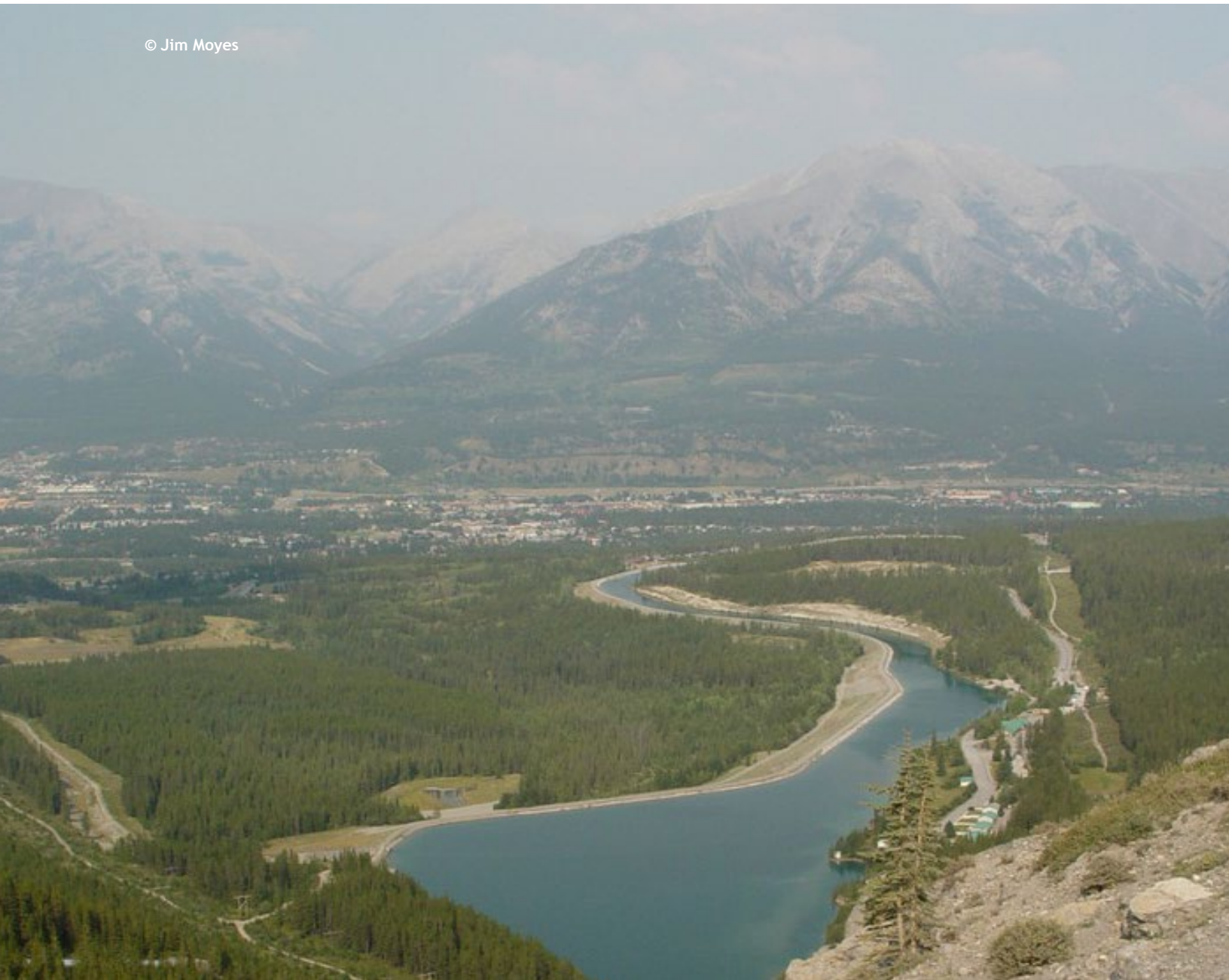
² Aquatic sites are classified in accordance with the FCSAP Aquatic Sites Classification System (2012).

The program also provides socio-economic benefits by creating or maintaining jobs in the Canadian environmental remediation industry, offering training and employment opportunities for Aboriginal people and those living in rural areas, and promoting innovative and sustainable remediation technologies.

This report presents program results and achievements from fiscal year 2013-2014, which was the third year of Phase II. Building on the progress made in Phase I (2005-2011), Phase II will run until fiscal year 2015-2016 and focus on the remediation of the highest-priority sites.

More information on FCSAP is available online at www.federalcontaminatedsites.gc.ca.

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PROGRAM RESULTS (2013-2014)

This section describes the achievements of the 16 custodians that conducted assessment and remediation activities in fiscal year 2013-2014. It also compares program progress against performance measurement targets established for Phase II of the Federal Contaminated Sites Action Plan (FCSAP). Case studies of assessment and remediation activities undertaken during fiscal year 2013-2014 at a number of FCSAP-funded sites are included throughout this report.

The FCSAP Secretariat worked with the Treasury Board of Canada Secretariat and custodians to establish performance indicators, along with both three- and five-year targets, to assess the performance of FCSAP against the program objective. The Federal Contaminated Sites Director General Steering Committee then approved these indicators and targets.

The indicators and targets, identified in the FCSAP performance measurement strategy, fall into three key program areas:

1. assessment,
2. risk reduction, and
3. liability reduction

2.1 ASSESSMENT

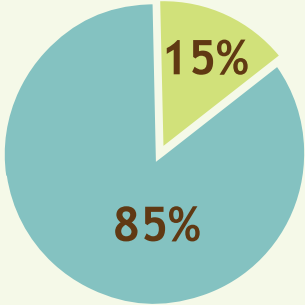
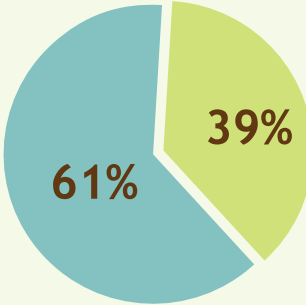

Custodians may suspect a site of being contaminated as a result of past activities; for example, a site where fuel storage tanks were used and that may have leaked. In such cases, environmental site assessments are conducted to determine the nature and extent of contamination, and whether remediation or risk-management activities are required at the site. FCSAP-funded assessment activities took place on 347 sites, including 125 sites first funded in fiscal year 2013-2014, at a program cost of \$6.7 million; custodians spent an additional \$2.2 million exceeding the FCSAP cost-sharing requirement for assessment. After the third year of Phase II, custodians were able to meet 85% of the three-year performance target and are on track to meet the five-year target, as shown in Table 1. The assessment targets for Phase II were established based on the number of assessments conducted in Phase I and the total cost of this work, and serve as a general measure of expected progress.

Overview of program results

for fiscal year 2013–2014:

- Assessment activities on 347 sites cost \$8.9 million, including the custodians' share of the costs. Of the 163 sites that were fully assessed, 39% require remediation or risk management, while 61% require no further action.
- Remediation and risk-management activities on 368 sites cost \$300 million, including the custodians' share of the costs. Custodians completed remediation activities on 22 of these sites, while work will continue on the remaining 346 sites.
- Adjusted liability, an estimate of liability for contaminated sites eligible for FCSAP funding, increased by \$47 million from fiscal year 2012–2013 to 2013–2014.

Table 1: Performance indicator 1: Assessing sites

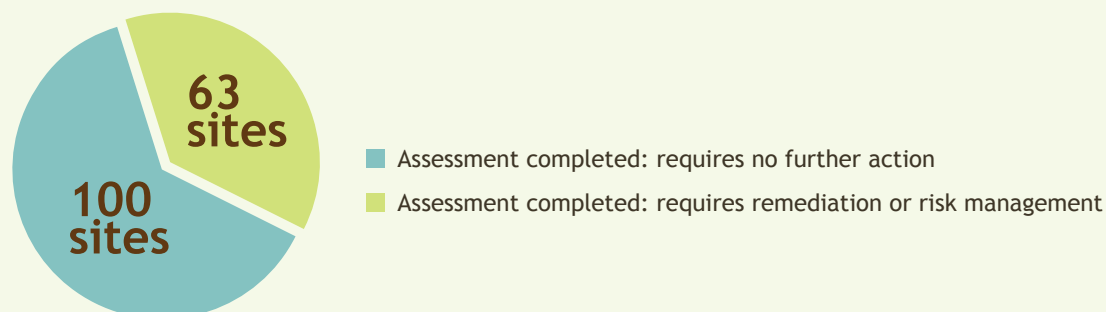
Performance indicator	Result (as of 2013-2014)	Three-year target (2011-2012 to 2013-2014)	Five-year target (2011-2012 to 2015-2016)
Number of sites where FCSAP-funded assessments are being conducted	1395 sites	1650 sites  85% of target reached	2300 sites  ✓ On track 

An environmental site assessment may involve taking samples and testing for levels of contamination above environmental quality guidelines. The Canadian Council of Ministers of the Environment (CCME) has published environmental quality guidelines on the management of contaminants in soils, sediments, freshwater and marine water.³ In cases where the risk from contamination is low, the custodian can set a low priority for future action. Where there is no unacceptable risk, the custodian can close the site, indicating that no further assessment or remediation action is required at the site. To ensure that custodians take a common approach to managing federal contaminated sites, FCSAP follows a 10-step process, detailed in Appendix B.

At the 347 sites where assessments took place, custodians completed the assessment process at 163 sites, while 184 sites require more assessment work to adequately characterize the risk that contaminants pose.

Figure 1 shows the results of completed site assessments. Of these sites, 100 (61%) require no further action and 63 (39%) require remediation or risk management. These results are consistent with the trend observed during FCSAP Phase I: most sites that are assessed do not require remediation.

Figure 1: Results of completed site assessments (2013-2014)



³ www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html



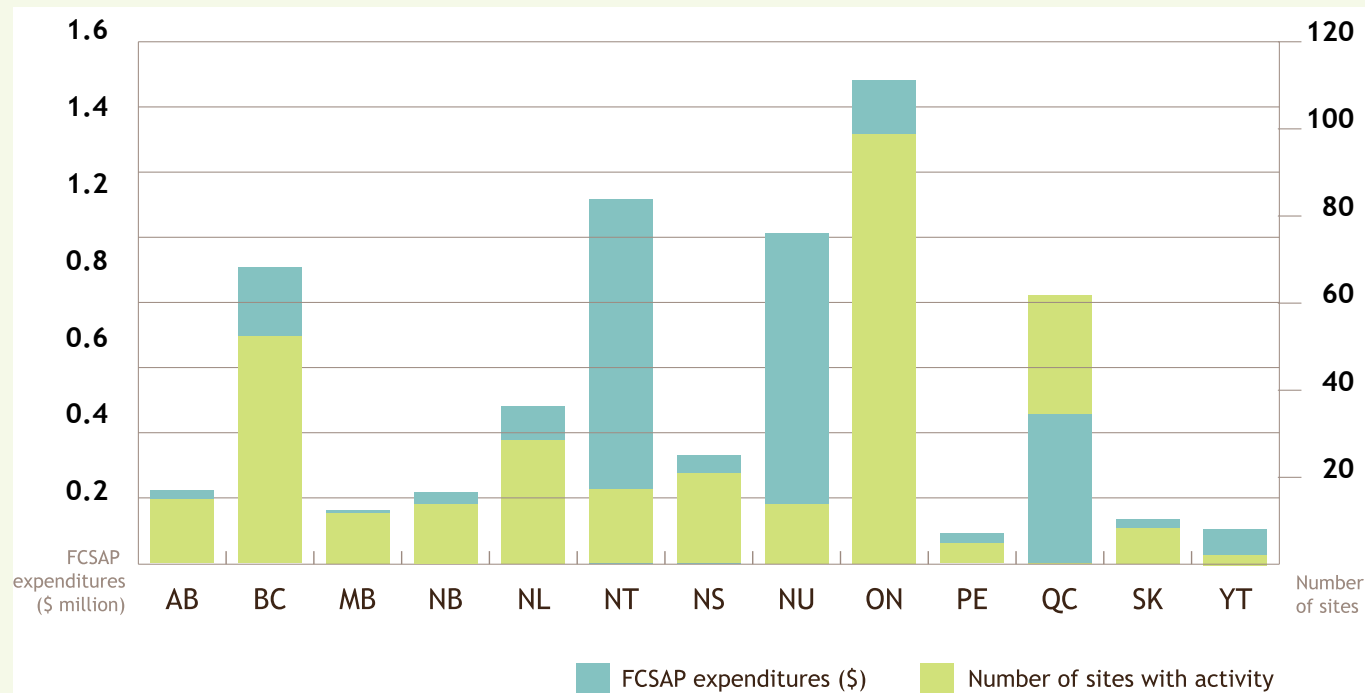
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Table C.1 in Appendix C provides a detailed breakdown of each custodian's number of sites, with assessment activity, available assessment funding and assessment expenditures.

The three custodians that spent the most on assessments were Environment Canada, Fisheries and Oceans Canada, and Aboriginal Affairs and Northern Development Canada's Northern Affairs Organization (AANDC-NAO), which together spent \$3.9 million of the \$6.7 million (or 58%) of the FCSAP assessment expenditures reported in fiscal year 2013-2014. These three custodians conducted about half of all FCSAP-funded site assessments (160 of 347, or 46%) in fiscal year 2013-2014.

As shown in Figure 2, the largest expenditures occurred in Ontario, the Northwest Territories, Nunavut and British Columbia, accounting for 67% of total FCSAP assessment expenditures, though the largest number of sites assessed were in Ontario, Quebec and British Columbia (61% of the total).

Figure 2: Distribution of FCSAP assessment expenditures and activity, by province or territory



CASE STUDY

PROGRESS ON ASSESSMENT AT THE ISACHSEN HIGH ARCTIC WEATHER STATION

Location: Ellef Ringnes Island, Nunavut
Custodian: Environment Canada

The Isachsen High Arctic Weather Station was established in 1948 as part of a Canada-United States plan to construct a network of Joint Arctic Weather Stations. At 78°N latitude, Isachsen is very remote, and its severe weather presents a challenging work environment; the property received a 99 out of 100 on the Environment Canada Climate Severity Index. The soil is frozen except in July and August, when most fieldwork occurs; even then, severe weather events can hinder or prevent investigation.

In 1978, the Government of Canada decided to decommission the Isachsen station as a cost-cutting measure; staff abandoned the equipment, structures and waste materials at the site. These included a main landfill, two smaller dumps, over 11 000 barrels, 41 pieces of equipment, fuel tanks, and both hazardous and non-hazardous waste. Between 1995 and 2005, the government carried out initial assessment activities and developed decommissioning plans, but a lack of available information on the nature and extent of contaminants and hazardous materials, along with scarce funding for decommissioning, prevented their implementation. Nevertheless, known past activities, such as improper waste disposal, and fuel and chemical handling and storage, were sufficient to identify the Isachsen station as a contaminated site. Associated contaminants included heavy metals, petroleum hydrocarbons and polycyclic aromatic hydrocarbons.

Through FCSAP, financial resources were available to recommence assessment of this property in fiscal year 2009-2010. However, inhospitable weather conditions prevented the assessment team from landing on-site for longer than a few hours; the team was able to complete only a limited Phase I environmental site assessment.

A successful field program in fiscal year 2013-2014 allowed for the completion of a limited Phase II assessment, which focused on 11 of the highest-priority areas across the property, including landfills, barrel-storage areas, and around some of the infrastructure. This assessment served to increase knowledge of current site conditions, applicability of field screening methods to the contaminants, background soil concentrations, and potential remedial options for debris and waste. Seventeen areas of environmental concern remain to be assessed. Environment Canada considers that completing the assessment at the Isachsen High Arctic Weather Station is a high priority.

The focus of future assessment will be to collect enough data to develop a risk-assessment and remedial-option analysis using a risk-based site-assessment approach and adaptive site-investigation techniques to focus data collection and maximize the value of additional fieldwork.



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CASE STUDY

QUINSAM HATCHERY RISK ASSESSMENT

Location: Campbell River, Vancouver Island, British Columbia
Custodian: Fisheries and Oceans Canada

Operating since 1974, the Quinsam River Hatchery has played a vital role in restoring natural spawning runs of coho, chinook and pink salmon to the Campbell and Quinsam rivers in British Columbia. It also serves as both a tourist attraction and educational centre.

Historically, the site had an underground fuel and heating distribution system, which operators abandoned in place when new power systems were designed. It is possible that the distribution system had been leaking for a number of years. Furthermore, a large fuel spill occurred in the 1980s in the area close to the clarifier ponds, which are large central ponds that allow particulates from the water used for rearing fish to settle out of the water column before it is discharged into the river.

Remediation of the spill in this area would have been prohibitively costly, and require the hatchery to be taken out of service, possibly for an entire season; this was unacceptable to the community and departmental mandates. Fisheries and Oceans Canada undertook an assessment to determine whether the gradual transport of dissolved petroleum hydrocarbons from the spill through groundwater posed any unacceptable risks to the river biota and the site's rearing channels, which provide young fish with both space and a diet scientifically formulated to encourage growth and ensure good health.

The Department then completed detailed hydrogeological modelling to determine whether the groundwater conditions were stable or, if not, to identify the likely maximum concentration. The results showed that contaminant levels in groundwater had likely already reached their maximum concentrations. Allowing natural attenuation to continue would therefore be preferable to remediation, as this option would not interrupt fish production nor affect the wild fish populations migrating and spawning in the river system. Natural attenuation describes a variety of physical, chemical or biological processes that, under favourable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume or concentration of contaminants in soil, sediments or groundwater. These processes can include biodegradation, dispersion, volatilization, and the transformation or destruction of contaminants.

The Department then completed a detailed human-health and ecological-risk assessment for a monitored natural-attenuation plan for the site. Ongoing groundwater monitoring of the attenuation is planned through 2015 to ensure that the assumptions made in the risk assessment are valid. Any future construction activities, such as replacement of the clarifiers, include remedial excavation of the affected area.



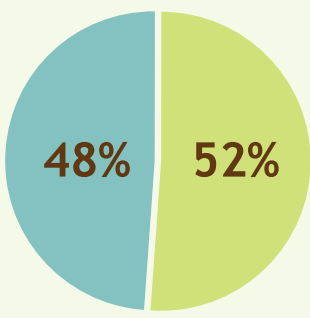
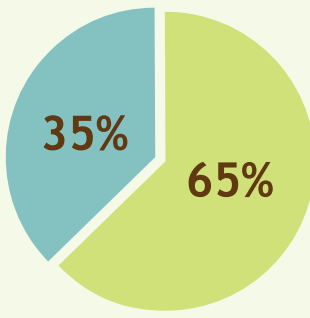
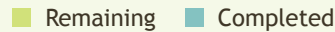
2.2 REDUCTION OF RISKS TO HUMAN HEALTH AND THE ENVIRONMENT

If the completed site-assessment activities have determined that the risks to human health or the environment are unacceptable based on established guidelines for contaminant limits, custodians may conduct remediation and risk-management activities. These activities can include the removal, treatment, reduction or containment of contaminants, to prevent exposure that could affect human health and the environment. The methods used to address the contamination at each site depend on their efficacy and cost-effectiveness, and on the unique circumstances of the site.

In fiscal year 2013-2014, FCSAP funded remediation activities at 368 sites, at a cost of \$270.6 million. Custodians spent an additional \$29.4 million, exceeding the FCSAP cost-sharing requirement for remediation. Table C.2 in Appendix C provides a breakdown of each custodian's share of the costs.

The remediation target for Phase II was established based on the number of remediation sites worked on in Phase I and the total cost of this work. After the third year of Phase II, the remediation and risk-management activity fell short of the three-year target, as shown in Table 2. There is a risk that the five-year target will not be met, as custodians are focusing on fewer but more costly and complex high-priority remediation sites in Phase II than they did in Phase I. The number of remediation activities being conducted by custodians also depends on the amount of funding that can be spent. Custodians were not able to spend all of the FCSAP funding available to them in fiscal year 2013-2014, due to reasons such as unpredictable weather conditions and contracting delays impacting the number of sites that custodians were able to work on.

Table 2: Performance indicator 2: Starting remediation

Performance indicator	Result (as of 2013-2014)	Three-year target (2011-2012 to 2013-2014)	Five-year target (2011-2012 to 2015-2016)
Number of priority FCSAP-funded sites where risk-reduction activities are being conducted	531 sites	1100 sites 	1500 sites 
			

Of the 368 sites where remediation was under way in fiscal year 2013-2014, the remediation phase (Step 8 of the 10-step process set out in A Federal Approach to Contaminated Sites, detailed in Appendix B) was completed at 22 sites, signifying that risks have been reduced to safe levels. Risk-reduction activities will continue at the remaining 346 sites. While the number of sites undergoing remediation varies from year to year, the fiscal year 2013-2014 result suggests that the five-year target of completing risk-reduction

CASE STUDY

RISK ASSESSMENT AT THE LACHINE CANAL NATIONAL HISTORIC SITE OF CANADA

Location: Lachine Canal National Historic Site of Canada, Montréal, Quebec
Custodian: Parks Canada Agency

Site 15.6 is a recreational strip of land along the north shore of the Lachine Canal in Montréal. With an area of nearly 5000 m², the site was used for 150 years as a storage, handling, and transit facility for goods (notably coal) by nearby smelters and other industries. In recent years, several residential development projects have transformed this former industrial area and led to increased pedestrian traffic and recreational activities along the canal.

Parks Canada's environmental site assessments of the soil revealed the presence of petroleum hydrocarbons, benzene, polycyclic aromatic hydrocarbons, and metals such as arsenic, copper, tin, nickel, lead and zinc at concentrations above the Canadian Council of Ministers of the Environment environmental quality guidelines for residential or parkland use. The complete remediation of the contaminated soil by the conventional method of excavation and disposal of the soil was estimated at more than \$2 million.

Parks Canada responded by developing an environmental and human-health risk-assessment study targeted to current and future land uses of the site. The study demonstrated that removing contaminated surface soils from a well-defined area would reduce the risks significantly while cutting remediation costs by more than 90%.

The risk assessment will also allow Parks Canada to comply with environmental and legal obligations at the site at significantly lower costs, while reducing disturbances to area residents by limiting the duration and scope of the remediation work. The remediation measures will also take into account consultations with adjacent developers, and ensure that the site is fully compatible with recreational activities, without the risks associated with historical contamination.



CASE STUDY

SOIL REMEDIATION ON A FIRST NATION RESERVE: LOWER POST FORMER RESIDENTIAL SCHOOL REMEDIATION PROJECT

Location: Lower Post, British Columbia

Custodian: Aboriginal Affairs and Northern Development Canada

The community of Lower Post, situated within Liard River Indian Reserve No. 3 in northern British Columbia, is part of one of the Daylu Dena Council bands, and has about 120 residents. The 7500 m² site is a former residential school, located in the centre of the community, which holds great significance to the community and residential school survivors throughout the province. The demolition of the school complex and remediation of this site will not only restore the health of the land, but will also assist in improving the community's social and emotional well-being.

After a fire in the 1980s destroyed most of the school complex, debris from the main building and outbuildings was bulldozed into what remained of the residence basement and buried at the site. The buried material included asbestos, lead paint and fuel-contaminated soil. Residents are at risk of exposure to petroleum hydrocarbons and asbestos through dermal contact and inhalation.

The Department has been actively working with the Daylu Dena Council to reduce the contamination risks at the site. In 2010, an assessment of the remaining school complex for environmental damage was completed. In 2011, contractors began to dig up the buried material. Most of the former residential school complex was demolished, the contaminated soil and debris were transported to an approved waste-disposal facility, and then the area was

backfilled with uncontaminated soil and landscaped. Nine monitoring wells were also installed to test local groundwater for contamination.

In 2012, after a very serious spring flood in Lower Post, one monitoring well indicated increased levels of hydrocarbons. Further testing revealed soil contamination in two areas that had not been previously identified. In 2013, the Department continued working with the community in cleaning up this contamination. The project's remediation phase is scheduled for completion in the 2015-2016 fiscal year, followed by three years of monitoring and official site closure in 2019. After site closure, the Department will continue to monitor the groundwater wells and the community water supply.

The remediation project has brought several other benefits to the community, including local employment, social well-being, self-sufficiency and economic prosperity. The community has increased its capacity for environmental management, and the remediation has been an opportunity to improve the relationship between the Department and the First Nation.



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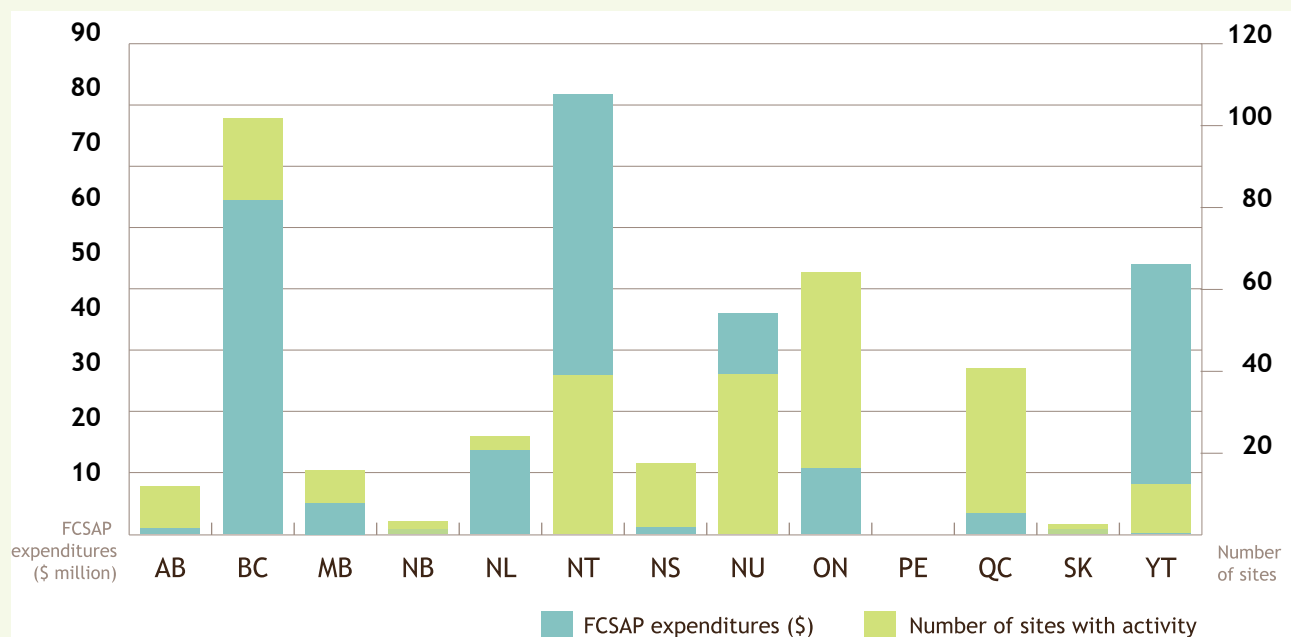
activities at 368 sites will not be achieved, as shown in Table 3. The main reason the target will not be met is that the work to implement the remediation or risk-management plans has taken longer than custodians anticipated when the target was established in fiscal year 2011-2012. This is not uncommon in contaminated sites projects, since additional contamination can be discovered once the project begins. There can also be project delays caused by weather or unplanned technical issues.

Table 3: Performance indicator 3: Completing remediation

Performance indicator	Result (as of 2013-2014)	Five-year target (2011-2012 to 2015-2016)
Number of priority FCSAP-funded sites where risk-reduction activities have been completed	101 sites	368 sites <p>27% Completed, 73% Remaining</p>

As Figure 3 shows, the largest FCSAP expenditures on remediation activities occurred in the three territories and British Columbia, accounting for 85% of the total.

Figure 3: Distribution of FCSAP remediation expenditures and activity, by province or territory



Two departments account for 69% of this spending: AANDC-NAO (\$140 million) and the Department of National Defence (\$46 million). Both of these departments are working on the remediation of large, complex and remote sites. For example, approximately \$116 million (43% of total expenditures) was spent in fiscal year 2013-2014 at three projects: Giant Mine in the Northwest Territories, Faro Mine in Yukon, and 5 Wing Goose Bay in Newfoundland and Labrador. For a complete list of sites with FCSAP remediation expenditures, see Table C.5 in Appendix C.

2.3 LIABILITY REDUCTION

Environmental liabilities are the estimated remaining costs related to the remediation of contaminated sites, where the Government of Canada is obligated, or will likely be obligated, to incur such costs. Liabilities are recorded annually in the Public Accounts of Canada.

Appendix D provides more information on the environmental liability of federal contaminated sites, along with a detailed breakdown by department.

FCSAP provides funding for only a portion of the sites that make up the total environmental liability reported in the Public Accounts of Canada. This is because some consolidated Crown corporations and other entities that report liabilities to the Public Accounts of Canada are responsible for contaminated sites that are not eligible to receive FCSAP funding (for example, because the sites are low-risk, or because the activities that caused the contamination occurred after April 1, 1998). Furthermore, some exceptional sites, such as the Sydney Tar Ponds and the low-level radioactive waste sites of the Port Hope Area Initiative, have their own funding sources. For a more accurate estimate of the impact of FCSAP on the Government of Canada's total liability, Table D.1 in Appendix D provides a calculation of adjusted liability, which is an estimate of liability for contaminated sites eligible for FCSAP funding.

The total liability for the remediation of contaminated sites, as reported in the Public Accounts of Canada, decreased by \$95 million from \$4.891 billion for 2300 sites, as of March 31, 2013, to \$4.796 billion for 2500 sites, as of March 31, 2014. The adjusted liability increased by approximately \$47 million over the same period.

The increase in adjusted liability is largely attributable to Aboriginal Affairs and Northern Development Canada, which reported an increase of \$72 million in total liability in fiscal year 2013-2014. The Department of National Defence also reported an increase in total liability by approximately \$55 million. Among the nine departments that reported increases in total liability, these two departments accounted for 94% of the total increase in adjusted liability. Despite this overall increase, 7 of 16 departments reported a decrease in total liability. Two of these departments (Public Works and Government Services Canada and the Royal Canadian Mounted Police) reduced their total liability by more than 20%, as detailed in Table D.2 in Appendix D.

Changes in total liability for the remediation of contaminated sites can be attributed to several factors. Remediation expenditures at contaminated sites contribute to decreases in liability, while increases may result from the completion of assessment activities at certain sites, and the subsequent reporting of liabilities there for the first time. Changes in the estimated remediation costs, as better information becomes available at some sites, can also lead to increases or decreases in recorded liability. Liability is also subject to change from the variability of the Consumer Price Index rate (inflation) and in the lending rate (calculation of net present value), which can have a significant impact on the liabilities for high-cost projects.

CASE STUDY

REMEDIATION OF THE SHIRLEY ROAD DUMP SITE

Location: 5 Canadian Division Support Base (CDSB) Gagetown,
Oromocto, New Brunswick

Custodian: Department of National Defence

The Shirley Road dump site is located in the northern portion of an active Canadian Army Range and Training Area at 5 CDSB Gagetown. Starting in the 1950s, the site served for several decades as the primary waste-disposal location for the base and surrounding community. The site accumulated municipal waste, construction and demolition waste, fly ash, ordnance containers, materials containing polychlorinated biphenyls, and petroleum products.

The site also included a chemical-container disposal site, a soil bio-treatment facility, a sewage-sludge disposal site and an asbestos dump. These areas are in various stages of assessment under the FCSAP process.

Remediation of the dump site presented several challenges:

- The waste materials might contain ordnance, presenting an unacceptable safety risk to a remediation team;
- Geotechnical challenges in the adjacent saturated soils limited types of remediation; and
- The possibility of releasing contaminants during remediation could affect sensitive fish habitat and wetlands downstream that are protected under provincial legislation.

The Department therefore decided to leave the waste material in place and minimize leaching of contaminants. Qualified contractors installed a partial cap on the dump

portion of the site in 2009 to minimize the effects of the contamination on the surface water and the ecology directly downgradient. One of these receptors, a large wetland covering an area of approximately 21 hectares, is adjacent to the dump. The wetland is primarily vegetated with broad-leaf cattails and attenuates contaminants from the dump.

The Department's environmental consultant then conducted assessments of the risk to receptors and potential impairment of the wetlands' ecological function. An ecological risk assessment determined that concentrations of chemicals of concern in sediment and surface water did not pose unacceptable risk to ecological communities. A wetland functional assessment established that wetland function was impaired at the edge (or "toe") of the dump where groundwater tended to flow, but that this impairment diminished over a distance. These results, along with the annual monitoring results, suggested that the partial cap was working, though more data is needed to confirm this.

Work continues at the site, focusing on cleanup of waste materials on the toe of the slope, cap improvements and long-term monitoring. Success on this project is a result of consultations and collaboration with Defence Construction Canada, Environment Canada, Fisheries and Oceans Canada, the University of New Brunswick, consultants, and contractors.

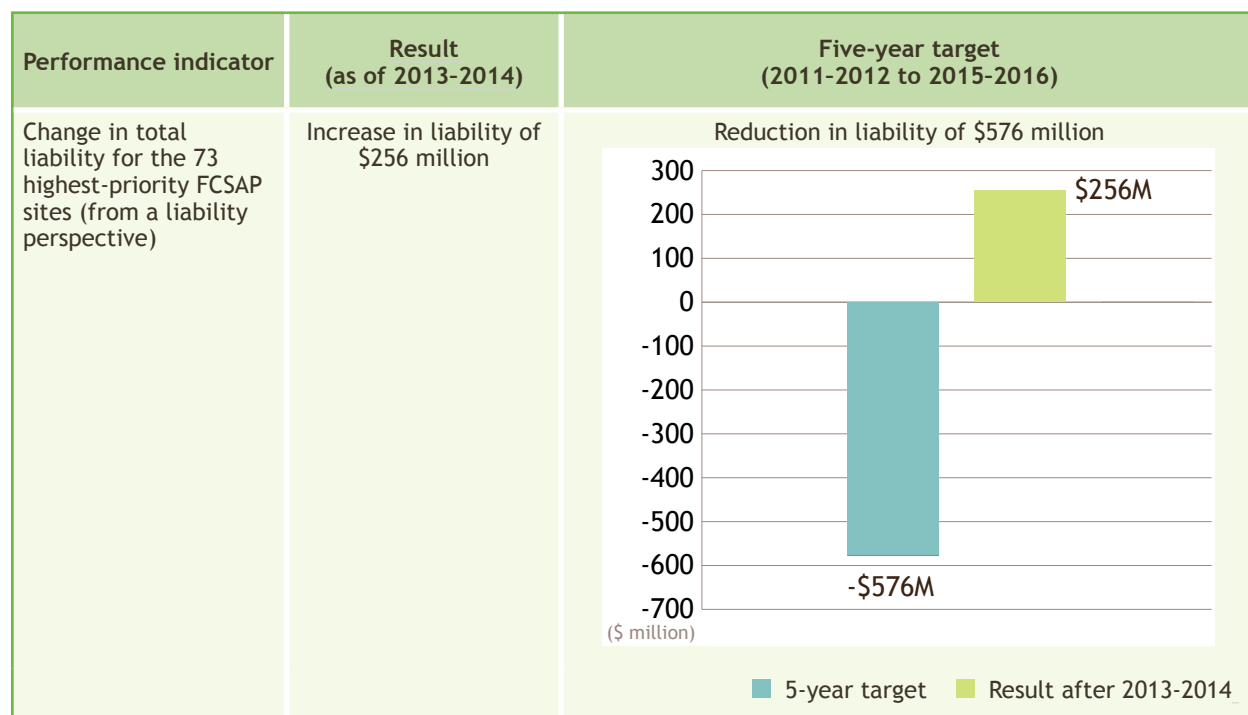


Remediation expenditures that reduced total liability by \$433 million were offset by \$262 million in increases to total liability resulting from changes in site-remediation costs, as well as by \$76 million in new liability for sites not previously recorded. As detailed in Table D.3 in Appendix D, these were factors in the \$95-million reduction in total liability.

The FCSAP performance measurement strategy sets out two indicators for the program objective of reducing liability.

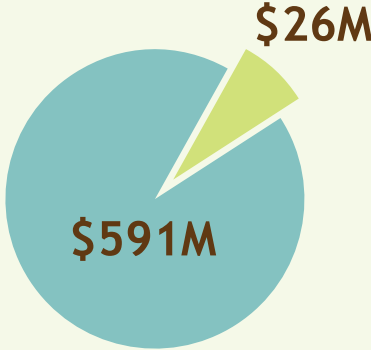
The first indicator is based on a list of 73 high-priority FCSAP sites where remediation activities will be or are being undertaken in Phase II. Custodians have estimated that liability will be reduced at these sites by \$576 million by the end of Phase II. As shown in Table 4, the liability at these sites increased by \$256 million from fiscal year 2010-2011 to 2013-2014. Despite the overall increase, liability at two thirds of these sites (48) was reduced by \$277 million, but this progress was masked by an increase in liability of \$533 million at 25 sites. Liability at Faro Mine increased by \$423 million, representing 79% of the \$533 million increase in liability. This large and complex project will take many years to navigate the 10-step process set out in A Federal Approach to Contaminated Sites. As a result, the multi-year cost projections for Faro will evolve over time as work progresses and additional information is obtained. Liability at Giant Mine decreased by \$16 million, representing 6% of the \$277 million decrease in liability.

Table 4: Performance indicator 4: Reducing liability at key sites



The second indicator relates to the percentage of remediation expenditures that reduce financial liability over the five years of Phase II. After the third year of Phase II, 96% of FCSAP remediation expenditures (\$591 million of \$617 million) led to reductions in liability, which exceeds the target of 95%, as shown in Table 5. While most of a given site's remediation expenditures may be included in the liability estimate for the site, some remediation activities do not reduce liability. These include the costs of unforeseen remediation activities that were required during the year but were not part of the recorded liability for the site.

Table 5: Performance indicator 5: Liability reduction effectiveness

Performance indicator	Result (as of 2013-2014)	Five-year target (2011-2012 to 2015-2016)
Percentage of remediation expenditures that reduce liability over the five years of FCSAP Phase II	96%	95% 
<div> ■ Remediation expenditures reducing liability ■ Other remediation expenditures ✓ On track </div>		

2.4 FCSAP SECONDARY BENEFITS

Many FCSAP projects have socio-economic benefits, particularly in Aboriginal communities and in northern or rural areas. Through joint ventures established between some custodial departments and local communities, work conducted on FCSAP sites offers opportunities for local residents and contractors to learn and develop skills, and to build careers and businesses. The partnerships forged among employed people and businesses, especially at the local level, help to foster a sense of ownership of project results.

During fiscal year 2013-2014, FCSAP activities led to the creation of approximately 1600 jobs,⁴ with an estimated 5.2 direct jobs created for every million dollars spent. These jobs provide income and fuel economic growth. They also require skills and training that workers can apply at other contaminated sites or at other types of projects altogether. For example, FCSAP remediation projects regularly employ northerners and northern Aboriginal Canadians as welders, heavy-duty mechanics, electricians and millwrights.

Through FCSAP, the Canadian remediation industry also has an opportunity to advance new solutions when cleaning up federal contaminated sites. The program builds awareness of innovative and sustainable technologies by sharing success stories within the federal community and the private sector, through case studies profiled online and in reports, and through workshops for federal site managers and industry representatives.

⁴ Based on a multiplier from ECO Canada, 2007

CASE STUDY

REMEDIATION AGREEMENT FOR THE BAR-C (TUNUNUK POINT) DISTANT EARLY WARNING LINE SITE

Location: Northwest Territories

Custodian: Aboriginal Affairs and Northern Development Canada (AANDC)

BAR-C (Tununuk Point) was one of the Distant Early Warning (DEW) Line radar stations used to detect incoming hostile aircraft in the Cold War. The Department of National Defence transferred responsibility for the site to AANDC (formerly INAC) in 1963, along with 20 other DEW Line sites that were decommissioned at the time.

Tununuk Point is located on Inuvialuit private lands within the Inuvialuit Settlement Region, approximately 80 kilometres north-northwest of Inuvik, Northwest Territories. Over the years, the site was used by several parties, for various purposes, causing multiple sources and types of contamination. Initially, the Department of National Defence operated the BAR-C station between 1957 and 1963 as part of the Intermediate DEW Line. Then, from 1971 until 1974, the site was leased by Imperial Oil Resources Ltd. for use as a logistics base to support oil and gas exploration programs in the Mackenzie Delta region. Although the lease appeared not to have been renewed beyond 1974, Imperial continued to pay the lease fees to AANDC, and eventually to the Inuvialuit.

The complex site history, along with the block transfer of federal land and the involvement of a solvent third party, presented AANDC with a unique opportunity to explore its

legal obligation to remediate. In May 2011, the Department of Justice provided a legal opinion that suggested that the shared liability, and therefore the obligation for AANDC to remediate, was likely limited to hydrocarbon-affected soils only in areas used for DEW Line operations.

In June 2011, AANDC communicated its position to Imperial, initiating several years of negotiations. In February 2014, AANDC finalized a remediation agreement with Imperial. Under the agreement, Imperial champions the remediation of the site and AANDC contributes the cost of remediating Canada's share of hydrocarbon-affected soils. In signing the agreement, AANDC successfully reduced the estimated project cost from \$8.3 million to \$1.8 million.

2.5 IMPACT OF FCSAP ON THE FEDERAL CONTAMINATED SITES INVENTORY

The Federal Contaminated Sites Inventory (FCSI), managed by the Treasury Board of Canada Secretariat, includes information on federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations, and on non-federal contaminated sites for which the Government of Canada has accepted financial responsibility. The FCSI also includes information on federal sites that are being investigated or have been investigated to identify the presence of contamination that could pose a risk to human health or the environment.

As of March 31, 2014, the FCSI contained more than 22 590 sites, of which 13 430 (59%) have been closed, because remediation work has either been completed or was not required. Approximately 6140 sites (27%) are active, meaning that contamination has been confirmed at the site and remedial action is or may be required. About 3020 sites (13%) are suspected to be contaminated but have not yet been assessed.

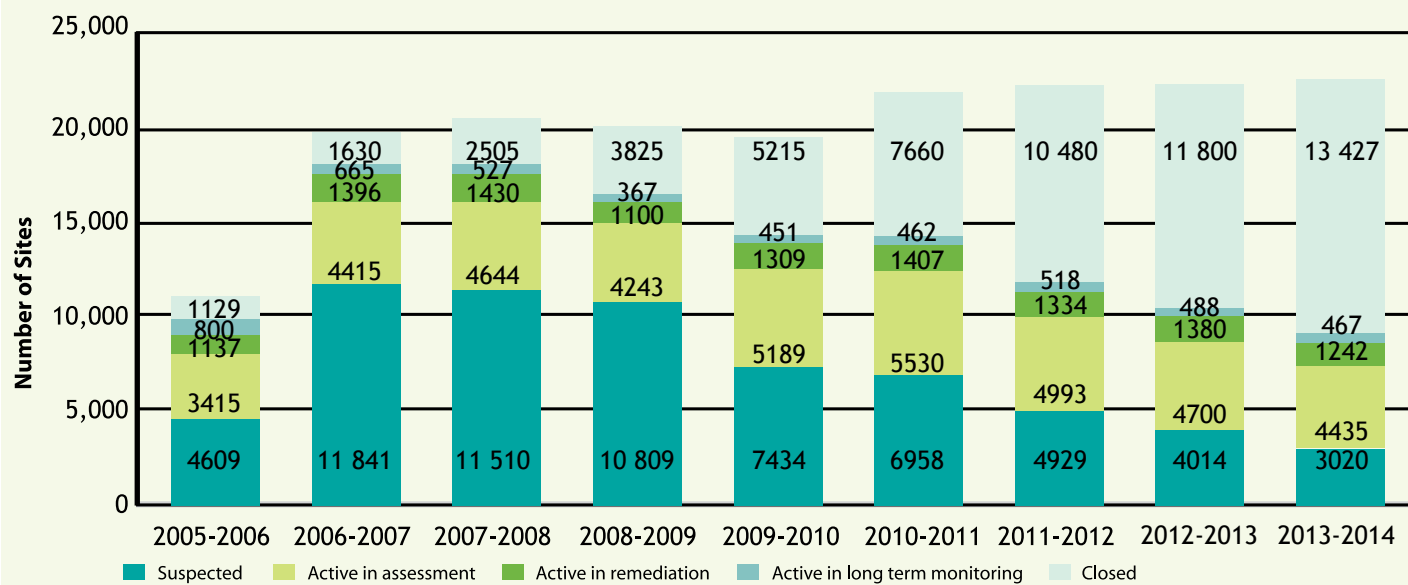
Not all sites on the FCSI are eligible for FCSAP remediation funding in Phase II. Only Class 1 sites and Class 2 sites where remediation had started in Phase I (before April 1, 2011) are eligible; the sites must also have been contaminated by historical activities, defined as having occurred before April 1, 1998. However, FCSAP is the main source of funding for federal contaminated-site management, covering about 90% of all FCSI site expenditures since 2005-2006.

Sites move from “suspected” to “active” status once the contamination has been confirmed. However, suspected sites may also be closed if a desktop review or a Phase I environmental site assessment determines that historical activities would not likely have caused contamination. The number of suspected sites decreased by 25%, from 4014 in fiscal year 2012-2013 to 3020 in fiscal year 2013-2014. The number of active sites decreased by 6%, from 6568 to 6144.

The status of active sites depends on the “highest step completed” (HSC) as set out in *A Federal Approach to Contaminated Sites*, detailed in Appendix B. The number of active sites in the assessment stage (HSC 3 to 6) decreased by 6%, from 4700 to 4435, while the number of active sites in the remediation stage (HSC 7 or 8) decreased by 10%, from 1380 to 1242. The number of active sites in long-term monitoring (HSC 9) decreased by 4%, from 488 to 467.

Closed sites require no further action, a conclusion that may be reached at various points in the 10-step process. For example, a suspected site (HSC 1 or 2) may be closed when a historical review indicates that past activities would not likely lead to contamination. Sites undergoing assessment (HSC 3 to 6) are usually closed if the assessment determines that contaminants are not present or are not posing an unacceptable risk. Sites are also closed after remediation, risk management, or long-term monitoring activities (HSC 7 to 10) have reduced the risks to acceptable levels. The number of closed sites increased by 14% in fiscal year 2013-2014, from 11 800 to 13 427. The total number of closed sites in the FCSI has increased by 1089% (1129 to 13 427) since 2005. These results, illustrated in Figure 4, demonstrate that FCSAP is having a significant positive effect on the status of sites in the FCSI.

Figure 4: Status of sites in the FCSI from 2005-2014



CASE STUDY

LEBRETON FLATS SOIL REMEDIATION

Location: Ottawa, Ontario

Custodian: National Capital Commission

LeBreton Flats is a 65-hectare brownfield site in the city of Ottawa. It is one of the last undeveloped waterfront properties in the Ottawa downtown core. Its prime location along the Ottawa River, near the Canadian War Museum, parkland and bridges across the Ottawa River, gives the site great potential to create a vibrant urban community in the heart of the nation's capital.

In the 19th century, the lumber and railway industries dominated the site, with sawmills, lumber storage and railway yards interspersed with associated residential units and neighbourhood retail. In April 1900, a fire swept over LeBreton Flats, destroying most of the structures and covering the area in ash, coal and fire debris. Afterward, the metal, lumber and manufacturing industries re-established the site, along with a thriving residential neighbourhood. In the 1940s and 1950s, several automobile-service stations and scrapyards established themselves on LeBreton Flats.

In the 1960s, the federal government appropriated the land for redevelopment, including plans for office buildings; all structures were demolished and removed to grade. In the following decades, parts of the land saw use for snow dumping and as sanitary landfill.

Extensive site investigations since the mid-1990s have determined that soil contamination was widespread across

the site, with metals, petroleum hydrocarbons, volatile organic compounds and polycyclic aromatic hydrocarbons. Groundwater contamination was much less widespread, occurring in a few localized areas, with metals, volatile organic compounds and polycyclic aromatic hydrocarbons. The site also contained buried debris and methane-generating materials.

In 2013, the National Capital Commission remediated a 6-hectare parcel of LeBreton Flats land containing soil predominantly contaminated with polycyclic aromatic hydrocarbons and some metals, such as lead. In an effort to minimize the environmental and financial costs, the project beneficially reused 110 000 m³ of contaminated soil, rather than sending it to a municipal landfill. Although LeBreton Flats soils were not suitable for residential, commercial or institutional use, a risk assessment found them suitable for use as a landfill cap. As a result, contractors used this soil to regrade and cap the Ridge Road former landfill site, another of the National Capital Commission's contaminated sites. This provided a more secure and stable enclosure that improved drainage—reducing soil erosion, water percolation into the landfill, leaching and garbage surfacing. As per the requirements of the risk assessment, contractors placed a layer of clean soil on top of the LeBreton Flats soil, and seeded it with indigenous vegetation.



3

FCSAP APPROVALS AND EXPENDITURES

This section describes the three types of funding that the Federal Contaminated Sites Action Plan (FCSAP) provides; the funding-approval process; and the amounts of funding allocations, expenditures and variances.

3.1 TYPES OF FUNDING

FCSAP provides three types of funding: assessment, remediation and risk-management, and program management. Assessment and remediation/risk-management funding are provided to allow custodians to perform work at contaminated sites. Program management funding is provided by FCSAP to assist custodians with the management of their site portfolios through activities such as procurement, contract management, expert support and reporting.

FCSAP is a cost-shared program that funds 85% of total remediation costs for projects under \$90 million, with custodians funding the balance. Remediation projects with total cost estimates of more than \$90 million may be funded entirely by FCSAP. The program also funds 80% of total site-assessment costs, with custodians funding the balance.

3.2 FUNDING APPROVALS

Treasury Board approves FCSAP funding on the basis of federal custodians' planned assessment and remediation activities.

On the advice of the FCSAP Secretariat and the Treasury Board of Canada Secretariat, the Federal Contaminated Sites Director General Steering Committee provides general oversight and direction to the program and approves priority sites for remediation. A committee of Assistant Deputy Ministers also provides strategic direction for FCSAP in areas such as program design and funding parameters.

Federal custodians are accountable for the FCSAP funding they receive and must ensure that their sites meet funding-eligibility requirements. Therefore, custodians must first have grounds to suspect that a site is contaminated (normally on the basis of past activities at the site) before environmental site-assessment activities can be funded. The FCSAP Secretariat has developed a prioritization tool to assist custodians in determining the priority of sites that should undergo assessment, considering that funds or resources might not be available to assess all sites at the same time. Guidance on the eligibility of project costs ensures that remediation or risk-management activities focus on reducing risks associated with contaminants.

3.3 FUNDING ALLOCATIONS, EXPENDITURES AND VARIANCES

FCSAP expenditures in fiscal year 2013-2014 were \$297.9 million, or 72% of the available funding. Custodians spent an additional \$31.6 million to meet their cost-share requirements.

The most common reasons that custodians did not spend all of the funds made available to them in fiscal year 2013-2014 involved contracting and project delays, such as weather conditions that either prevented access to the site or were inhospitable to the type of work being carried out.

Remediation and risk-management expenditures at federal contaminated sites represented 91% of total FCSAP expenditures (\$270.6 million), assessment expenditures represented 2% of the total (\$6.7 million) and program management expenditures accounted for 7% (\$20.6 million). Table C.3 in Appendix C details the allocations for the three types of FCSAP funding.

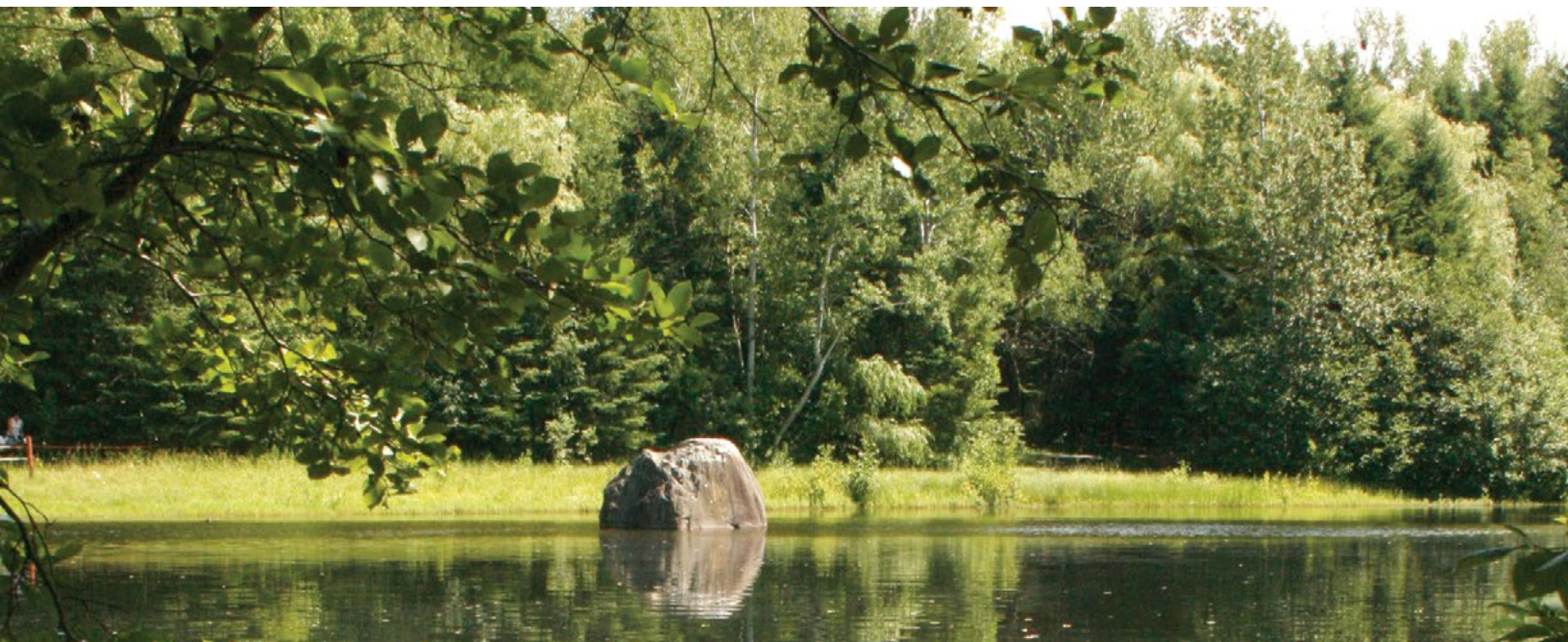
Custodians used various mechanisms to account for these unspent funds (or variances), which are detailed in Table C.4, along with the associated amounts. The overall variance between the FCSAP funding available and expenditures was \$113.6 million.

Unspent funds can be brought forward for FCSAP activities in future years through:

- government re-profiling, which must be approved by Treasury Board;
- carry-forward processes, which require internal approval from the custodian's finance group; or
- cash-management processes, which involve the custodian lending the unspent funds to another part of the organization, with the commitment that the funds will be returned in the next fiscal year.

These processes allow custodians flexibility in response to sometimes-unpredictable circumstances, such as weather, that may affect expenditures on FCSAP-eligible sites. The FCSAP Secretariat promotes and facilitates the transfer of funds among custodians. Funding that is not brought forward or transferred between custodians is lapsed, meaning that the funds will not be available for FCSAP activities in the future.

In fiscal year 2013-2014, 67% of the FCSAP funding variance was re-profiled, 8% was carried forward, 15% was internally cash-managed and 9% was lapsed. This means that, of the \$113.6 million of available funding that was not spent in fiscal year 2013-2014, \$103 million (91%) will be available in future years.





APPENDIX A

Program Administration

PROGRAM ADMINISTRATION

Secretariat and Expert Support Funding

In fiscal year 2013-2014, \$12.1 million was spent on the Federal Contaminated Sites Action Plan (FCSAP) Secretariat and Expert Support services. The expenditure breakdown is shown in Table A.1.

Table A.1: Summary of FCSAP program management expenditures for Secretariat and Expert Support services (2013-2014)

Department	FCSAP funding available (\$)	FCSAP expenditures (\$)	Variance (\$)*
Fisheries and Oceans Canada (expert support)	1,955,396	1,897,580	57,816
<i>Environment Canada (secretariat)</i>	3,141,306	2,881,760	259,546
<i>Environment Canada Expert Support</i>	2,946,186	2,585,186	361,000
Total Environment Canada (secretariat / expert support)	6,087,492	5,466,946	620,546
Health Canada (expert support)	3,886,465	3,521,200	365,265
Public Works and Government Services Canada (expert support)	700,000	693,800	6,200
Treasury Board of Canada Secretariat (secretariat)	527,900	526,746	1,154
Total expenditures	13,157,253	12,106,272	1,050,981

* Variance = FCSAP funding available - FCSAP expenditures

Key Activities

Federal Contaminated Sites Action Plan Secretariat

The FCSAP Secretariat, with support from Treasury Board of Canada Secretariat, provides program oversight, administration, coordination, progress monitoring and program reporting.

In fiscal year 2013-2014, the FCSAP Secretariat responded to recommendations from the FCSAP program evaluation and improved the performance measurement framework for FCSAP. One of the Secretariat's key accomplishments was the preparation of a funding proposal for the remediation and assessment funding for the 16 federal custodians for the last two years of FCSAP Phase II (2014-2015 and 2015-2016).

Other FCSAP Secretariat activities include:

- *Program governance* - The FCSAP Secretariat organized and co-chaired meetings of both the Contaminated Sites Management Working Group and the FCSAP Director General Steering Committee, which provide operational and strategic support to the program. The Secretariat also reviewed site submissions for eligibility and maintained the priority list of eligible sites.
- *Improvements to data management* - The FCSAP Secretariat upgraded the Interdepartmental Data Exchange Application database to improve tracking of project submissions and to better facilitate reviews by Expert Support departments, and continued to develop the information management/information technology strategy to improve the efficiency of information management, performance reporting and communications processes.
- *Performance monitoring and reporting* - The FCSAP Secretariat reviewed the performance measurement targets for the program and tracked program expenditures at mid-year and year-end. The Secretariat also prepared the first draft of the 2012-2013 annual report, which presented the results of program activities and custodian expenditures against the indicators and targets committed to in the FCSAP performance measurement strategy.

- *Communicating success* - The FCSAP Secretariat continued to develop templates for success stories on management of contaminated sites, high-priority project descriptions, and profiles on innovative and sustainable technologies. These will be used to highlight custodians' progress in response to FCSAP.

Treasury Board of Canada Secretariat

Throughout fiscal year 2013-2014, the Real Property and Materiel Policy Division of Treasury Board of Canada Secretariat (TBS) supported the activities of the FCSAP Secretariat through the provision of strategic advice and analysis on many program implementation issues, including:

- *Program governance* - TBS co-chaired, with Environment Canada, the Federal Contaminated Sites Director General Steering Committee and participated in the Contaminated Sites Management Working Group and other sub-committees, as required. TBS supported Environment Canada in the development of a Treasury Board submission for assessment and remediation funding for the last two years of Phase II of FCSAP (2014-2015 and 2015-2016), which was approved in March 2014.
- *Improvements to data management* - In addition to ongoing administration of the Federal Contaminated Sites Inventory (FCSI), TBS developed system enhancements such as new reporting functions, and implemented improvements aimed at data quality, notably in the area of reporting site scores and classifications. Changes to the reporting of liability data were introduced to facilitate compliance with new accounting standards (PSAB 3260). Corporately, TBS introduced new business processes to support the transition of the management of the information-technology components of the FCSI to the TBS Information Management and Technology Division, beginning April 1, 2013.
- *Performance monitoring and reporting* - TBS supported the activities of the FCSAP Secretariat through participation, challenge and oversight on key program initiatives, such as annual reporting, the long-term planning strategy and future funding analysis. TBS was also a member of the Program Evaluation Working Group for the FCSAP evaluation and supported the completion of the FCSAP evaluation through provision of comments on the final report and response to evaluation recommendations. Furthermore, TBS supported the work of the Parliamentary Budget Office by facilitating access to FCSI datasets and providing background information and analytical support for the April 10, 2014, Federal Contaminated Sites Cost report.
- *Community building* - TBS participated in the successful delivery of the June 2013 Real Property Institute of Canada (RPIC) Federal Contaminated Sites Regional Workshop in Halifax, Nova Scotia, on sustainable approaches to contaminated sites assessment and project planning. TBS also coordinated the interdepartmental planning committee for the 2014 RPIC Federal Contaminated Sites National Workshop in Ottawa (April 14-16, 2014).

Expert Support Departments

In fiscal year 2013-2014, Expert Support departments focused on developing and delivering guidance documents and training, providing advice, conducting reviews of contaminated-site management projects, and promoting innovative and sustainable remediation technologies.

Details on the departments' activities follow:

- Fisheries and Oceans Canada (DFO), Environment Canada, and Health Canada conducted site visits and reviewed reports to provide advice and guidance on risk assessments, site classifications, regulations, remedial plans, and technical requirements.
- DFO provided scientific and technical advice to custodial departments on the management of federal contaminated sites and the risks to, and effects on, fish and fish habitat, and promoted regulatory compliance with relevant federal legislation, particularly the Fisheries Act, at these sites. DFO developed the "FCSAP Long-term Monitoring Guidance Professional Development" course and provided three pilot sessions, updated the Aquatic Sites Classification System for use across the FCSAP community, and developed and provided training to custodial organizations and other FCSAP stakeholders on the Ecological Risk Assessment Causality Module, Aquatic Sites Classification System, and the Framework for Addressing and Managing Aquatic Contaminated Sites. The development of a Harbour Basin Management Strategy for Federal Active Harbours was also initiated. DFO published its Expert Support website, detailing the 10-step federal approach to managing contaminated sites and DFO's expert support role. Furthermore, DFO reviewed site classifications and technical documents (ecological risk assessments, environmental site assessments, remedial action plans, etc.) to ensure that potential effects on fish and fish habitat were appropriately considered.
- Environment Canada coordinated and reviewed site classifications to ensure that sites were eligible for FCSAP remediation or risk-management funding. Acting as the lead department through FCSAP's single-window approach, Environment Canada coordinated Expert Support departments' development of annual work plans and performance reporting, and provided advice to

the FCSAP Secretariat on the development of technical policies and guidance documents. Environment Canada continued work on developing guidance on complex environmental contaminants, including light non-aqueous phase liquids and perfluorooctane sulfonate. Finally, Environment Canada developed federal guidance on monitored natural attenuation of federal contaminated sites, and provided training to custodians on topics such as ecological risk assessment, liability estimation and the FCSAP Site Closure Tool.

- Health Canada provided custodians with expertise on human-health risk-assessment topics and continued to develop both general and site-specific guidelines, training, and analysis. To support custodians, Health Canada developed supplemental guidance on analysis of sediment-ingestion rates for human-health risk-assessment of contaminated sites, and is continuing to work on finalizing human-health-based guidance documents on bioaccessibility, sediments and air quality relevant to contaminated sites across Canada. Health Canada contributed human-health information to the Canadian Council of Ministers of the Environment for the publication of the Canadian soil-quality guideline for barium and a final soil-quality guideline document and fact sheet for beryllium. Additionally, under a memorandum of understanding with the Royal Military College of Canada, Health Canada produced two reports, “Carcinogenic Polycyclic Aromatic Hydrocarbons in Soils and Sediments, Review and Recommendations” and “Interim Perfluorinated Alkylated Substances (PFAS) Environmental Site Assessment Guidance Document.” Health Canada produced a document that explored the benefits of human-health risk assessment as a cost-effective measure for managing contaminated sites. The Department also provided two training sessions to custodians and their consultants, entitled “Human Health Risk Assessment Training on Risk Management” and “Considerations for Short-Term Exposure to Chemicals - Issues with Remote Sites.” Health Canada provided support to custodians by participating in working groups (for example, for the Giant Mine and Goose Bay sites), conducting site reviews and producing technical documents for custodians to manage their sites effectively from a human-health perspective.
- Public Works and Government Services Canada (PWGSC) worked with the FCSAP Secretariat to finalize technology profiles and to develop templates for sharing information on innovative, green and sustainable technologies. PWGSC updated the Guidance and Orientation for the Selection of Technologies Tool and Sustainable Development Tool. PWGSC also made enhancements to the Site Closure Tool in conjunction with the FCSAP Secretariat, and developed training for the Sediment Costing Tool. WebEx sessions related to procurement approaches for contaminated-site projects were also developed. Moreover, PWGSC developed a Phase II environmental site assessment statement of work that employs a multi-line evidence approach, and provided support to other Expert Support departments by providing data required to support the completion of their studies. Furthermore, PWGSC was involved in the organization of the Federal Contaminated Sites National Workshop and the facilitation of several professional-development sessions. The Department also represented FCSAP at the Federal Contaminated Sites Regional Workshop and the Remediation Technologies (RemTech) Symposium 2013.



APPENDIX B

Federal Approach to Managing Contaminated Sites

FEDERAL APPROACH TO MANAGING CONTAMINATED SITES

A contaminated site is an area in which substances occur at concentrations above normally occurring background levels and pose, or are likely to pose, an immediate or long-term hazard to human health or the environment. Determining the risk posed by the presence of these substances also involves determining potential exposure pathways and identifying potential receptors. Contamination can come from sources such as storage-tank leaks, long-term use of industrial facilities, or accidents; for example, spills of polychlorinated biphenyls.

To ensure that custodians take a common approach to managing federal contaminated sites, the Federal Contaminated Sites Action Plan (FCSAP) follows a 10-step process set out in A Federal Approach to Contaminated Sites.⁵

- **Step 1: Identify suspected sites** - Identify potentially contaminated sites, on the basis of past or current activities on or near the site.
- **Step 2: Historical review** - Assemble and review all historical information pertaining to the site.
- **Step 3: Initial testing program** - Provide a preliminary characterization of contamination and site conditions.
- **Step 4: Classify contaminated site, using Canadian Council of Ministers of the Environment (CCME) National Classification System** - Prioritize the site for future investigations and remediation or risk-management actions.
- **Step 5: Detailed testing program** - Focus on specific areas of concern identified in Step 3 and provide further in-depth investigations and analysis.
- **Step 6: Reclassify the site using CCME National Classification System** - Update the ranking, in response to the results of the detailed investigations.
- **Step 7: Develop remediation and risk-management strategy** - Develop a site-specific plan to address contamination issues.
- **Step 8: Implement remediation and risk-management strategy** - Implement the site-specific plan that addresses contamination issues.
- **Step 9: Confirmatory sampling and final reporting** - Verify and document the success of the remediation and risk-management strategy.
- **Step 10: Long-term monitoring** - If required, conduct long-term monitoring to ensure that remediation and long-term risk-management goals are achieved.

The steps indicate the stage of progress at a site. Significantly more time, energy and funding are usually required to complete Step 8 than any other step.

Process Walkthrough

Once a site is suspected of being contaminated (Step 1), custodians may seek FCSAP funding to conduct a historical review (Step 2) or a Phase I environmental site assessment. The purpose of this work is to determine whether contamination exists on the property.

The next step consists of an initial testing program (Step 3) to confirm the presence and extent of contamination at a site. If contamination is present above levels specified in policies or guidelines or is above background levels and may cause risk, additional detailed testing (Step 5) must occur. The results from assessments help to identify risks to human health and the environment, to determine what remediation or risk-management action is necessary.

To determine the priority of a site for management action, federal sites are classified according to the nature, severity and immediacy of the risk posed to human health and the environment, using the CCME National Classification System for Contaminated Sites or the FCSAP Aquatic Sites Classification System, depending on whether the contaminated site is on land or in water (Steps 4 and 6). To ensure that available funding is directed to the highest-risk sites, FCSAP funds the remediation or risk management of Class 1 (high priority for action) sites, and Class 2 (medium priority for action) sites that had spent FCSAP remediation expenditures before April 1, 2011. Class 3 (low priority for action) sites are not eligible for FCSAP remediation funding.

⁵ A Federal Approach to Contaminated Sites (Contaminated Sites Management Working Group 1999), www.federalcontaminatedsites.gc.ca/default.asp?lang=en&n=B4AC7C22-1.

Remediation is the act of removing, reducing, or destroying contaminants and pollution from the environment (e.g., from soil, groundwater or surface water such as lakes and rivers). Conversely, risk management is a set of actions aimed at controlling and managing contaminants. Both remediation and risk management aim to protect the environment and human health by limiting exposure to hazardous substances, leading to improved quality of life, increased wildlife habitat and economic benefits.

Once assessment activities have confirmed that contamination levels pose a risk to human health or the environment, a responsible custodian oversees the development of the remediation plan (Step 7) and updates the federal environmental liability for the site with available information. The custodian then works closely with consultants, contractors and tradespeople to implement the plan (Step 8). Usually, the final stage of the project is to confirm that the remediation or risk-management objectives have been reached (Step 9). The site may then be closed, which indicates that no further action is required and that the federal financial liability has been reduced to zero. However, for sites where the most appropriate course of action is to risk-manage contamination by containing it on a site and reducing exposure to people, plants and animals, long-term monitoring (Step 10) may be necessary to ensure that risks remain at acceptable levels.



APPENDIX C

Data Tables

Table C.1: Assessment funding available and expenditures, by custodian (2013-2014)

Custodian	Number of sites with activity	FCSAP funding available (\$)	FCSAP expenditures (\$)	Custodian expenditures (\$)	Total expenditures (\$)
AAFC	13	378,215	184,689	66,172	250,861
AANDC-LED	44	599,286	599,286	320,744	920,030
AANDC-NAO	8	1,080,000	1,068,482	267,121	1,335,603
CSC	17	469,852	255,240	63,810	319,050
DFO	135	1,767,960	1,702,660	425,665	2,128,325
DND	31	727,000	524,778	131,195	655,973
EC	17	1,093,000	1,093,000	352,004	1,445,004
IC	1	48,000	31,352	8,810	40,162
NCC	42	502,490	414,886	103,721	518,607
NRC	5	62,000	62,000	152,994	214,994
NRCan	4	93,000	87,789	21,947	109,736
PCA	23	1,062,259	587,103	232,785	819,888
PWGSC	2	34,000	34,000	10,820	44,820
RCMP	5	174,350	80,157	20,039	100,196
Total	347	8,091,412	6,725,422	2,177,827	8,903,249

Table C.2: Remediation funding available and expenditures, by custodian (2013-2014)

Custodian	Number of sites with activity	FCSAP funding available (\$)	FCSAP expenditures (\$)	Custodian expenditures (\$)	Total expenditures (\$)
AAFC	1	507,086	142,542	25,154	167,696
AANDC-LED	70	17,608,714	17,608,714	7,505,448	25,114,162
AANDC-NAO	54	184,327,000	140,446,103	6,593,422	147,039,525
CBSA	0	1,870,000	0	0	0
CSC	7	547,240	398,235	70,277	468,512
DFO	53	3,112,200	2,337,384	412,480	2,749,864
DND	80	61,996,000	46,143,252	3,038,506	49,181,758
EC	9	1,592,046	929,548	522,673	1,452,221
JCCBI	0	22,595,000	0	0	0
NCC	6	13,992,659	2,586,271	525,014	3,111,285
NRC	3	47,000	47,000	12,692	59,692
PCA	28	6,672,125	2,141,224	442,172	2,583,396
PWGSC	20	49,689,473	46,036,212	8,124,037	54,160,249
RCMP	7	627,499	202,919	66,164	269,083
TC	30	16,258,000	11,615,411	2,049,779	13,665,190
Total	368	381,442,042	270,634,815	29,387,818	300,022,633

Table C.3: Program-level summary of FCSAP funding available (2013-2014)

Status of funding	Program management (\$)	Assessment (\$)	Remediation and risk-management (\$)	Total funding (\$)
FCSAP funding approved for 2013-2014	21,817,068	7,160,000	297,307,875	326,284,943
FCSAP funding brought forward from previous fiscal years	192,472	1,199,126	83,846,407	85,238,005
FCSAP funds received from another custodian (+)	50,000	0	950,000	1,000,000
FCSAP funds given to another custodian (-)	-50,000	0	-950,000	-1,000,000
FCSAP funds internally transferred to another stream (assessment, remediation, program management) (±)	-20,046	-267,714	287,760	0
Total FCSAP funding available	21,989,494	8,091,412	381,442,042	411,522,948

Table C.4: Program-level summary of FCSAP expenditures and variance (2013-2014)

FCSAP funds	Program management (\$)	Assessment (\$)	Remediation (\$)	Total
FCSAP expenditures	20,560,260	6,725,422	270,634,815	297,920,497
FCSAP funds reprofiled to a future year	46,000	0	76,438,261	76,484,261
FCSAP funds carried forward to a future year	148,846	614,433	8,630,409	9,393,688
Internal cash-management of FCSAP funds to a future year	0	584,437	16,886,171	17,470,608
Lapsed FCSAP funds	1,234,388	167,120	8,852,386	10,253,894
Custodian cost-share expenditures	0	2,177,827	29,387,818	31,565,645

Table C.5: List of remediation sites funded by FCSAP (2013-2014)

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
AAFC	The Atlantic Food and Horticulture Research Centre	02731004	NS	142,542	25,154
AANDC-LED	61 - The Crees of the Waskaganish First Nation - 06129 - WASKAGANISH / 2000022296	05357005	QC	350,000	0
AANDC-LED	143 - Attawapiskat - 06259 - ATTAWAPISKAT 91 / 0402307505	00000595	ON	255,999	103,581
AANDC-LED	143 - Attawapiskat - 06259 - ATTAWAPISKAT 91 / 0402307605	00000596	ON	222,752	90,130
AANDC-LED	143 - Attawapiskat - 06259 - ATTAWAPISKAT 91 / 3000051796	00006891	ON	2,845,909	1,151,503
AANDC-LED	183 - Eabametoong First Nation - 06296 - FORT HOPE 64 - 3000025895	00000457	ON	102,973	16,950

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
AANDC-LED	186 - Marten Falls - 06299 - MARTEN FALLS 65 / 3000027095	05166001	ON	43,810	7,731
AANDC-LED	186 - Marten Falls - 06299 - MARTEN FALLS 65 - 3000027195	05166002	ON	22,641	3,995
AANDC-LED	186 - Marten Falls - 06299 - MARTEN FALLS 65 - 3000027395	05166003	ON	2,061	364
AANDC-LED	186 - Marten Falls - 06299 - MARTEN FALLS 65 - 3000027495	00000463	ON	13,254	2,339
AANDC-LED	201 - Serpent River - 06185 - SERPENT RIVER 7 - 3000047696	05185001	ON	360,659	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402306805	00000412	ON	372	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402306905	00000413	ON	1,630	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402307105	00000415	ON	233	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402307205	00000416	ON	233	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 0402308805	00000597	ON	2,720	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000115799	00006762	ON	93	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000004694	05149001	ON	3,112	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000005194	05149003	ON	26,552	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000004994	05149008	ON	11,543	0
AANDC-LED	209 - Kitchenuhmaykoosib Inninuwug - 06321 - KITCHENUHMAYKOOSIB AAKI 84 / 3000115699	05149013	ON	93	0
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000035195	05194001	ON	157	1,222

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000035695	05194003	ON	686	5,356
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000035995	05194004	ON	383	2,991
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000040896	05194007	ON	102	799
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000040996	05194008	ON	46	362
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000104197	05194010	ON	13	98
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000104297	05194011	ON	67	521
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000035895	05194014	ON	53	413
AANDC-LED	270 - Little Grand Rapids - 06376 - LITTLE GRAND RAPIDS 14 / 0503608008	00007053	MB	383,095	67,605
AANDC-LED	270 - Little Grand Rapids - 06376 - LITTLE GRAND RAPIDS 14 / 0503608608	00007057	MB	42,500	7,500
AANDC-LED	270 - Little Grand Rapids - 06376 - LITTLE GRAND RAPIDS 14 - MB04839112	19118041	MB	1,375,780	242,785
AANDC-LED	297 - Garden Hill First Nation - 06448 - GARDEN HILL FIRST NATION / 0503396908	00006936	MB	864,062	152,482
AANDC-LED	298 - St. Theresa Point - 09147 - ST THERESA POINT / 4000038700	00006601	MB	42,500	7,500
AANDC-LED	299 - Wasagamack First Nation - 09148 - WASAGAMACK / 0502601305	00005805	MB	1,661,926	293,281
AANDC-LED	300 - Red Sucker Lake - 06467 - RED SUCKER LAKE 1976 / 4000011594	05324001	MB	166,518	29,385
AANDC-LED	301 - Bunibonibee Cree Nation - 06446 - OXFORD HOUSE 24 / 0503619008	00007102	MB	25,321	196,959
AANDC-LED	303 - Sayisi Dene First Nation - 06464 - CHURCHILL 1 / 0502573605	00005528	MB	171,530	30,270
AANDC-LED	303 - Sayisi Dene First Nation - 06464 - CHURCHILL 1 / 0502575005	00005542	MB	171,530	30,270
AANDC-LED	307 - Shamattawa First Nation - 06460 - SHAMATTAWA 1 - 0503402808	00006939	MB	443,773	78,313
AANDC-LED	311 - Mathias Colomb - 06456 - PUKATAWAGAN 198 / 4000002393	00006814	MB	127,993	22,587
AANDC-LED	344 - Onion Lake Cree Nation - 06482 - MAKAAO 120 / 0601634104	00006334	SK	35,000	15,000
AANDC-LED	433 - Chiniki - 06642 - STONEY 142-143-144 - 6000033600	05131001	AB	117,000	23,647

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
AANDC-LED	462 - Saddle Lake Cree Nation - 06703 - WHITE FISH LAKE 128 / 0703415008	00006947	AB	164,500	41,000
AANDC-LED	502 - Liard First Nation - 08433 - LIARD RIVER 3 / 0801946205	05210004	BC	273,465	393,748
AANDC-LED	540 - Kitasoo - 07886 - KITASOO 1 - 0903376808	00006933	BC	301,500	204,000
AANDC-LED	540 - Kitasoo - 07886 - KITASOO 1 / BC04825611	00008201	BC	1,847,380	554,948
AANDC-LED	540 - Kitasoo - 07886 - KITASOO 1 / BC04825911	00008204	BC	3,259,863	979,252
AANDC-LED	561 - Douglas - 08012 - TIPELLA 7 - 0903415208	00006949	BC	7,911	9,166
AANDC-LED	561 - Douglas - 08012 - TIPELLA 7 - 0904491909	00007697	BC	7,911	9,166
AANDC-LED	561 - Douglas - 08012 - TIPELLA 7 - 0904492009	00007698	BC	7,911	9,166
AANDC-LED	562 - Skatin Nations - 08015 - SKOOKUMCHUCK 4 - 0904500309	00007709	BC	7,911	9,166
AANDC-LED	562 - Skatin Nations - 08015 - SKOOKUMCHUCK 4 - 0904501609	00007711	BC	7,911	9,166
AANDC-LED	562 - Skatin Nations - 08016 - SKOOKUMCHUCK 4A - 0904501809	00007713	BC	7,911	9,166
AANDC-LED	564 - Kwantlen First Nation - 08033 - LANGLEY 5 - BC04790410	00008206	BC	132,650	1,149,350
AANDC-LED	567 - Samahquam - 08041 - Q'ALATKU7EM - 0903408808	00006943	BC	7,911	9,166
AANDC-LED	567 - Samahquam - 08041 - Q'ALATKU7EM - 0904329909	00007654	BC	7,911	9,166
AANDC-LED	567 - Samahquam - 08041 - Q'ALATKU7EM - BC04793410	00007904	BC	7,911	9,166
AANDC-LED	569 - Semiahmoo - 08047 - SEMIAHMOO - 0903374908	00006932	BC	1,400,000	285,000
AANDC-LED	570 - Shxwhá:y Village - 08048 - SKWAY 5 / 0902661006	00006617	BC	36,763	6,490
AANDC-LED	610 - Kwadacha - 07576 - FORT WARE 1 - 7000037894	00006811	BC	25,700	6,700
AANDC-LED	627 - Gwawaenuk Tribe - 07025 - HOPETOWN 10A - 7000039994	05040001	BC	16,800	3,000
AANDC-LED	644 - Esquimalt - 06808 - ESQUIMALT / 7000025894	05028006	BC	156,825	27,675
AANDC-LED	656 - Songhees First Nation - 06839 - NEW SONGHEES 1A - 0901458204	00006573	BC	25,424	4,486
AANDC-NAO	BAF 5 - Resolution Island	C1017001	NU	1,171,013	206,649
AANDC-NAO	BAR C - Tununuk	00000379	NT	1,021,351	180,238
AANDC-NAO	Bathurst Island - Bent Horn (Cameron Island)	00024167	NU	579,420	102,251

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
AANDC-NAO	Bathurst Island - Île Vanier	00000282	NU	367,437	64,842
AANDC-NAO	Bathurst Island - Stokes Range	00024257	NU	325,041	57,360
AANDC-NAO	Beaulieu Mine (John Lake; Brandy; Irene; Norma; Tungsten and Gold Mines Limited)	00023544	NT	17,988	3,174
AANDC-NAO	Beaverlodge Lake	00000842	NT	77,179	13,620
AANDC-NAO	Blanchet Island Mine (HRL Claims)	00000402	NT	201,540	35,566
AANDC-NAO	Bullmoose Lake Mine (Formerly Mann Lake)	00000068	NT	56,760	10,016
AANDC-NAO	CAM A - Sturt Point	C1041001	NU	2,851,151	503,144
AANDC-NAO	CAM C - Matheson Point	C1001001	NU	536,231	94,629
AANDC-NAO	CAM E - Keith Bay	C1003001	NU	592,883	104,626
AANDC-NAO	Canol Trail - Mile 50 - Road Maintenance Camp - Little Keele	00024267	NT	61,696	10,888
AANDC-NAO	Canol Trail - Mile 76 - Pump Station 3	00025577	NT	61,696	10,888
AANDC-NAO	Canol Trail - Mile 90 - Road Maintenance Camp - Andy Creek	00024272	NT	61,696	10,888
AANDC-NAO	Canol Trail - Mile 100 - Road Maintenance Camp - Bolstead Creek	00024273	NT	61,696	10,888
AANDC-NAO	Canol Trail - Mile 108 - Pump Station #4	00024274	NT	61,697	10,888
AANDC-NAO	Canol Trail - Mile 131.3 - Pipeline Oil Spill Site	00024287	NT	61,697	10,888
AANDC-NAO	Canol Trail - Mile 160 - Drum Cache	00024278	NT	61,697	10,888
AANDC-NAO	Canol Trail - Mile 202 - Vehicle Boneyard	00024281	NT	61,697	10,888
AANDC-NAO	Canol Trail - Mile 222 - Camp and Vehicle Cache	00024286	NT	61,697	10,888
AANDC-NAO	Cape Dorset 2 (Nottingham Island)	00000311	NU	234,788	41,433
AANDC-NAO	Chipp Lake Mine (Cliff Lake, Eileen)	00023777	NT	12,086	2,133
AANDC-NAO	Clinton Creek (Bosworth Creek)	C1052001	YT	812,813	143,438
AANDC-NAO	Colomac Mine (Baton Lake, Indin Lake, Goldcrest, Grizzly Bear)	C1047001	NT	1,811,227	0
AANDC-NAO	Contact Lake Mine (International Uranium, M Group, Sam, Kayo)	C1051001	NT	3,165	558
AANDC-NAO	Contwoyto Lake/Contwoyto Island	00023576	NU	922,097	162,723

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
AANDC-NAO	Copper Pass Mine - Hearne Channel (Sachowia Lake)	00000387	NT	376,233	66,394
AANDC-NAO	El Bonanza Mine (Bonanza East, Bonanza Vein, Spud Vein)	00000076	NT	2,180	385
AANDC-NAO	Ennadai Lake	00023553	NU	930,088	164,133
AANDC-NAO	Faro Mine	C2503001	YT	35,311,743	0
AANDC-NAO	FOX D - Kivitoo	C1021001	NU	777,172	137,148
AANDC-NAO	FOX E - Durban Island	C1022001	NU	2,345,272	413,871
AANDC-NAO	Giant Mine (Giant Yellowknife Mines; Royal Oak Mines; A, B and C Shafts)	C1048001	NT	65,960,410	0
AANDC-NAO	Goodrock Mine (Gordon Lake)	00000351	NT	81,559	14,393
AANDC-NAO	Hope Lake	00023429	NU	3,055,839	539,266
AANDC-NAO	Indore Gold Mine/Hottah Lake (Pitch 8)	C1026001	NT	126,914	22,397
AANDC-NAO	Joon Mine (Campbell Lake, June Mine, Strike Lake)	00000405	NT	17,638	3,113
AANDC-NAO	Knight Bay (Kidney Pond)	00024120	NT	281,271	49,636
AANDC-NAO	Mount Nansen Mine	C2505001	YT	5,474,486	966,086
AANDC-NAO	Outpost Island	C1038001	NT	217,665	38,412
AANDC-NAO	Padloping Island	C1016001	NU	1,759,850	310,562
AANDC-NAO	PIN D - Ross Point	C1040001	NU	32,087	41,860
AANDC-NAO	Rayrock Mine (Rob Group; M.M. Group; Island 2; Beta)	C1031001	NT	399,321	70,468
AANDC-NAO	Ruth Gold Mine	C1033001	NT	48,697	8,594
AANDC-NAO	Sawmill Bay/Great Bear Lake	00000403	NT	9,260	1,634
AANDC-NAO	Spectrum Lake (AA/BB, Benventum)	00023964	NT	54,246	9,573
AANDC-NAO	Storm Mine (Consolation Lake 2)	00023548	NT	9,440	1,666
AANDC-NAO	Terra #1 (North Mine, Silver Bear Properties)	C1010001	NT	253,062	44,658
AANDC-NAO	Terra #2 (Northrim Mine, Silver Bear Properties, Silver Bay, White Eagle)	C1011001	NT	24,450	4,315
AANDC-NAO	Terra #3 (Norex Mine, Silver Bear Properties, Ceaser Silver)	C1012001	NT	21,032	3,712
AANDC-NAO	Terra #4 (Smallwood Mine, Silver Bear Properties)	C1013001	NT	8,577	1,514

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
AANDC-NAO	Tundra-Taurcanis Mine (Bulldog Yellowknife Gold Mines, Tamcanis Mines Limited, Tundra Gold Mines)	C1035001	NT	6,749,836	1,191,147
AANDC-NAO	United Keno Hill Mine	C2509001	YT	3,968,335	700,294
CSC	330-C01 Leclerc Institution - Former Tank Nest Beside Central Heating Plant	00013010	QC	13,535	2,388
CSC	441-L02 Frontenac Southern Landfill (near Front Road)	00024662	ON	96,365	17,006
CSC	441-L03 Frontenac Institution - Landfill #3 at Quarry Road and Little Cataraqui Creek Tributary	00012990	ON	96,365	17,006
CSC	451-C12-A Pittsburgh Former Underground Storage Tank	00024746	ON	78,006	13,766
CSC	460-C01 Warkworth Institution - Underground Storage Tanks	00023469	ON	46,633	8,229
CSC	530-L01 Former Landfill at South West	00013023	AB	65,913	11,632
CSC	833-C01 Mountain Institution - Former Sewage Lagoon	00024674	BC	1,417	250
DFO	Addenbroke Island	67677001	BC	5,100	900
DFO	Ballenas Island - Metal and Hydrocarbon on Ballenas Island Property	17675001	BC	6,948	1,226
DFO	Bettys Island - Metals, Hydrocarbons and PAH contamination	00000857	NS	115,784	21,485
DFO	Boat Bluff	67678001	BC	6,948	1,226
DFO	Bonilla Island - Sector Light	19482001	BC	6,948	1,226
DFO	Cap à l'Est - light station	07998001	QC	245	1,374
DFO	Cap-de-Rabast (light and adjacent concrete bases)	08029002	QC	10,455	1,845
DFO	Cape Beale	17809001	BC	6,948	1,226
DFO	Cape Mudge	18225001	BC	6,948	1,226
DFO	Cape Pine - Area 1 Main Site	34599001	NL	18,062	3,187
DFO	Cape Pine - Area 2 Lower Site	00023100	NL	18,062	3,187
DFO	Cape Scott - Main Station	19007001	BC	6,948	1,226
DFO	Carmanah Point	17533001	BC	6,948	1,226
DFO	Chatham Point	18090001	BC	6,948	1,226
DFO	Chrome Island - Range Light	18001001	BC	6,948	1,226

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
DFO	Cove Island - Main Dump	00024545	ON	55,182	3,738
DFO	Cove Island - Soil around Lighthouse and associated structures	00000863	ON	226,647	226,273
DFO	Dawsons Landing Field Station - Generator ASTs	19158001	BC	25,800	4,500
DFO	Devils Island - Metal Impacts in Soil	00012306	NS	139,853	24,300
DFO	Discovery Island - Metals and Hydrocarbons in Dump Areas	17425001	BC	6,948	1,226
DFO	Dryad Point	67679001	BC	6,948	1,226
DFO	Egg Island	67680001	BC	6,948	1,226
DFO	Entrance Island	17611001	BC	6,948	1,226
DFO	Estevan Point	17813001	BC	6,948	1,226
DFO	Fortune (Fish Plant Wharf - DFRP# 00494 - Uplands)	00490002	NL	34,000	26,000
DFO	Gereaux Island (Britt IRB) - Landing pad, residence, and boathouse area	00013239	ON	138,359	37,483
DFO	Gereaux Island (Britt IRB) - Soils around the lighthouse	00012239	ON	138,359	37,483
DFO	Gereaux Island (Britt IRB) - Waste Dump	00013240	ON	138,359	37,483
DFO	Gereaux Island (Britt IRB) - Waste Dump - south	00024547	ON	138,359	37,483
DFO	Green Island	67681001	BC	6,948	1,226
DFO	Griffith Island - Vicinity of Lighthouse	58231001	ON	226,053	41,130
DFO	Île Bicquette - area around the lighthouse	05469001	QC	6,488	1,145
DFO	Ivory Island	67682001	BC	6,948	1,226
DFO	Langara Island	19401001	BC	6,948	1,226
DFO	Lennard Island	17812001	BC	6,948	1,226
DFO	Long-Pèlerin - light station structure and range light	00021639	QC	9,145	1,614
DFO	McInnes Island	67683001	BC	6,948	1,226
DFO	Merry Island	18460001	BC	6,948	1,226
DFO	Nootka Island	18086001	BC	6,948	1,226
DFO	Pachena Point	17810001	BC	6,948	1,226

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
DFO	Pine Island	19125001	BC	6,948	1,226
DFO	Pinkut Creek Dumping Site - Pinkut Off Site Landfill	00023076	BC	59,800	6,000
DFO	Pulteney Point	19084001	BC	6,948	1,226
DFO	Quatsino, Kains Island - Assistant keeper's house and engine room	19006001	BC	6,948	1,226
DFO	Quinsam River Hatchery - Fuel spill near the Clarifier pump house	00002335	BC	57,360	12,000
DFO	Rouge Island - light station	08204001	QC	34,449	6,079
DFO	Scarlett Point	19052001	BC	6,948	1,226
DFO	Sea Island Hovercraft Base - Former Aviation Fuel tanks and associated piping	84580001	BC	20,440	3,750
DFO	Seal Island - South Point Shore Area Soil Impacts	00017477	NS	296,845	60,997
DFO	Tête au Chien Cape - light station	82175001	QC	532	7,968
DFO	Trial Islands	17330001	BC	6,948	1,226
DFO	Victoria Base - Storage Yard Area	17385001	BC	22,820	4,027
DFO	Williams Lake LORAN-C - Hydrocarbons in soils	06813001	BC	213,230	34,900
DND	5 Wing Goose Bay, Canadian Side Northside	01822018	NL	1,729,876	39,724
DND	5 Wing Goose Bay, Dome Mountain, RCAF and Camp Sites	N7075001	NL	3,191,983	32,206
DND	5 Wing Goose Bay, Hydrant Area Fuel Plumes	01822043	NL	1,241,474	0
DND	5 Wing Goose Bay, Lower Tank Farm	01822094	NL	671,081	53,622
DND	5 Wing Goose Bay, Main Base and Civil Aviation Area	01822076	NL	102,487	2,249
DND	5 Wing Goose Bay, Main Gate and Hamilton River Road Plume	N7077001	NL	1,613,858	181,353
DND	5 Wing Goose Bay, South Escarpment Landfills	01822087	NL	493,539	2,249
DND	5 Wing Goose Bay, South Escarpment Stillwaters	00008429	NL	160,939	180,614
DND	5 Wing Goose Bay, Survival Tank Farm	01822086	NL	4,300,828	17,995
DND	5 Wing Goose Bay, Upper Tank Farm - Fuel Recovery Site	01822085	NL	1,134,319	0
DND	Aerodrome - West of runway 18-36	07930004	QC	4,016	709
DND	Alert Baker's Dozen	20247035	NU	12,308	2,172

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
DND	Amherst Rifle Range (5403) - Range firing points, butt stops	03186001	NS	22,077	3,896
DND	Atmosphere simulation (former dump), DRDC-South	29757003	QC	39,033	6,888
DND	Building 151 area	09540007	ON	279,113	49,255
DND	Cadet Camp Landfill	00008347	ON	50,837	8,971
DND	CFAD Bedford (802) Dredge Material Disposal - Former Landfill	02859002	NS	12,360	3,538
DND	CFB Petawawa RTA - Area 8 (Demolition Range)	00008335	ON	192,578	33,984
DND	CFB Shearwater (213) - Landfill 3	02863013	NS	24,248	4,279
DND	CFB Shearwater (214) - Landfill 4	02863014	NS	13,899	2,453
DND	CFB Shearwater (216) - Fill Area West of Alpha Taxiway	02863016	NS	37,974	6,701
DND	CFS ST John's (4710) - Pussey's Hill Rifle Range	00273001	NL	51,592	9,105
DND	CFS St Johns (4910) - Southside Road Tank Farm	32044001	NL	43,274	7,637
DND	CFS St Johns (5210) - Shea Heights Tank Farm	32044002	NL	132,484	23,380
DND	Coal Storage #2	11022075	ON	961,740	169,719
DND	COL-43	00008698	BC	783,870	138,330
DND	DCD School (907) - Fire Fighting Training Area	03044007	NS	41,192	13,096
DND	DEW-Line - CAM-1 Jenny Lind Island	C7017001	NU	68,403	12,071
DND	DEW-Line - CAM-2 Gladman Point	C7018001	NU	9,069	1,600
DND	DEW-Line - CAM-3 Sheppard Bay	C7027001	NU	136,833	24,147
DND	DEW-Line - CAM-4 Pelly Bay	C7019001	NU	111,806	19,730
DND	DEW-Line - CAM-5 Mackar Inlet	C7020001	NU	91,651	16,174
DND	DEW-Line - DYE-M Cape Dyer	C7026001	NU	13,569,843	0
DND	DEW-Line - FOX-2 Longstaff Bluff	C7022001	NU	691,106	121,960
DND	DEW-Line - FOX-3 Dewar Lakes	C7023001	NU	261,536	46,154
DND	DEW-Line - FOX-4 Cape Hooper	C7024001	NU	5,956,250	1,051,103
DND	DEW-Line - FOX-5 Broughton Island	C7025001	NU	369,824	65,263
DND	DEW-Line - FOX-M Hall Beach	C7021001	NU	213,088	37,604

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
DND	DEW-Line - PIN-2 Cape Young	C7013001	NU	112,175	19,796
DND	DEW-Line - PIN-3 Lady Franklin Point	C7016001	NU	11,486	2,027
DND	DEW-Line - PIN-4 Byron Bay	C7015001	NU	309,938	54,695
DND	Dry material (former dump for), DRDC-South	29757002	QC	39,977	7,055
DND	DY-4 Dockyard FMF Consolidation	17403003	BC	415,237	73,277
DND	ESQ 1 - Esquimalt Harbour	17403011	BC	2,233,785	394,197
DND	ESQ 3 - Esquimalt Harbour - A and B Jetty	00008581	BC	24,965	4,406
DND	Fire Fighting Training Area/ Hazardous Materials Storage	09540012	ON	134,131	23,670
DND	Former CFS Moisie - Site Admin	N7096001	QC	125,221	22,098
DND	Former CFS Sydney	N7095001	NS	307,212	81,431
DND	Former dump Château Road	05906047	QC	11,049	1,950
DND	Former skeet range	00008337	QC	489,208	86,331
DND	Great Village Transmitter Site (2001) - Existing AST	03146001	NS	22,975	4,054
DND	Hangar 5 and 6	00024810	ON	169,275	29,872
DND	Land adjacent to the former well P-2	05906061	QC	25,999	4,588
DND	Le RHIN former demolition area	05906041	QC	89,457	15,787
DND	"MDR" (former dump for), DRDC-Trials	29757006	QC	27,469	4,848
DND	Moras Island	06872002	QC	8,188	58,645
DND	New ATESS Refinishing Shop	00008541	ON	216,728	38,246
DND	Oxidator Building (Back of Building)	20247006	NU	39,061	6,893
DND	Perchlorate (administrative sector)	29757026	QC	51,536	9,095
DND	Plateau (demolition site), DRDC-Trials	29757009	QC	40,822	7,204
DND	POL Compound	04089001	NB	59,718	10,538
DND	POL Compound - area of removed tanks	09540020	ON	133,546	23,567
DND	POL tank farm	07930009	QC	361,129	63,729
DND	Refuelling Facility 2	10992006	ON	41,728	7,364

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
DND	Royal Roads Landfill Area	15684029	AB	168,902	29,806
DND	Sector for building 307, DRDC-Trials	29757005	QC	47,481	8,379
DND	Shearwater (207) - Former USTs at Hangar 3	02863007	NS	48,468	8,553
DND	Shearwater (222B) Former POL (D) UST (S) Building 212 HY	02863045	NS	31,109	5,490
DND	Shearwater (230) - Buildings 31,31A,31B,32 (Mobile Support Maintenance)	02863030	NS	86,310	16,588
DND	Shirley Road Dump	04089010	NB	60,542	10,684
DND	Skeet Range	00008351	AB	54,387	9,598
DND	Small calibre (Former dump), DRDC-South	29757001	QC	39,977	7,055
DND	South reboubt RMC St-Jean	00008463	QC	44,387	7,833
DND	Stream draining former DDT site in Farnham	00008562	QC	137,956	24,345
DND	Sudbury Armoury	00008448	ON	39,874	7,037
DND	TCE Contamination - Highbury Complex	10868001	ON	79,903	14,100
DND	TCE Contamination - Valcartier	29757007	QC	714,824	228,007
DND	Training areas, former CARPIQUET firing range	05906044	QC	112,640	19,878
DND	Wellington Anti-Tank Range	00008409	NB	46,733	8,247
DND	Wolseley Barracks	10869001	ON	105,359	18,593
EC	Bicquette Island	27013083	QC	6,965	1,229
EC	Ekwan River below North Washagami River	00011374	ON	75,162	169,279
EC	Eureka High Arctic Weather Station	00002747	NU	38,575	103,741
EC	Former boathouse	00022204	QC	6,748	1,191
EC	North French River near the mouth	00003070	ON	62,679	127,336
EC	Sable Island	07610122	NS	15,423	44,868
EC	Sainte-Marie Island	00001288	QC	887	1,018
EC	Wilmer Marsh (dumping area)	16096079	BC	35,683	74,012
NCC	Bayview	00022831	ON	52,342	9,237
NCC	Central LeBreton	00023983	ON	2,457,761	433,722

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
NCC	Hurdman North	00022822	ON	22,104	3,901
NCC	LeBreton East	00023316	ON	21,101	20,192
NCC	Stanley Park West	00022858	ON	32,963	5,817
NRC	Biotechnology Research Institute	00000909	QC	7,000	907
NRC	Dominion Radio Astrophysical Observatory - slag piles and other APECs	00024308	BC	31,000	8,852
NRC	Dominion Radio Astrophysical Observatory	00000907	BC	9,000	2,932
PCA	A1 Waste Transfer Station	15412001	AB	14,331	5,762
PCA	Abandoned Light Station	00023460	BC	4,106	906
PCA	Active Pass	00023457	BC	12,498	2,176
PCA	B1 Trade Waste Pit	15412015	AB	12,727	5,195
PCA	Bear Creek Compound	20009001	YT	509,011	49,208
PCA	C2 JNP Tangle Creek Compound	15412017	AB	8,315	4,818
PCA	Former Shed and Boat House	00023459	BC	4,106	906
PCA	Fort Conger Historic Site	00008328	NU	53,669	12,025
PCA	Forty Mile Creek Landfill	15404044	AB	239,700	67,352
PCA	Garden River Old Dump	15841002	AB	77	15,807
PCA	Harriet Harbour	00024667	BC	233,879	21,733
PCA	Illecillewaet Campground: Campsite # 30	00024128	BC	7,943	2,363
PCA	Kingston Inner Harbour Marsh	00023391	ON	9,942	1,800
PCA	Lobstick Maintenance Yard	14567002	SK	338,221	144,991
PCA	Maintenance Compound Garage, Former UST Site	12897002	MB	8,177	2,731
PCA	Major Shore Light	00023458	BC	4,106	906
PCA	Mount Agassiz	00023456	MB	27,810	10,507
PCA	Oil trap, operational centre's garage at Forillon National Park	00023467	QC	1,970	493
PCA	Rogers Pass Maintenance Compound	18752001	BC	50,062	3,167
PCA	Rogers Pass West	00022913	BC	136,061	6,841

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
PCA	Russell Island Homestead	00024299	BC	42,768	7,727
PCA	Saturna Island Dump	00023463	BC	4,106	906
PCA	Saturna Island Fuel Shed	00023461	BC	4,110	906
PCA	Saturna Island Light Tower	00023462	BC	4,106	906
PCA	Site 14.3	06959084	QC	295,655	49,999
PCA	Site 15.6	06959088	QC	22,092	3,899
PCA	Ward Hunt Island (site 15)	06959090	QC	11,048	2,744
PCA	Ward Hunt Island (site 15)	56482015	NU	80,628	15,717
PWGSC	Alaska Highway - Fireside Maintenance Camp	09401080	BC	1,006,227	177,569
PWGSC	Alaska Highway - Former Military Establishment (Ft Nelson Rec Centre) P-08I	09401270	BC	2,927,474	516,613
PWGSC	Alaska Highway - Fort Nelson Gravel Pit	09401030	BC	48,486	8,556
PWGSC	Alaska Highway - Iron Creek Maintenance Camp	09401090	YT	1,345,292	237,405
PWGSC	Alaska Highway - Liard Maintenance Camp	09401070	BC	514,849	90,856
PWGSC	Alaska Highway - Muncho Lake Maintenance Camp	09401060	BC	634,930	112,047
PWGSC	Alaska Highway - Sikanni Maintenance Camp	09401020	BC	186,913	32,985
PWGSC	Alaska Highway - Steamboat Maintenance Camp	09401040	BC	66,400	11,718
PWGSC	Alaska Highway - Toad River Maintenance Camp	09401050	BC	661,649	116,762
PWGSC	Alaska Highway - Wonowon Maintenance Camp	09401010	BC	108,964	19,229
PWGSC	Esquimalt Graving Dock	17410001	BC	1,746	308
PWGSC	Esquimalt Graving Dock	17410002	BC	18,512	3,267
PWGSC	Esquimalt Graving Dock	17410004	BC	6,123	1,081
PWGSC	Esquimalt Graving Dock	17410005	BC	4,081	720
PWGSC	Esquimalt Graving Dock	17410006	BC	19,240	3,395
PWGSC	Esquimalt Graving Dock	17410007	BC	38,407,464	6,777,788
PWGSC	Esquimalt Graving Dock	17410008	BC	8,163	1,440

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
PWGSC	New Westminster Railway Bridge	17026001	BC	29,772	5,254
PWGSC	Unused Lot	19881001	BC	26,427	4,664
PWGSC	Vanier Park	16879001	BC	13,498	2,382
RCMP	Beaver Creek Detachment	20190016	YT	31,047	5,479
RCMP	Cape Dorset RCMP Detachment Site	00001070	NU	8,049	31,409
RCMP	Carcross RCMP	23322017	YT	28,518	5,033
RCMP	Contaminated Site 00013518	00013518	NL	7,650	1,350
RCMP	Fort Providence RCMP Detachment Site	20991001	NT	30,090	5,310
RCMP	Nain RCMP	00001138	NL	43,520	7,680
RCMP	Rankin Inlet RCMP Detachment Site	0001071	NU	54,045	9,904
TC	Cambridge Bay Airport, Cambridge Bay Apron	00024301	NU	1,002,213	176,861
TC	Cambridge Bay Airport, Fire Training Area	N0010002	NU	140,305	24,760
TC	Edmonton Airport, Airside Operations and Maintenance Centre	15473005	AB	198,048	34,950
TC	Fort Nelson Airport, EBS Contaminated Sites	N0025001	BC	1,218,441	215,019
TC	Gander Airport, Former Gas Station Site	00967016	NL	361,525	63,798
TC	Gander Airport, Former Remote Radar Site	00967059	NL	10,275	1,813
TC	Gander Airport, Fuel Contaminated Site	00967043	NL	8,215	1,450
TC	Halifax Airport, Fire Training Area (FTA)	03057001	NS	9,939	1,754
TC	Inuvik Airport, Fire Training Area	N0014002	NT	646,147	114,026
TC	Kingston Inner Harbour	22905009	ON	92,930	16,399
TC	London Airport, Former Fire Fighting Training Areas	10855002	ON	200,190	35,328
TC	Norman Wells Airport, Norman Wells Taxiway C	00024131	NT	94,102	16,606
TC	Oshawa Harbour, Area A (West Wharf)	67590001	ON	421,843	74,443
TC	Oshawa Harbour, Area E (Marina)	67590005	ON	332,589	58,692
TC	Otter Creek Former Landfill / Asphalt Plant	01831001	NL	113,900	20,100

Custodian	Site name	Federal site identifier	Province/territory	FCSAP remediation expenditures (\$)	Custodian expenditures (\$)
TC	Parcels in the village of Kuujjuaq	08389003	QC	173,085	30,544
TC	Resolute Bay Airport, Old Landfill/ Main Drum Cache	N0017003	NU	237,683	41,944
TC	Sediments - Gaspé wharf	72064003	QC	448,847	79,208
TC	St. John's Airport, Disposal Site 2 and Fire Training Area	00339002	NL	91,099	16,076
TC	St. John's Airport, Marine Fire Training Area	00339015	NL	34,000	6,000
TC	Thunder Bay Airport, Former firefighting training area	11943001	ON	288,683	50,944
TC	Victoria Harbour, Lot 2A: Middle Harbour Fill Site; Harbour Floor	17348003	BC	30,600	5,400
TC	Victoria Harbour, Lot 6A: Barclay Point; Rock Bay East Fill; Rock Bay North Fill; Bay Street East Fill; J-15 Bay Street Centre Fill; J-16 Bay S	17348008	BC	1,621,694	286,181
TC	Victoria Harbour, Lot 17: Victoria Harbour Floor; Point Ellice (Bay Street); Johnson Street; Point Ellice (Bay Street); East Selkirk; Macaulay	17348020	BC	785,506	138,619
TC	Watson Lake Airport, Former Tenant-Owned Maintenance Garage - APEC 7	N0281009	YT	853,826	150,675
TC	Whitehorse Airport, Air Terminal Building APEC 20A Parking Lot	20146001	YT	28,365	5,006
TC	Whitehorse Airport, Former Tenant Air Fuelling Facility - APEC 6	20146003	YT	1,039,855	183,504
TC	Whitehorse Airport, Historic Military Base West of Runways - APEC 20C	00024670	YT	469,889	82,922
TC	Whitehorse Airport, Regional Fire Depot - APEC 8	20146004	YT	534,968	94,407
TC	Williams Lake Airport, Fire Training Areas - Former and Historic	N0033001	BC	126,650	22,350



APPENDIX D

Environmental Liability for Federal Contaminated Sites

ENVIRONMENTAL LIABILITY FOR FEDERAL CONTAMINATED SITES

Environmental liabilities are the estimated costs related to the remediation or risk management of contaminated sites for which the Government of Canada is obligated, or will likely be obligated, to incur costs. A contingent liability is disclosed when the government's obligation to a contaminated site is unknown and where future events are expected to resolve the uncertainty. Recording environmental liability is a requirement found in the Treasury Board Directive on Contingencies; liabilities are reported annually in the Public Accounts of Canada.⁶

According to Treasury Board of Canada Secretariat guidance, a liability for remediation of contaminated sites should be recognized when, at the financial reporting date, the following applies:

- An environmental standard exists;
- Contamination exceeds the environmental standard;
- The government:
 - owns the land;
 - is directly responsible; or
 - accepts responsibility (e.g., when there is little, if any, discretion to avoid the obligation);
- It is expected that future economic benefits will be given up; and
- A reasonable estimate of the amount can be made.

An obligation for remediation or risk management of contaminated sites cannot be recognized as a liability unless all these criteria are satisfied.

Table D.1: Adjusted total environmental liability for contaminated sites (2013-2014)

	March 31, 2013 (\$)	March 31, 2014 (\$)	Difference (\$)
Total liability for remediation of contaminated sites	4,891,367,062	4,795,679,415	-95,687,647
Less:			
Sydney Tar Ponds	75,403,644	854,000	-74,549,644
Port Hope Area Initiative	1,034,459,762	984,191,962	-50,267,800
Canadian Broadcasting Corporation	260,000	588,000	328,000
Enterprise Cape Breton Corporation	176,213,000	158,548,000	-17,665,000
Marine Atlantic Inc.	170,000	431,000	261,000
VIA Rail Canada Inc.	900,000	500,000	-400,000
Adjusted total liability of contaminated sites	3,603,960,656	3,650,566,453	46,605,797

⁶ Public Accounts of Canada 2013-2014, Volume I (PWGSC, 2014), www.tpsgc-pwgsc.gc.ca/recgen/cpc-pac/index-eng.html.

Table D.2: Adjusted total environmental liability for contaminated sites, by participating custodian (2013-2014)

Custodian	March 31, 2013 (\$)	March 31, 2014 (\$)	Difference (\$)
Aboriginal Affairs and Northern Development Canada	2,530,833,152	2,602,985,802	72,152,650
Agriculture and Agri-Food Canada	856,349	1,513,644	657,295
Canada Border Services Agency	2,295,800	2,320,091	24,291
Correctional Service of Canada	3,697,562	3,963,650	266,088
Environment Canada	120,803,919	110,916,041	-9,887,878
Fisheries and Oceans Canada	94,450,638	96,498,180	2,047,542
Health Canada	170,255	167,482	-2,773
Jacques Cartier and Champlain Bridges Incorporated	33,200,000	35,861,000	2,661,000
National Defence	407,148,644	462,424,603	55,275,959
National Capital Commission	27,643,000	24,224,000	-3,419,000
National Research Council of Canada	197,000	168,400	-28,600
Natural Resources Canada ^a	955,311	3,335,534	2,380,223
Parks Canada Agency ^b	20,703,590	20,761,201	57,611
Public Works and Government Services Canada ^c	176,307,072	118,717,537	-57,589,535
Royal Canadian Mounted Police	3,937,539	3,121,562	-815,977
Transport Canada	180,760,825	163,587,726	-17,173,099
Total	3,603,960,656	3,650,566,453	46,605,797

Notes:

^a Does not include liability for the Port Hope Area Initiative, which is not part of FCSAP.

^b Includes liabilities associated with fuel-storage tank systems.

^c Does not include liability for the Sydney Tar Ponds, which is not part of FCSAP.

Table D.3: Changes in total liability for remediation of contaminated sites (2013-2014)

	March 31, 2013 (\$)	March 31, 2014 (\$)	Difference (\$)
Opening balance	4,772,902,706	4,891,367,062	118,464,356
Less: expenditures reducing opening liabilities	321,125,978	432,808,848	111,682,870
Add: changes in estimated remediation costs	405,866,323	261,574,058	-144,292,265
Add: new liability for sites not previously recorded	33,724,011	75,547,143	41,823,132
Closing balance	4,891,367,062	4,795,679,415	-95,687,647

