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Canada

Federal Contaminated Sites Action Plan (FCSAP)

ANNUAL REPORT (2014-2015)

Federal Contaminated Sites Action Plan: Annual Report 2014–2015

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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 the 2011–2012 fiscal year 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 2014–2015, the fourth year of Phase II.

Nationally, federal custodians involved in FCSAP reported total expenditures of $290.7 million in 2014–2015. This includes $8.5 million spent on assessments, $262.8 million spent on the remediation and risk management of federal contaminated sites, and $19.3 million for program management activities.[1] In 2014–2015, the program achieved several results:

- Custodians conducted assessments at 322 sites to characterize environmental conditions; of the 180 sites that were fully assessed, 31% require remediation or risk management, while 69% require no further action, as they pose no significant risk.
- Custodians conducted remediation and risk management activities at 368 sites, leading to improvements to environmental quality and reduction of federal financial liability; at 39 of these sites, the remediation process was completed.
- Approximately 1400 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 2014–2015, the FCSI listed approximately 22 820 sites. A comparison of FCSI data from the 2013–2014 and 2014–2015 fiscal years shows that the number of sites suspected of being contaminated decreased by 14%. There was also a 6% decrease in the number of active sites and a 7% increase in the number of closed sites, where no further action will be required. Much of this progress was a result of the available FCSAP funding, which allowed custodians to conduct assessment and remediation work at their sites. Approximately 79% of expenditures reported to the FCSI in 2014–2015 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 increased by $997 million to a total of $5.793 billion during 2014–2015. Adjusted liability, an estimate of the liability for sites that may be eligible for FCSAP funding, increased by $439 million to a total of $4.089 billion during 2014–2015. 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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[1] Because of rounding, the numbers do not add exactly to the total.

TABLE OF CONTENTS

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
HC	Health Canada
JCCBI	Jacques Cartier and Champlain Bridges Incorporated
LED	Lands and Economic Development
NAO	Northern Affairs Organization
NCC	National Capital Commission
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 in 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, custodians spent up to $100 million annually to remediate contaminated sites or manage risks associated with them. Since the start of the program in 2005 to April 2015, $2.7 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

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 terrestrial[2] and aquatic[3] 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 reported FCSAP remediation expenditures before April 1, 2011.

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.

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."

[2] 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.

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

advice and technical assistance to custodians in support of the program. For more information about the administration of FCSAP, see Appendix A.

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

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

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

2 PROGRAM RESULTS (2014–2015)

This section describes the achievements of the 13 custodians that conducted assessment and remediation activities in the 2014–2015 fiscal year. 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 2014–2015 at several 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's 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.

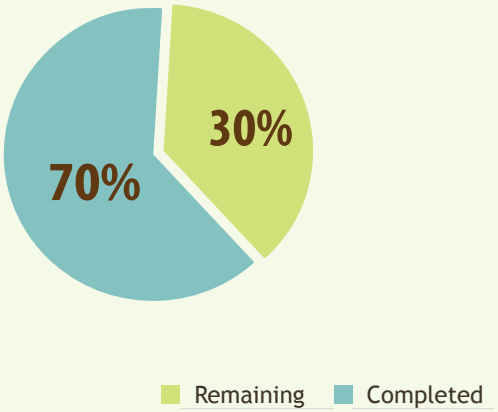
Overview of program results
for the 2014–2015 fiscal year:

- Assessment activities on 322 sites cost $8.5 million, including the custodians' share of the costs. Of the 180 sites that were fully assessed, 31% require remediation or risk management, while 69% require no further action.
- Remediation and risk-management activities on 368 sites cost $262.8 million, including the custodians' share of the costs. Custodians completed remediation activities on 39 of these sites, while work will continue on the remaining 329 sites.
- Adjusted liability, an estimate of liability for contaminated sites that may be eligible for FCSAP funding, increased by $439 million during 2014–2015.

2.1 ASSESSMENT

Custodians may suspect a site of being contaminated as a result of past activities; for example, in places where fuel-storage tanks were used and may have leaked. In such cases, custodians can undertake or contract environmental site assessments 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 322 sites, including 97 sites first funded in the 2014–2015 fiscal year, at a program cost of $6.6 million; custodians spent an additional $2.0 million, exceeding the FCSAP cost-sharing requirement for assessment. After the fourth year of Phase II, 70% of the five-year performance target has been reached, as shown in Table 1. The assessment targets for Phase II were 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. The five-year target may not be met because the average cost to assess sites is higher in Phase II than in Phase I.

Table 1: Performance indicator 1: Assessing sites

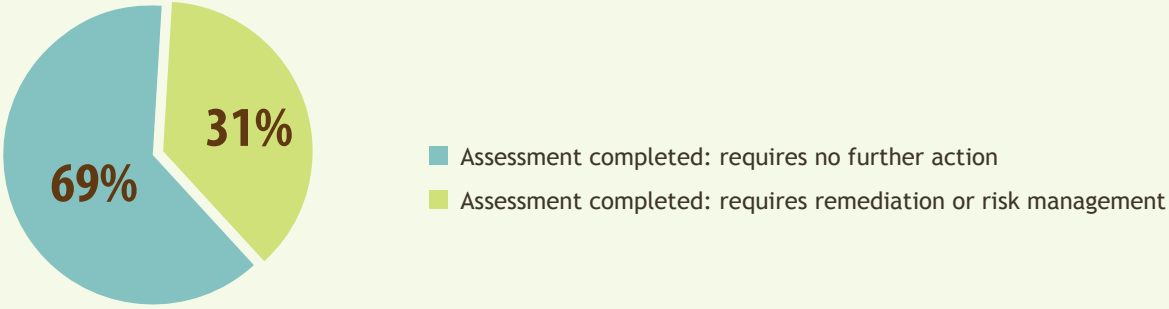
Performance indicator	Result (as of 2014-2015)	Five-year target (2011-2012 to 2015-2016)
Number of sites where FCSAP-funded assessments are being conducted	1614 sites	2300 sites 

An environmental site assessment may involve taking samples and testing for levels of contamination above those stipulated in environmental quality guidelines. The Canadian Council of Ministers of the Environment has published environmental quality guidelines on the management of contaminants in soils, sediments, freshwater and marine water.[4] 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 there. 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 322 sites where assessments took place, custodians completed the assessment process at 180 sites, while 142 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, 125 (69%) require no further action and 55 (31%) 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 (2014-2015)



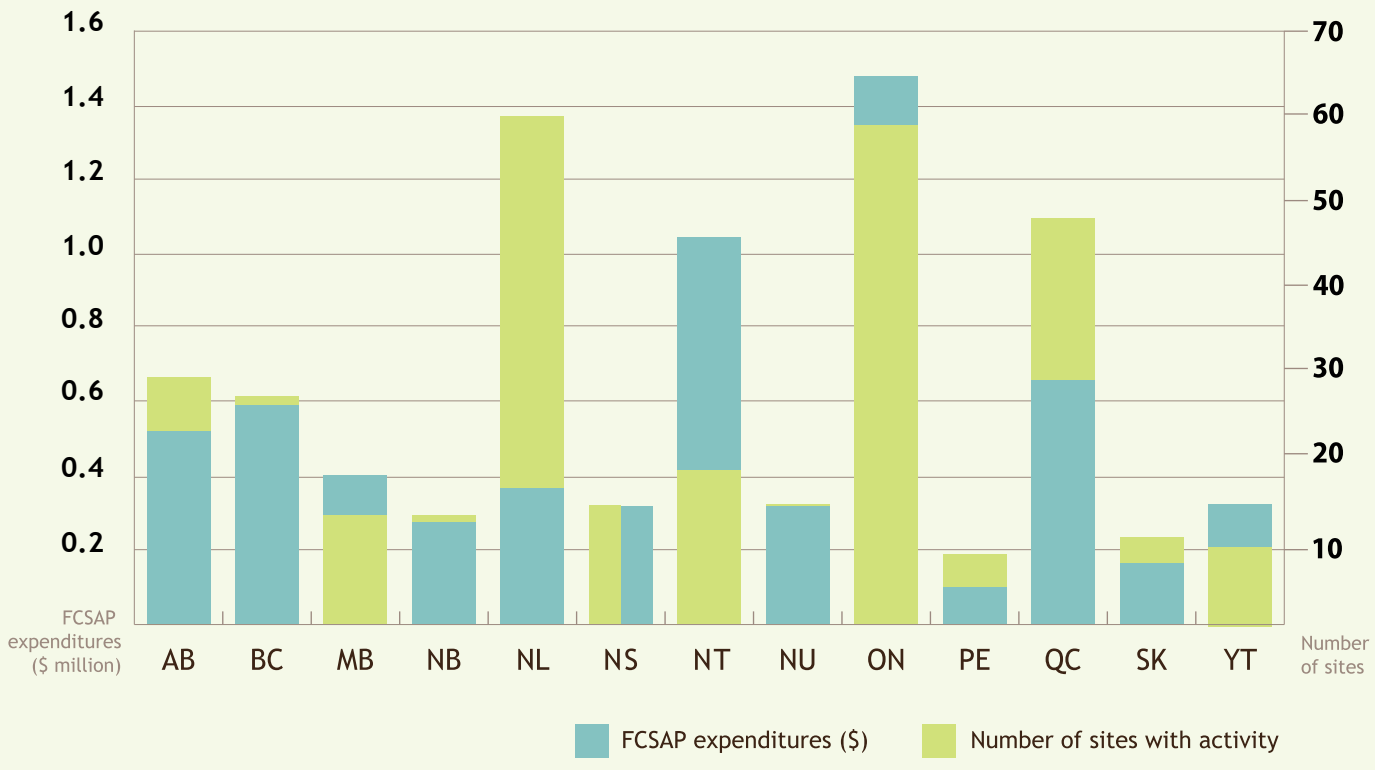
[4] www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html

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 Fisheries and Oceans Canada, Parks Canada Agency, and Aboriginal Affairs and Northern Development Canada's Northern Affairs Organization (AANDC-NAO), which together spent $3.7 million of the $6.6 million (or 56%) of the FCSAP assessment expenditures reported in the 2014–2015 fiscal year. These three custodians conducted more than half of all FCSAP-funded site assessments (169 of 322, or 52%) in 2014–2015.

As shown in Figure 2, the largest expenditures occurred in Ontario and the Northwest Territories, accounting for 39% of all FCSAP assessment expenditures, though the largest numbers of sites assessed were in Newfoundland and Labrador, Ontario, and Quebec (52% of the total).

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



CASE STUDY

CLASS HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT AT REMOTE NEWFOUNDLAND AND LABRADOR MINOR NAVIGATIONAL AID SITES

Location: Newfoundland and Labrador
Custodian: Fisheries and Oceans Canada (DFO)

There are more than 700 minor navigational aid sites—including but not limited to range lights, floating buoys and fog signals—along the coast of Newfoundland and Labrador. During the mid-1980s, the Canadian Coast Guard's Newfoundland Region (CCG NL) found that a large amount of AD-608Z potash batteries and lead-acid batteries were not being removed from these sites throughout the province. At that time, the CCG NL would transfer uncharged replacement batteries to the sites by helicopter and then charge them on site by adding water. Once the batteries had been charged, the CCG Helicopter section would no longer transport them from the site because of safety concerns with the aircraft. The CCG NL decided that the best way to remove the batteries was to collect and incinerate them on site.

During the 2000–2001 fiscal year, DFO completed Phase I and II environmental site assessments of the minor navigational aids along the Labrador coast. The assessments revealed that 41 sites contained both AD-608Z potash and lead-acid battery debris, and battery burn pits, which caused soil contamination by metals (lead, mercury and zinc) and benzo(a)pyrene, a polycyclic aromatic hydrocarbon (PAH).

As a result of the assessment findings and recommendations, a multidisciplinary team completed an aesthetic cleanup, which involved the removal of visible debris and stained soil, between 2004 and 2007. The team included personnel from the CCG NL's Environment, Marine and Civil Infrastructure, Helicopter, and Fleet sections; this collaborative approach reduced the team's travel costs and vessel time. Overall, the team removed 149 batteries, 133 drums of metal- and PAH-contaminated soil, and miscellaneous construction waste from the sites.

During 2011–2012, DFO hired a consultant to complete a Phase III environmental site assessment on the 41 remote minor aid sites to determine whether more work was required or the sites could be closed. The results of the investigation determined that five sites required no further investigation, but 36 sites did require more work. The consultant recommended that a Class Human Health and Ecological Risk Assessment (HHERA) for the remaining 36 sites be completed to ensure that these sites pose little risk to human health and the environment.

In 2014–2015, the consultant completed a Class HHERA for the remaining 36 sites. As a result, DFO was successful in closing 35 of the 36 sites and reduced the overall contaminated site liability for DFO by approximately $1.75 million.

This work was logistically challenging because of the large number of remote sites that were accessible only by helicopter. The consultants also experienced challenges with sample collection because of weather conditions, and because the rocky cliffs and steep terrain limited the number of locations for soil samples.

Given the remoteness of each location, the environmental management of these assets could have become very expensive. However, through collaboration, planning and multitasking, the CCG NL was able to work with various programs to keep the cost to a minimum. In particular, without vessel-storage capability there would have been a significant increase in the costs for transporting the hazardous waste by helicopter to a suitable transfer location and for road transport for final disposal.

The benefit of the Class HHERA is that it closes the liability portion of operational aids to navigation along the Labrador Coast for the CCG NL Region. For cases with similar site characteristics and contamination issues, the Class HHERA methodology would be the best approach. This methodology would also be applicable to other federal departments that deal with a group of sites that have similar characteristics (i.e., remote location, similar contamination, still operational and having extensive contamination-related liabilities). This is a cost-effective approach that supports the FCSAP mandate to reduce liability at contaminated sites.

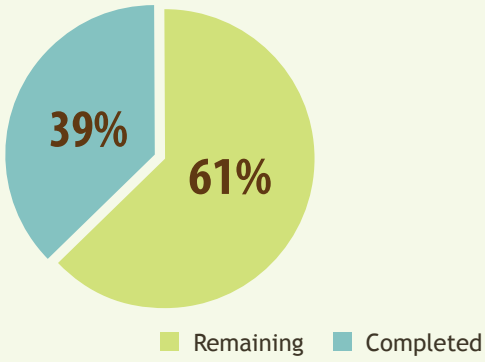
2.2 REDUCTION OF RISKS TO HUMAN HEALTH AND THE ENVIRONMENT

If the completed site-assessment activities have determined that the risks to human health or the environment are unacceptable, in terms of 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 the 2014–2015 fiscal year, FCSAP funded remediation activities at 368 sites, at a cost of $238.3 million. Custodians spent an additional $24.5 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.

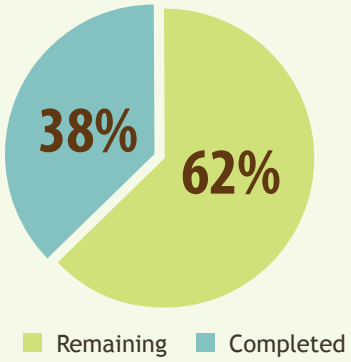
The remediation target for Phase II was based on the number of remediation sites worked on in Phase I and the total cost of this work. After the fourth year of Phase II, 39% of the five-year performance target has been reached, as shown in Table 2. The five-year target will not be met because custodians 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 is limited by the amount of funding that can be spent. Custodians were not able to spend all of the FCSAP funding available to them in 2014–2015, due to reasons such as unpredictable weather conditions and contracting delays, limiting the number of sites that custodians were able to work on.

Table 2: Performance indicator 2: Starting remediation

Performance indicator	Result (as of 2014-2015)	Five-year target (2011-2012 to 2015-2016)
Number of priority FCSAP-funded sites where risk-reduction activities are being conducted	583 sites	1500 sites 

Of the 368 sites where remediation was under way in 2014–2015, the remediation phase (step 8 of the 10-step federal approach to contaminated sites, detailed in Appendix B) was completed at 39 sites, signifying that risks have been reduced to safe levels. Risk-reduction activities will continue at the remaining 329 sites. While the number of sites undergoing remediation varies from year to year, the 2014–2015 result suggests that the five-year target of completing risk-reduction 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 had anticipated when the target was established in 2011–2012. This is not uncommon in contaminated-site projects because additional contamination can be discovered once the project begins. Weather or unanticipated technical issues can also cause delays.

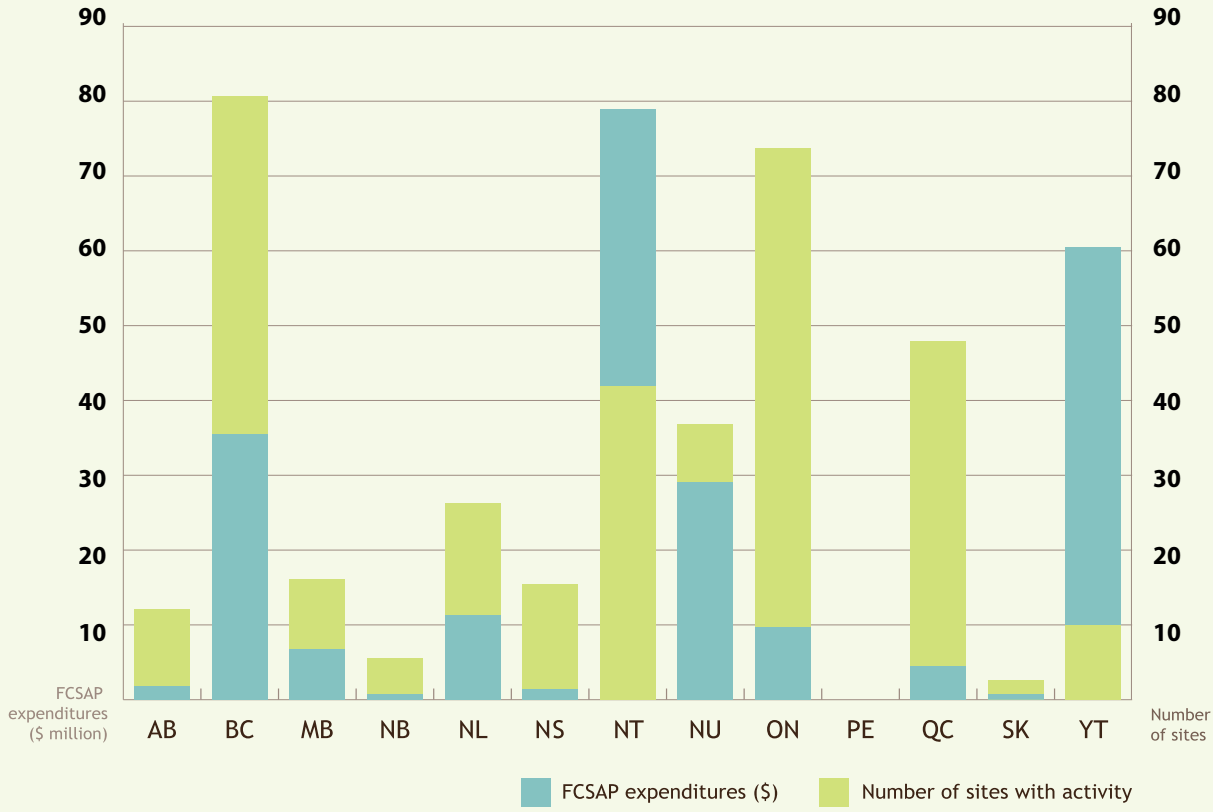
Table 3: Performance indicator 3: Completing remediation

Performance indicator	Result (as of 2014-2015)	Five-year target (2011-2012 to 2015-2016)
Number of priority FCSAP-funded sites where risk-reduction activities have been completed	140 sites	368 sites 

As Figure 3 shows, the largest FCSAP expenditures on remediation activities occurred in the three territories and British Columbia, accounting for 86% of the total.

Two custodians account for 79% of this spending: AANDC-NAO ($160 million) and the Department of National Defence ($28 million). Both of these custodians are working on the remediation of large, complex and remote sites. For example, approximately $123 million (52% of total expenditures) was spent in 2014–2015 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.

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



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 custodian.

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 that may be eligible for FCSAP funding.

The total liability for the remediation of contaminated sites, as reported in the Public Accounts of Canada, increased by $997 million from $4.796 billion for 2500 sites as of March 31, 2014, to $5.793 billion for 2400 sites as of March 31, 2015. The adjusted liability increased by approximately $439 million over the same period.

CASE STUDY

REMEDIATION AT THE KITCHENUHMAYKOOSIB INNINUWUG FIRST NATION

Location: Kitchenuhmaykoosib Inninuwug, Ontario
Custodian: Aboriginal Affairs and Northern Development Canada (AANDC)

Kitchenuhmaykoosib Inninuwug is a First Nation community located approximately 400 km northeast of Sioux Lookout, Ontario. The on-reserve population is approximately 850. The community is not accessible year-round by road, but there are winter roads and scheduled or chartered air service is available. The First Nation is not connected to the provincial electrical grid and relies on a diesel-powered generating station.

Over the years, improper storage and handling of petroleum products—mainly fuel oil, but also gasoline and diesel fuel—led AANDC to believe that there was contamination at several sites throughout the area.

In 2005 and 2006, AANDC completed a remedial investigation and option analysis at 14 sites in the community. This action included an environmental site assessment, involving the installation of test pits, boreholes and groundwater-monitoring wells, as well as laboratory analysis of soil, groundwater and surface-water samples. The assessment team determined that 10 of the sites were Class 1 (high priority), and that the contamination was caused primarily by improper fuel storage and handling. Approximately 6659 m^3 of soil was contaminated by petroleum hydrocarbons (PHCs). Contamination by polycyclic aromatic hydrocarbons, benzene, toluene, ethylbenzene, xylenes and lead was also present at some sites. The PHC contamination in groundwater was minor and, where present, did not extend beyond the limits of the affected soils.

The 10 contaminated sites were the community's seniors' residence, the school's fuel-storage area, the school's day tank and tool room, the former solar school, the school's teacherage day tanks, the garage, the motel, the police station, the former Atmospheric Environmental Services site, and the contractor's camp.

From September 2010 to March 2012, the remediation team excavated the PHC-contaminated soil from the 10 sites and placed it in a bioremediation cell: a soil-treatment facility built on reserve. Bioremediation included soil aeration and the addition of nutrients to promote the biodegradation of PHCs by hydrocarbon-using bacteria that occur naturally in soil. The team also installed a combined solar- and wind-powered subsurface vapour-extraction system beneath the garage building's floor, to reduce the potential for migration of hydrocarbon vapours into the building from inaccessible contamination remaining underneath the garage.

The remediation team treated groundwater during the soil excavation by using a portable treatment system, which consisted of an oil/water separator and granular activated carbon vessels. The treated effluent was stored on site and subsequently discharged to the community sewage lagoon once it was confirmed that the water met the established treatment objectives.

The remedial program also included the decommissioning of several derelict fuel-storage tanks and replacement of fuel-oil storage tanks that had serviced buildings at several of the sites, as well as the removal of 12 000 L of liquid wastes from the community, for disposal.

After two full treatment seasons at the bioremediation facility, soil sampling in 2013 indicated that the remediation stage of the project was complete. The remediation team conducted further confirmatory soil sampling, and site closure began in December 2014; all sites were reported closed by January 2015.

The increase in adjusted liability is largely attributable to Aboriginal Affairs and Northern Development Canada, which reported an increase of $415 million in total liability in the 2014–2015 fiscal year. Public Works and Government Services Canada also reported an increase in liability by approximately $41 million. Among the 11 custodians that reported increases in total liability, these two custodians accounted for 91% of the total increase in adjusted liability. Despite this overall increase, five of 16 custodians reported decreases in total liability. Three of these custodians (Correctional Service of Canada, Jacques Cartier and Champlain Bridges Incorporated, and Transport Canada) reduced their total liabilities by more than 10%, as detailed in Table D.2 in Appendix D.

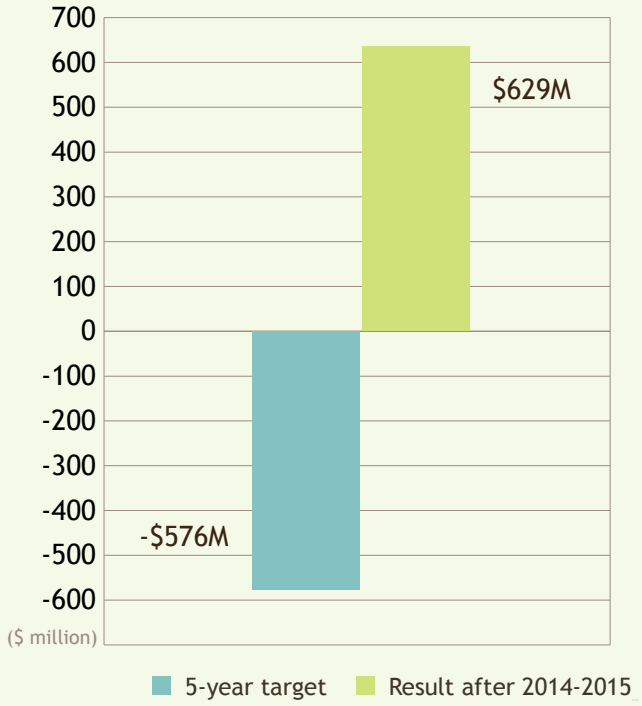
Changes in total liability for the remediation of contaminated sites can be attributed to several factors. Remediation expenditures at contaminated sites contribute to decreases in liability, while increases may result from the completion of assessment activities at certain sites, and the subsequent 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. Furthermore, variability in the Consumer Price Index (through inflation) and in lending rates (through calculation of net present value) can affect the liabilities for high-cost projects considerably.

As described in the Public Accounts of Canada 2014–2015, remediation expenditures that reduced total liability by $300 million were offset by: $1.276 billion in increases to total liability resulting from changes in site-remediation costs; $39 million in new liability for sites not previously recorded; and an expected recovery of $17 million. As detailed in Table D.3 in Appendix D, these were factors in the $997-million increase 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 $629 million from fiscal year 2010–2011 to 2014–2015. Despite the overall increase, since 2010–2011, liability at 45 of these sites was reduced by $256 million, but this progress was offset by an increase in liability of $885 million at 28 sites. This amount includes increases in liability at Faro Mine and Giant Mine of $732 million, representing 83% of the increase. These large and complex projects will take many years to navigate the 10-step process set out in A Federal Approach to Contaminated Sites (detailed in Appendix B). As a result, the multi-year cost projections for Faro and Giant Mine will evolve over time as work progresses and additional information is obtained.

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

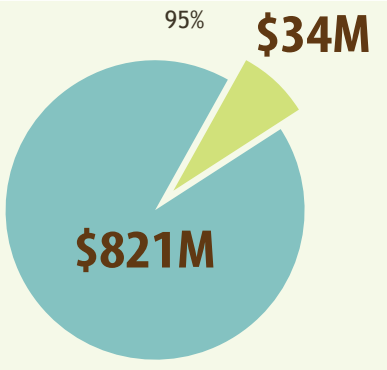
Performance indicator	Result (as of 2014-2015)	Five-year target (2011-2012 to 2015-2016)
Change in total liability for the 73 highest-priority FCSAP sites (from a liability perspective)	Increase in liability of $629 million	Reduction in liability of $576 million



The second indicator relates to the percentage of remediation expenditures that reduce financial liability over the five years of Phase II. After the fourth year of Phase II, 96% of FCSAP remediation expenditures ($821 million of $855 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 2014-2015)	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%



CASE STUDY

REMEDIATION OF MOUNT AGASSIZ FORMER SKIING AREA

Location: Riding Mountain National Park of Canada, Manitoba
Custodian: Parks Canada Agency

Nestled within Riding Mountain National Park, Mount Agassiz is the location of a former skiing area that operated from the 1960s until its closure in the year 2000. Several buildings, including the Mount Agassiz ski lodge, were abandoned on the premises after ski operations ceased. Over the decades, activities from the ski operations left a legacy of soils contaminated with petroleum hydrocarbons and polycyclic aromatic hydrocarbons.

The source of the soil contamination was two underground tanks, located north of the ski lodge, that had been used to store heating oil. In 2010, remediation teams contracted by Parks Canada and Public Works and Government Services Canada removed the tanks, along with 150 m^3 of soil. However, the soil underneath the ski lodge remained in place and tests confirmed that it too was contaminated. The affected area was then estimated at 115 m^2 and its volume at 345 m^3.

At public engagement meetings organized by Parks Canada, the former ski lodge area was consistently raised as a concern, because of the persistence of the contaminated soils and because the derelict buildings hindered the use and development of the site.

During the winter of 2015, the remediation team completed the final phase of the remediation with the demolition of the former ski lodge and the removal of 162 metric tonnes of affected soils. The team sorted some of the materials from the demolition, to optimize the recycling of metals and to minimize the transportation of waste to an authorized landfill.

Fifteen years after the closure of the ski lodge and five years after the removal of the underground storage tanks, the site is now completely remediated. Parks Canada can confidently engage in discussions with the community on the best options to benefit visitors to Riding Mountain National Park, while working to restore the ecological integrity of Mount Agassiz.

2.4 FCSAP SECONDARY BENEFITS

Many FCSAP projects have socio-economic benefits, particularly in Indigenous communities and in northern or rural areas. Through joint ventures established between some custodians 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 the 2014–2015 fiscal year, FCSAP activities led to the creation of approximately 1400 jobs,[5] 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 Indigenous 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.

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 risks to human health or the environment.

As of March 31, 2015, the FCSI contained more than 22 820 sites, of which 14 430 (63%) have been closed, because remediation work has either been completed or was not required. Approximately 5 790 sites (25%) are active, meaning that contamination has been confirmed at the site and that remedial action is or may be required. About 2 600 sites (12%) 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

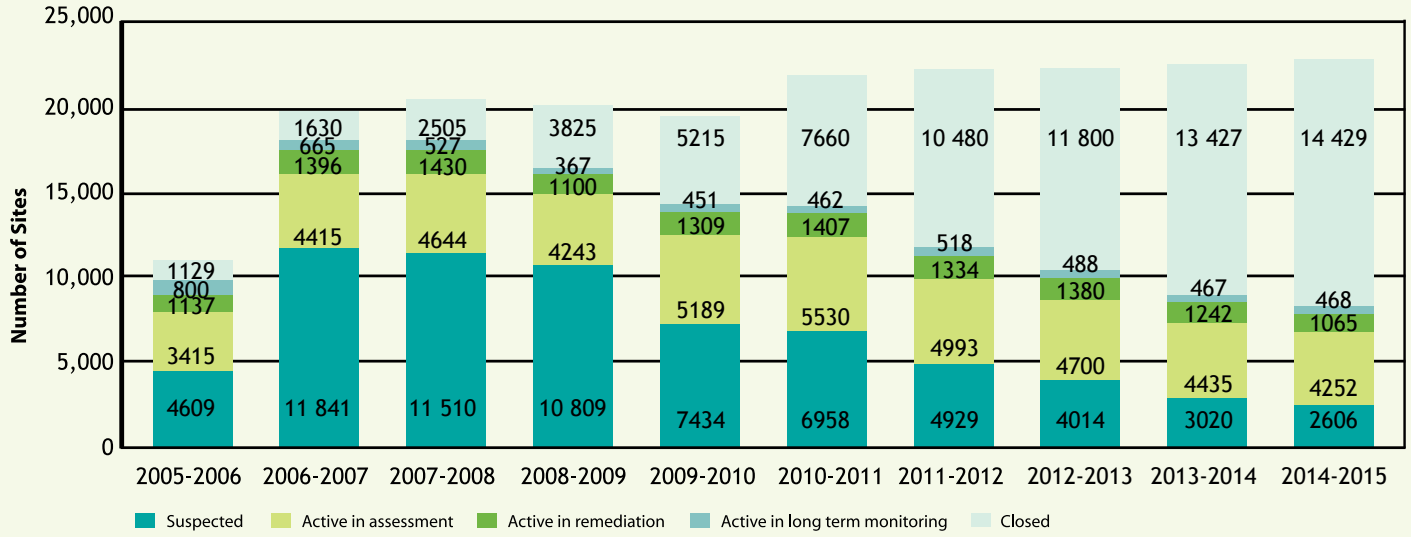
[5] Based on a multiplier from ECO Canada, issued in 2007 and validated in 2014.

suspected sites decreased by 14% from 3020 to 2606 over the 2014–2015 fiscal year. The number of active sites decreased by 6% from 6144 to 5785.

The status of active sites depends on the highest step completed as set out in the federal approach to managing contaminated sites, detailed in Appendix B. The number of active sites in the assessment stage (steps 3 to 6) decreased by 4% from 4435 to 4252, while the number of active sites in the remediation stage (steps 7 to 9) decreased by 14% from 1242 to 1065. The number of active sites in long-term monitoring (step 10) increased by 0.2% from 467 to 468.

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 (steps 1 or 2) may be closed when a historical review indicates that past activities would not likely lead to contamination. Sites undergoing assessment (steps 3 to 6) are usually closed if the assessment determines that contaminants are not present or do not pose an unacceptable risk. Sites are also closed after remediation, risk management or long-term monitoring activities (steps 7 to 10) have reduced the risks to acceptable levels. The number of closed sites increased by 7% in 2014–2015 from 13 427 to 14 429. The total number of closed sites in the FCSI has increased by 1 178% (1 129 to 14 429) 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 2005-2006 to 2014-2015



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 the 2014–2015 fiscal year were $264.2 million, or 73% of the available funding. Custodians spent an additional $26.5 million to meet their cost-share requirements.

Remediation and risk management expenditures at federal contaminated sites represented 90% of total FCSAP expenditures ($238.3 million), assessment expenditures represented 3% of the total ($6.6 million), and program management expenditures accounted for 7% ($19.3 million). Table C.3 in Appendix C details the allocations for the three types of FCSAP funding.

The most common reasons why custodians did not spend all of the funds made available to them in 2014–2015 involved contracting and project delays, such as weather conditions that either prevented access to the sites or were inhospitable to the types of work being carried out.

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 available FCSAP funding and the expenditures was $98.3 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 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 2014–2015, 69% of the FCSAP funding variance was re-profiled, 11% was carried forward, 14% was internally cash-managed, and 6% was lapsed. This means that, of the $98.3 million of available funding that was not spent in 2014–2015, $92.7 million (94%) will be available in future years.

CASE STUDY

DECONTAMINATION AND DECONSTRUCTION OF THE GIANT MINE ROASTER COMPLEX

Location: Yellowknife, Northwest Territories
Custodian: Aboriginal Affairs and Northern Development Canada (AANDC)

Giant Mine was a major economic driver for the Northwest Territories. Operating between 1948 and 2004, the mine produced over 7.5 million ounces of gold from arsenopyrite ore formations located on the north shore of Yellowknife Bay. Gold processing entailed roasting the ore, producing as a byproduct arsenic trioxide dust, a highly toxic form of arsenic. Control of the property, as well as the main environmental liabilities, was transferred to AANDC after the mine's closure.

The roaster complex was a group of 10 structures where the arsenic trioxide was generated; the complex covered approximately one hectare. Initially, the conversion of raw ore generated sulphur dioxide and arsenic vapour, which were vented directly to the atmosphere. Emission controls were introduced in 1951 and these gases were captured in the form of arsenic trioxide dust. In total, 237 000 metric tonnes of arsenic trioxide dust are presently stored in mined-out workings, consisting of rock chambers and stopes.

After AANDC took control of the property, initial assessments uncovered the large amounts of arsenic in the complex. Other environmental hazards included crumbling asbestos insulation, corroded structures that were at risk of failure, and erosion of the roof and walls. As a result, the complex was an unacceptable risk to on-site workers, the public, and the environment. These issues were the driver for the decontamination and deconstruction of the roaster complex.

AANDC first completed a detailed waste audit in 2012 in order to prepare a design and tender package. The audit had to be completed in winter, with average temperatures of -20°C, which posed difficulties and risks for assessment workers. Moreover, structural issues made it unsafe to access certain areas. The audit found that the arsenic contamination was extensive, including dust particles and permeation in porous materials such as wood and brick, and in the asbestos insulation. Sodium cyanide was also present in the dust of three of the buildings; other types of hazardous waste, such as process chemicals and fuels, were also present throughout the complex.

The decontamination and deconstruction of the roaster complex took two work seasons, between 2013 and 2015. The project team modified conventional abatement-control standards for high-risk asbestos to include monitoring for arsenic and cyanide. This included a detailed visual assessment, followed by an aggressive air-clearance sampling program where air quality within the buildings had to have contaminant levels of 10% or less of the occupational exposure limit. Arsenic was found to require a lot more water for dust control than is typically required for asbestos, for air quality within to remain at a safe level for the respirators that workers were using. Furthermore, strict dust control

of the highly contaminated soil outside of the complex was required; otherwise, the air quality outside could become more contaminated than inside. Extensive housekeeping and hygiene outside of the containment area also aided in minimizing exposure risks outside the complex.

For almost all abatement work, workers wore powered air-purifying respirators and two layers of chemical-resistant suits and gloves. The air monitoring completed as part of the remedial controls confirmed that the workers were wearing adequate respiratory protection. Furthermore, every worker on the project underwent weekly urine testing for arsenic to ensure that levels remained below 35 µg/L of arsenic, above which further work restrictions are required.

Much of the arsenic enclosed within the flue-gas treatment components of the complex was in a hardened state and had to be mined out by abatement workers. Non-porous structural and equipment waste was classified as non-hazardous waste for disposal purposes. Porous structural materials, on the other hand, were permeated with arsenic and were packaged as arsenic waste during deconstruction. The wastes were segregated, containerized, and either disposed off site or stored on site for future disposal.

Drawing on the strength and expertise of individuals from across government departments and of qualified, competent consultants and contractors, the project team was able to eliminate the risks posed by one of the most contaminated structures in Canada, without adverse effects to on-site workers, neighbouring communities, or the environment.

The arsenic hazardous waste is currently contained in Transportation of Dangerous Goods–compliant bags inside steel shipping containers within a purpose-built, fenced-in compound on one of the site's tailings impoundments. The next challenge will be to design a way to safely relocate the 3700 metric tonnes of arsenic waste to a long-term resting place.

APPENDIX A

Program Administration

PROGRAM ADMINISTRATION

Secretariat and Expert Support Funding

In the 2014–2015 fiscal year, $10.9 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 (2014–2015)

Department	FCSAP funding available ($)	FCSAP expenditures ($)	Variance ($)*
Fisheries and Oceans Canada (expert support)	1,884,396	1,773,114	111,282
Environment Canada (secretariat)	*2,817,018*	*1,946,077*	*870,941*
Environment Canada (expert support)	*2,683,367*	*2,701,648*	*-18,281*
Total Environment Canada (secretariat / expert support)	5,500,385	4,647,725	852,660
Health Canada (expert support)	3,475,282	3,319,993	155,289
Public Works and Government Services Canada (expert support)	650,000	645,249	4,751
Treasury Board of Canada Secretariat (secretariat)	527,900	515,244	12,656
Total expenditures	12,037,963	**10,901,325**	**1,136,638**

* Variance = FCSAP funding available – FCSAP expenditures

Key Activities

Federal Contaminated Sites Action Plan Secretariat

In its role of managing the FCSAP program, Environment Canada in its capacity as program Secretariat, with support from the Treasury Board of Canada Secretariat, continued to provide overall program oversight, support, and administration.

In the 2014–2015 fiscal year, the FCSAP Secretariat led the development of a successful proposal for the renewal of FCSAP Phase III (2016–2017 to 2019–2020), which will continue the important work under way since 2005 of reducing risks and financial liability at federal contaminated sites. Development of this proposal involved collaboration with program partners in other federal organizations, to ensure that funding continues to be directed to the federal government's highest-priority sites.

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 Federal Contaminated Sites 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 continued to upgrade the Interdepartmental Data Exchange Application database to improve tracking of project submissions and to better facilitate reviews by expert support departments, and continued improvement of the performance measurement tracking system.

- *Performance monitoring and reporting* – The FCSAP Secretariat prepared draft versions of the 2012–2013 and 2013–2014 annual reports, which present the results of program activities and custodian expenditures against the indicators and targets committed to in the FCSAP performance measurement strategy.

Treasury Board of Canada Secretariat

Throughout 2014–2015, 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 and approval of a program renewal strategy for Phase III of FCSAP.
- *Improvements to data management* – TBS maintained and enhanced the Federal Contaminated Sites Inventory.
- *Performance monitoring and reporting* – TBS supported the activities of the FCSAP Secretariat through participation and oversight on key program initiatives, such as annual reporting, long-term planning, and future funding analysis.
- *Community building* – TBS coordinated planning and delivery of the Real Property Institute of Canada (RPIC) Federal Contaminated Sites National Workshop, held in Ottawa, Ontario, April 12–14, 2014.

Expert Support Departments

In 2014–2015, 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 each of the departments' activities include the following:

- Fisheries and Oceans Canada (DFO), Environment Canada, and Health Canada reviewed site classifications to ensure that sites were eligible for FCSAP remediation or risk management funding. These three expert support departments also 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. DFO also promoted regulatory compliance with relevant federal legislation, particularly the Fisheries Act, at those sites. The Department: finalized the publication of the Long-Term Monitoring guidance executive summary on the FCSAP web portal; developed a draft of the Monitored Natural Recovery guidance document; continued development of a draft Working Harbour Strategy guidance document; finalized 2014 updates to the Aquatic Sites Classification System and User Guide, which were uploaded to the Interdepartmental Data Exchange Application; and updated draft guidance on sediment-remediation technologies. DFO also delivered: a Long-Term Monitoring professional development session at the 2014 RPIC Federal Contaminated Sites National Workshop and classroom/WebEx training sessions at five regional locations across Canada; classroom training on the FCSAP Site Closure Tool and the Tool for Risk Assessment Validation in Ottawa; and classroom/WebEx training on the Aquatic Sites Management Framework and the Aquatic Sites Classification System in two regional locations. 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, and provided technical advice to custodial departments on the management of their contaminated sites so that risks to the environment would be reduced or minimized. 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. The Department published several guidance documents on the FCSAP web portal, such as the Executive Summary of the FCSAP Long-term Monitoring Planning Guidance and the Decision Making Framework. Finally, Environment Canada developed and delivered several training sessions on various topics, including ecological risk assessment, climate change, site closure, and the decision-making framework.

- 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 continued work on the development of documents on the following topics: bioavailability guidance, indoor dust guidance, supplemental guidance on human-health risk assessment on air quality, vapour intrusion guidance, and guidance on Part II of the Toxicity Reference Values. Health Canada also prepared a fact sheet on the risk assessment of contaminated sediments through the direct contact pathway and completed an advisory bulletin on the human-health risk-assessment link to estimating cleanup liability. The Department conducted two webinar training sessions for federal custodians, entitled "Bioavailability of Chemicals in Soil for Human Health Risk" and "Challenges in Investigating Remote Northern Sites to Support Human Health Risk Assessment". Furthermore, Health Canada completed a Conceptual Site Model tool, continued to develop soil-quality guidelines for perfluorooctane sulfonate and perfluorooctanoic acid, and initiated several technical contracts for future guidance and factsheets.

- Public Works and Government Services Canada (PWGSC) continued the development of contaminated-site management tools, such as the Guidance and Orientation for the Selection of Technologies and the Sustainable Development Tool, and revised the *Project Management Handbook*. PWGSC conducted an analysis of federal demand for private-sector support for contaminated-site management. The Department shared this analysis, along with information on innovative and sustainable/green technologies at the 2014 RPIC Federal Contaminated Sites National Workshop and the 2014 Remediation Technologies (RemTech) Symposium. PWGSC also shared information on its procurement approaches for contaminated-site projects through a professional-development session at the National Workshop, as well as through webinar sessions. Lastly, PWGSC provided in-person and webcast training sessions on several topics, such as the FCSAP Sediment Remediation Conceptual Estimation Tool.

APPENDIX B

Federal Approach to Managing Contaminated Sites

FEDERAL APPROACH TO MANAGING CONTAMINATED SITES

A contaminated site is an area in which hazardous 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—such as 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.[6]

- *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 the 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 the 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.

These steps indicate the stage of progress at a site. Step 8 tends to require significantly more time, energy, and funding 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 via a Phase I environmental site assessment (step 2). The purpose of this work is to determine whether contamination may exist on the property.

The next step consists of an initial testing program (step 3) to confirm the presence of contamination at the 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 to determine the extent of contamination. The results from assessments help to identify risks to human health and the environment to determine what remediation or risk management action is necessary.

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

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.

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, the custodian responsible 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: Available assessment funding and expenditures, by custodian (2014-2015)

Custodian	Number of sites with activity	Available FCSAP funding	FCSAP expenditures ($)	Custodian expenditures (cost share) ($)	Total expenditures ($)
AAFC	27	321,119	321,119	80,280	401,399
AANDC-LED	23	530,044	530,044	438,462	968,506
AANDC-NAO	11	972,000	954,955	238,739	1,193,693
CSC	6	353,612	155,410	38,853	194,263
DFO	133	1,572,810	1,560,810	390,203	1,951,013
DND	9	620,942	484,251	121,063	605,314
EC	35	432,000	432,000	149,401	581,401
JCCBI	0	50,000	0	0	0
NCC	39	570,055	570,055	142,514	712,569
PCA	25	1,175,825	1,175,825	297,750	1,473,574
PWGSC	3	208,108	208,108	52,027	260,134
RCMP	6	94,193	52,645	13,121	65,766
TC	5	109,886	109,886	27,472	137,358
Total	**322**	**7,010,594**	**6,555,108**	**1,989,883**	**8,544,991**

Table C.2: Available remediation funding and expenditures, by custodian (2014-2015)

Custodian	Number of sites with activity	Available FCSAP funding	FCSAP expenditures ($)	Custodian expenditures (cost share) ($)	Total expenditures ($)
AAFC	1	318,881	113,829	20,088	133,917
AANDC-LED	64	12,801,648	12,409,958	8,140,385	20,550,343
AANDC-NAO	54	190,165,311	159,930,888	6,939,848	166,870,736
CBSA	0	1,870,000	0	0	0
CSC	5	1,599,005	1,233,546	217,685	1,451,231
DFO	58	3,401,114	3,284,300	579,582	3,863,883
DND	85	40,582,000	28,077,921	2,935,278	31,013,199
EC	7	5,110,601	3,889,171	401,179	4,290,350
JCCBI	2	24,448,000	260,877	46,037	306,915
NCC	6	4,229,937	1,097,625	193,698	1,291,323
PCA	32	4,065,232	1,844,655	397,300	2,241,955
PWGSC	19	20,720,465	4,112,578	725,749	4,838,327
RCMP	9	244,700	108,124	22,943	131,067
TC	26	25,172,557	21,931,490	3,870,263	25,801,753
Total	**368**	**334,729,451**	**238,294,962**	**24,490,035**	**262,784,998**

Table C.3: Program-level summary of available FCSAP funding (2014-2015)

FCSAP funds	Program management ($)	Assessment ($)	Remediation ($)	Total ($)
FCSAP funding approved for 2014-2015	20,567,935	5,830,486	202,160,760	228,559,181
FCSAP funding brought forward from previous fiscal years	148,846	996,649	132,742,411	133,887,906
FCSAP funds received from another custodian (+)	20,000	0	32,172,682	32,192,682
FCSAP funds given to another custodian (-)	-20,000	0	-32,172,682	-32,192,682
FCSAP funds internally transferred to another stream (assessment, remediation, program management) (±)	-9,739	183,459	-173,720	0
Total available FCSAP funding	20,707,042	7,010,594	334,729,451	362,447,087

Table C.4: Program-level summary of FCSAP expenditures and variance (2014-2015)

FCSAP funds	Program management ($)	Assessment ($)	Remediation ($)	Total ($)
FCSAP expenditures	19,342,260	6,555,108	238,294,962	264,192,330
FCSAP funds reprofiled to a future year	41,160	17,045	67,746,110	67,804,315
FCSAP funds carried forward to a future year	82,295	210,202	10,869,285	11,161,782
Internal cash-management of FCSAP funds to a future year	0	0	13,729,054	13,729,054
Lapsed FCSAP funds	1,241,327	228,239	4,090,040	5,559,606
Custodian cost-share expenditures	0	1,989,883	24,490,035	26,479,918

Table C.5: List of remediation sites funded by FCSAP (2014-2015)

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
AAFC	The Atlantic Food and Horticulture Research Centre	02731004	NS	113,829	20,088
AANDC-LED	61 - The Crees of the Waskaganish First Nation - 06129 - WASKAGANISH - 2000022296	05357005	QC	124,925	185,075
AANDC-LED	70 - Mohawks of Kahnawake - 06097 - KAHNAWAKE 14 - 2000007493	05198006	QC	10,571	1,865
AANDC-LED	70 - Mohawks of Kahnawake - 06097 - KAHNAWAKE 14 - 2000007593	00006600	QC	21,142	3,731
AANDC-LED	79 - Atikamekw d'Opitciwan - 06105 - OBEDJIWAN 28 - 0301032102	05205004	QC	55,701	147
AANDC-LED	79 - Atikamekw d'Opitciwan - 06105 - OBEDJIWAN 28 - 0302543305	00005225	QC	5,707	1,007
AANDC-LED	143 - Attawapiskat - 06259 - ATTAWAPISKAT 91 - 0402307505	00000595	ON	38,947	28,007

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
AANDC-LED	143 - Attawapiskat - 06259 - ATTAWAPISKAT 91 - 0402307605	00000596	ON	33,888	24,370
AANDC-LED	143 - Attawapiskat - 06259 - ATTAWAPISKAT 91 - 3000051796	00006891	ON	432,962	587,356
AANDC-LED	183 - Eabametoong First Nation - 06296 - FORT HOPE 64 - 3000025895	00000457	ON	16,541	46,372
AANDC-LED	186 - Marten Falls - 06299 - MARTEN FALLS 65 - 3000027095	05166001	ON	17,880	3,156
AANDC-LED	186 - Marten Falls - 06299 - MARTEN FALLS 65 - 3000027195	05166002	ON	9,240	1,631
AANDC-LED	186 - Marten Falls - 06299 - MARTEN FALLS 65 - 3000027395	05166003	ON	841	148
AANDC-LED	186 - Martin Falls - 06299 - MARTEN FALLS 65 - 3000027495	00000463	ON	5,409	955
AANDC-LED	201 - Serpent River - 06185 - SERPENT RIVER 7 - 3000047696	05185001	ON	300,000	84,346
AANDC-LED	211 - Sandy Lake - 06323 - SANDY LAKE 88 - 0402112305	00000486	ON	4,755	13,137
AANDC-LED	211 - Sandy Lake - 06323 - SANDY LAKE 88 - 3000036995	05182004	ON	26,945	74,443
AANDC-LED	213 - Muskrat Dam Lake - 06327 - MUSKRAT DAM LAKE - 3000008694	05170001	ON	18,896	12,687
AANDC-LED	213 - Muskrat Dam Lake - 06327 - MUSKRAT DAM LAKE - 3000008794	05170002	ON	39,889	26,781
AANDC-LED	213 - Muskrat Dam Lake - 06327 - MUSKRAT DAM LAKE - 3000009094	05170004	ON	23,758	15,952
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000035195	05194001	ON	17,497	3,879
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000035695	05194003	ON	41,374	9,173
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000035895	05194014	ON	3,240	718
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000035995	05194004	ON	34,747	7,703
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000040896	05194007	ON	10,919	2,421
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000040996	05194008	ON	2,424	537

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000104197	05194010	ON	1,954	433
AANDC-LED	217 - Wunnumin - 06333 - WUNNUMIN 1 - 3000104297	05194011	ON	11,499	2,550
AANDC-LED	240 - Webequie - 06337 - WEBIQUI INDIAN SETTLEMENT - 0404167609	00007586	ON	11,547	2,549
AANDC-LED	240 - Webequie - 06337 - WEBIQUI INDIAN SETTLEMENT - 0404167709	00007587	ON	85,236	23,815
AANDC-LED	240 - Webequie - 06337 - WEBIQUI INDIAN SETTLEMENT - ON04827711	00008210	ON	2,730	603
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	2,960,339	803,938
AANDC-LED	296 - God's Lake First Nation - 06444 - GOD'S LAKE 23 - 0501736204	00006892	MB	45,768	8,077
AANDC-LED	296 - God's Lake First Nation - 06444 - GOD'S LAKE 23 - 4000013095	05301001	MB	85,812	15,143
AANDC-LED	297 - Garden Hill First Nation - 06448 - GARDEN HILL FIRST NATION - 0503396908	00006936	MB	1,742,587	307,515
AANDC-LED	298 - St. Theresa Point - 09147 - ST THERESA POINT - 4000038700	00006601	MB	21,250	3,750
AANDC-LED	299 - Wasagamack First Nation - 09148 - WASAGAMACK - 0502601305	00005805	MB	425,000	75,000
AANDC-LED	300 - Red Sucker Lake - 06467 - RED SUCKER LAKE 1976 - 4000011594	05324001	MB	347,297	70,383
AANDC-LED	303 - Sayisi Dene First Nation - 06464 - CHURCHILL 1 - 0502573605	00005528	MB	74,629	13,170
AANDC-LED	303 - Sayisi Dene First Nation - 06464 - CHURCHILL 1 - 0502575005	00005542	MB	74,629	13,170
AANDC-LED	307 - Shamattawa First Nation - 06460 - SHAMATTAWA 1 - 0503402808	00006939	MB	121,168	21,383
AANDC-LED	311 - Mathias Colomb - 06456 - PUKATAWAGAN 198 - 4000002393	00006814	MB	144,245	25,455

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
AANDC-LED	317 - Northlands - 06468 - LAC BROCHET 197A - 4000018896	05310001	MB	169,926	30,074
AANDC-LED	344 - Onion Lake Cree Nation - 06482 - MAKAOO 120 - 0601634104	00006334	SK	42,500	7,500
AANDC-LED	433 - Chiniki - 06642 - STONEY 142-143-144 - 6000033600	05131001	AB	554,754	97,898
AANDC-LED	462 - Saddle Lake Cree Nation - 06703 - WHITE FISH LAKE 128 - 0703415008	00006947	AB	66,559	11,745
AANDC-LED	502 - Liard First Nation - 08433 - LIARD RIVER 3 - 0801946205	05210004	BC	259,448	774,973
AANDC-LED	540 - Kitasoo - 07886 - KITASOO 1 - BC04825611	00008201	BC	1,760,683	524,000
AANDC-LED	540 - Kitasoo - 07886 - KITASOO 1 - BC04826011	00008209	BC	117,500	349,500
AANDC-LED	564 - Kwantlen First Nation - 08033 - LANGLEY 5 - BC04790410	00008206	BC	400,000	3,500,000
AANDC-LED	569 - Semiahmoo - 08047 - SEMIAHMOO - 0903374908	00006932	BC	762,770	128,500
AANDC-LED	644 - Esquimalt - 06808 - ESQUIMALT - 7000025894	05028006	BC	501,318	88,468
AANDC-LED	648 - Snuneymuxw First Nation - 06817 - NANAIMO RIVER 3 - 0903801608	00007210	BC	266,500	55,000
AANDC-LED	656 - Songhees First Nation - 06839 - NEW SONGHEES 1A - 0901458204	00006573	BC	11,612	2,049
AANDC-NAO	BAF 5 - Resolution Island	C1017001	NU	344,855	60,857
AANDC-NAO	BAR C - Tununuk	00000379	NT	5,200	918
AANDC-NAO	Bathurst Island - Bent Horn (Cameron Island)	00024167	NU	85,092	15,016
AANDC-NAO	Bathurst Island - Île Vanier	00000282	NU	68,310	12,055
AANDC-NAO	Beaulieu Mine (John Lake; Brandy; Irene; Norma; Tungsten and Gold Mines Limited)	00023544	NT	18,759	3,310
AANDC-NAO	Beaverlodge Lake	00000842	NT	4,672	824
AANDC-NAO	Blanchet Island Mine (HRL Claims)	00000402	NT	316,124	55,787
AANDC-NAO	Bullmoose Lake Mine (Formerly Mann Lake)	00000068	NT	59,194	10,446

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
AANDC-NAO	Burnt Island (Ardogo, Good Hope, Goo, Giant Bay, Gordon Lake)	00023547	NT	21,287	3,757
AANDC-NAO	CAM A - Sturt Point	C1041001	NU	3,095,158	546,204
AANDC-NAO	CAM E - Keith Bay	C1003001	NU	159,333	28,118
AANDC-NAO	Camlaren Mine (Hump Vein)	00000162	NT	127,723	22,539
AANDC-NAO	Canol Trail - Mile 50 - Road Maintenance Camp - Little Keele	00024267	NT	68,148	12,026
AANDC-NAO	Canol Trail - Mile 76 - Pump Station 3	00025577	NT	68,148	12,026
AANDC-NAO	Canol Trail - Mile 90 - Road Maintenance Camp - Andy Creek	00024272	NT	68,148	12,026
AANDC-NAO	Canol Trail - Mile 100 - Road Maintenance Camp - Bolstead Creek	00024273	NT	68,148	12,026
AANDC-NAO	Canol Trail - Mile 108 - Pump Station #4	00024274	NT	68,148	12,026
AANDC-NAO	Canol Trail - Mile 131.3 - Pipeline Oil Spill Site	00024287	NT	68,148	12,026
AANDC-NAO	Canol Trail - Mile 160 - Drum Cache	00024278	NT	68,148	12,026
AANDC-NAO	Canol Trail - Mile 202 - Vehicle Boneyard	00024281	NT	68,148	12,026
AANDC-NAO	Canol Trail - Mile 222 - Camp & Vehicle Cache	00024286	NT	68,148	12,026
AANDC-NAO	Cape Dorset 2 (Nottingham Island)	00000311	NU	1,603,716	283,009
AANDC-NAO	Chipp Lake Mine (Cliff Lake, Eileen)	00023777	NT	12,604	2,225
AANDC-NAO	Clinton Creek (Bosworth Creek)	C1052001	YT	372,637	65,759
AANDC-NAO	Colomac Mine (Baton Lake, Indin Lake, Goldcrest, Grizzly Bear)	C1047001	NT	1,012,886	0
AANDC-NAO	Contact Lake Mine (International Uranium, M Group, Sam, Kayo)	C1051001	NT	4,908	866
AANDC-NAO	Contwoyto Lake/Contwoyto Island	00023576	NU	3,483,800	614,788
AANDC-NAO	El Bonanza Mine (Bonanza East, Bonanza Vein, Spud Vein)	00000076	NT	3,381	597
AANDC-NAO	Ennadai Lake	00023553	NU	8,416,412	1,485,249
AANDC-NAO	Faro Mine	C2503001	YT	49,985,772	0

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
AANDC-NAO	FOX D - Kivitoo	C1021001	NU	82,669	14,589
AANDC-NAO	FOX E - Durban Island	C1022001	NU	2,430,788	428,963
AANDC-NAO	Giant Mine (Giant Yellowknife Mines; Royal Oak Mines; A, B & C Shafts)	C1048001	NT	64,477,081	0
AANDC-NAO	Goodrock Mine (Gordon Lake)	00000351	NT	21,287	3,757
AANDC-NAO	Hope Lake	00023429	NU	806,003	142,236
AANDC-NAO	Indore Gold Mine/Hottah Lake (Pitch 8)	C1026001	NT	7,683	1,356
AANDC-NAO	Joon Mine (Campbell Lake, June Mine, Strike Lake)	00000405	NT	18,394	3,246
AANDC-NAO	Knight Bay (Kidney Pond)	00024120	NT	85,149	15,026
AANDC-NAO	Mount Nansen Mine	C2505001	YT	3,268,426	576,781
AANDC-NAO	Old Frobisher Wells - Hay River	00023468	NT	4,640,892	818,981
AANDC-NAO	Outpost Island	C1038001	NT	311,854	55,033
AANDC-NAO	Padloping Island	C1016001	NU	1,540,856	271,916
AANDC-NAO	Rayrock Mine (Rob Group; M.M. Group; Island 2; Beta)	C1031001	NT	341,455	60,257
AANDC-NAO	Ruth Gold Mine	C1033001	NT	50,784	8,962
AANDC-NAO	Sawmill Bay/Great Bear Lake	00000403	NT	14,361	2,534
AANDC-NAO	Spectrum Lake (AA/BB, Benventum)	00023964	NT	56,572	9,983
AANDC-NAO	Storm Mine (Consolation Lake 2)	00023548	NT	9,845	1,738
AANDC-NAO	Terra #1 (North Mine, Silver Bear Properties)	C1010001	NT	392,459	69,257
AANDC-NAO	Terra #2 (Northrim Mine, Silver Bear Properties, Silver Bay, White Eagle)	C1011001	NT	37,918	6,691
AANDC-NAO	Terra #3 (Norex Mine, Silver Bear Properties, Ceaser Silver)	C1012001	NT	32,618	5,756
AANDC-NAO	Terra #4 (Smallwood Mine, Silver Bear Properties)	C1013001	NT	13,303	2,348
AANDC-NAO	Tundra-Taurcanis Mine (Bulldog Yellowknife Gold Mines, Tamcanis Mines Limited, Tundra Gold Mines)	C1035001	NT	6,260,836	1,104,853
AANDC-NAO	United Keno Hill Mine	C2509001	YT	6,129,352	0

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
AANDC-NAO	West Bay Mine (Black Ridge) (DAF) (MQ)	C1037001	NT	85,149	15,026
CSC	330-C01 Leclerc Institution - Former Tank Nest Beside Central Heating Plant	00013010	QC	11,050	1,950
CSC	416-C03 Kingston Penitentiary - Western exterior areas, Portsmouth Harbour side	00026073	ON	172,960	30,522
CSC	441-L02 Collins Bay - Southern Landfill (near Front Road)	00024662	ON	654,435	115,489
CSC	441-L03 Frontenac Institution - Landfill #3 at Quarry Road and Little Cataraqui Creek Tributary	00012990	ON	368,120	64,962
CSC	460-C01 Warkworth Institution - Underground Storage Tanks	00023469	ON	26,981	4,761
DFO	Addenbroke Island	67677001	BC	6,713	1,185
DFO	Bagot - escarpment, minor shore light	08032001	QC	10,275	1,813
DFO	Ballenas Island - Metal and Hydrocarbon on Ballenas Island Property	17675001	BC	35,020	6,180
DFO	Bicquette Island - light station area	05469001	QC	103,782	29,543
DFO	Boat Bluff	67678001	BC	6,713	1,185
DFO	Bonilla Island - Sector Light	19482001	BC	6,713	1,185
DFO	Cap-de-la-Table (lighthouse station)	08024002	QC	128,846	22,738
DFO	Cap-de-Rabast (light and adjacent concrete bases)	08029002	QC	253,071	44,660
DFO	Cape Beale	17809001	BC	6,713	1,185
DFO	Cape Mudge	18225001	BC	6,713	1,185
DFO	Cape Pine	00023100	NL	87,125	15,375
DFO	Cape Pine	34599001	NL	87,125	15,375
DFO	Cape Scott - Main Station	19007001	BC	6,713	1,185
DFO	Carmanah Point	17533001	BC	6,713	1,185
DFO	Chatham Point	18090001	BC	6,713	1,185
DFO	Chrome Island - Range Light	18001001	BC	6,713	1,185

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
DFO	Cove Island - Main Dump	00024545	ON	22,123	3,852
DFO	Cove Island - Soil around lighthouse and associated structures	00000863	ON	209,736	37,473
DFO	Dawsons Landing Field Station - Generator ASTs	19158001	BC	334,680	50,950
DFO	Discovery Island - Metals and Hydrocarbons in Dump Areas	17425001	BC	55,660	9,822
DFO	Dryad Point	67679001	BC	6,713	1,185
DFO	Egg Island	67680001	BC	6,713	1,185
DFO	Entrance Island	17611001	BC	6,713	1,185
DFO	Estevan Point	17813001	BC	6,713	1,185
DFO	Fortune (Fish Plant Wharf - DFRP# 00494 - Uplands)	00490002	NL	42,500	19,500
DFO	Gereaux Island (Britt IRB) - Soils around the lighthouse	00012239	ON	108,037	19,065
DFO	Grande Île - tower area	05547001	QC	4,250	750
DFO	Grandes-Bergeronnes - former front range light	08187001	QC	1,088	192
DFO	Grandes-Bergeronnes - former rear range light	82081001	QC	192	1,088
DFO	Green Island	67681001	BC	6,713	1,185
DFO	Griffith Island - Vicinity of lighthouse	58231001	ON	124,313	16,502
DFO	Île du Corossol - minor shore light	00000877	QC	62,805	11,083
DFO	Île Haute - Metals/Benzene Impacted Soil - Former Buildings/Dump Area	00012315	NS	85,286	14,962
DFO	Île Verte - light station	05514001	QC	7,593	1,340
DFO	Ivory Island	67682001	BC	6,713	1,185
DFO	Lamèque (Petroleum/ PAH Impacts in Soil/GW - Historic Fuel Spills)	04939001	NB	87,295	15,398
DFO	Langara Island	19401001	BC	6,713	1,185
DFO	Lennard Island	17812001	BC	6,713	1,185
DFO	Long Pèlerin - light station structure and range light	00021639	QC	355	63
DFO	McColgan Point	00000852	NB	21,249	3,750

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
DFO	McInnes Island	67683001	BC	6,713	1,185
DFO	Merry Island	18460001	BC	6,713	1,185
DFO	Nootka Island	18086001	BC	6,713	1,185
DFO	Pachena Point	17810001	BC	6,713	1,185
DFO	Pine Island	19125001	BC	6,713	1,185
DFO	Pointe Carleton - station de phare	08025001	QC	99,293	17,522
DFO	Pointe de l'Ouest - Minor shore light with adjacents buildings	08033004	QC	9,748	1,720
DFO	Pointe du Sud-Ouest - former light station and tower	08031003	QC	93,836	16,559
DFO	Pointe Noire - front range light	08209001	QC	16,326	2,881
DFO	Port Burwell - Portion of Big Otter Creek and inner harbour of the Port Burwell SCH	00024432	ON	40,848	7,208
DFO	Pulteney Point	19084001	BC	6,713	1,185
DFO	Quatsino, Kains Island - Assistant keeper's house & engine room	19006001	BC	6,713	1,185
DFO	Quinsam River Hatchery - Fuel spill near the Clarifier pump house	00002335	BC	71,650	12,644
DFO	Scarlett Point	19052001	BC	6,713	1,185
DFO	Sea Island Hovercraft Base - Former aviation fuel tanks and associated piping	84580001	BC	14,060	2,481
DFO	Steveston (Paramount) - Maintenance area (Building 33)	16760001	BC	805,540	184,189
DFO	Stokes Bay Range Front (Tower Area)	10961002	ON	86,044	15,184
DFO	Trial Islands	17330001	BC	6,713	1,185
DND	5 Wing Goose Bay, Canadian Side & Northside	01822018	NL	2,190,330	21,672
DND	5 Wing Goose Bay, Dome Mountain, RCAF and Camp Sites	N7075001	NL	597,968	44,789
DND	5 Wing Goose Bay, Hydrant Area Fuel Plumes (HYD9010)	01822043	NL	940,410	0

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
DND	5 Wing Goose Bay, Lower Tank Farm (LTF 2000 Series)	01822094	NL	1,227,514	31,786
DND	5 Wing Goose Bay, Main Gate & Hamilton River Road Plume (UPL 16000 Series)	N7077001	NL	1,879,033	0
DND	5 Wing Goose Bay, South Escarpment Landfills (SES 1000 Series)	01822087	NL	499,570	0
DND	5 Wing Goose Bay - South Escarpment Stillwaters (SES 1100 Series)	00008429	NL	208,218	36,120
DND	5 Wing Goose Bay, Survival Tank Farm (STF 3000 Series)	01822086	NL	1,899,206	10,114
DND	5 Wing Goose Bay, Upper Tank Farm - Fuel Recovery Site (UTF 4000 Series)	01822085	NL	658,950	115,641
DND	Aerodrome - West of runway 18-36	07930004	QC	7,732	1,365
DND	Alert B-145 Cat House	20247019	NU	11,416	2,015
DND	Alert Baker's Dozen	20247035	NU	12,376	2,184
DND	Amherst Rifle Range (5403) - Range firing points, butt stops	03186001	NS	39,745	7,014
DND	Atmosphere simulation (former dump), DRDC-South	29757003	QC	9,747	1,720
DND	Building 151 area	09540007	ON	334,144	58,967
DND	Cadet Camp Landfill & Firing Range	00008347	ON	1,811,105	319,607
DND	CFAD Bedford (802) Dredge Material Disposal - Former Landfill	02859002	NS	18,853	3,327
DND	CFB Petawawa RTA - Area 8 (Demolition Range)	00008335	ON	197,474	34,848
DND	CFB Petawawa RTA - Old Grenade Range	00008420	ON	54,718	9,656
DND	CFB Shearwater (211) - Landfill 1	02863011	NS	69,151	12,203
DND	CFB Shearwater (213) - Landfill 3	02863013	NS	24,570	4,336
DND	CFB Shearwater (214) - Landfill 4	02863014	NS	16,380	2,891
DND	CFB Shearwater (216) - Fill Area West of Alpha Taxiway	02863016	NS	49,461	8,729
DND	CFS St. John's (4710) - Pussey's Hill Rifle Range	00273001	NL	57,866	10,212
DND	CFS St. John’s (4910) - Southside Road Tank Farm	32044001	NL	142,350	25,121

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
DND	CFS St. John's (5210) - Shea Heights Tank Farm	32044002	NL	146,904	25,924
DND	Coal Storage #2	11022075	ON	225,883	39,862
DND	DCD School (907) - Fire Fighting Training Area	03044007	NS	60,539	13,205
DND	DEW-Line - CAM-1 Jenny Lind Island	C7017001	NU	787,753	168,071
DND	DEW-Line - CAM-2 Gladman Point	C7018001	NU	27,327	4,822
DND	DEW-Line - CAM-3 Sheppard Bay	C7027001	NU	113,321	19,998
DND	DEW-Line - CAM-4 Pelly Bay	C7019001	NU	38,868	6,859
DND	DEW-Line - CAM-5 Mackar Inlet	C7020001	NU	73,579	12,985
DND	DEW-Line - DYE-M Cape Dyer	C7026001	NU	497,583	29,056
DND	DEW-Line - FOX-2 Longstaff Bluff	C7022001	NU	101,652	17,939
DND	DEW-Line - FOX-3 Dewar Lakes	C7023001	NU	97,241	17,160
DND	DEW-Line - FOX-4 Cape Hooper	C7024001	NU	979,883	201,976
DND	DEW-Line - FOX-5 Broughton Island	C7025001	NU	151,536	26,742
DND	DEW-Line - FOX-M Hall Beach	C7021001	NU	147,547	26,038
DND	DEW-Line - PIN-2 Cape Young	C7013001	NU	638,690	141,765
DND	DEW-Line - PIN-3 Lady Franklin Point	C7016001	NU	32,069	113,654
DND	DEW-Line - PIN-4 Byron Bay	C7015001	NU	837,788	176,900
DND	DRDC (1408) - Waste solvent dumping (East of building 2)	03013004	NS	11,524	2,034
DND	Dry material (former dump for), DRDC-South	29757002	QC	9,747	1,720
DND	DY-4 Dockyard FMF Consolidation	17403003	BC	4,314,175	761,325
DND	ESQ 1 - Esquimalt Harbour	17403011	BC	846,258	0
DND	Fire Fighting Training Area/ Hazardous Materials Storage	09540012	ON	828,662	169,745
DND	Former CFS Moisie - Site Admin	N7096001	QC	81,894	14,452
DND	Former CFS Sydney	N7095001	NS	148,837	90,453
DND	Former dump Château Road	05906047	QC	29,750	5,250

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
DND	Former skeet range	00008337	QC	115,597	20,400
DND	Hangar 5 & 6	00024810	ON	199,099	35,135
DND	HMCS Champlain - Chicoutimi Naval Reserve	69920001	QC	54,896	9,688
DND	Land adjacent to the former well P-2	05906061	QC	70,510	12,443
DND	Le RHIN former demolition area	05906041	QC	196,678	34,708
DND	MA-1a Masset Skeet Range	00008529	BC	85,000	15,000
DND	“MDR” (former dump for), DRDC-Trials	29757006	QC	19,116	3,373
DND	Middleton Park Landfill Site	09540009	ON	83,384	14,715
DND	Military Facility Site	03146001	NS	20,746	3,661
DND	Mountain View - Inner Landfill Site	34476004	ON	22,876	4,037
DND	New ATESS Refinishing Shop	00008541	ON	482,303	85,112
DND	Niagara-on-the-Lake Rifle Range	10626002	ON	129,619	40,802
DND	Oxidator Building (Back of Building)	20247006	NU	17,288	3,051
DND	Plateau (demolition site), DRDC-Trials	29757009	QC	36,204	6,389
DND	POL Compound	04089001	NB	39,856	7,033
DND	POL Compound - area of removed tanks	09540020	ON	97,275	17,166
DND	POL tank farm	07930009	QC	77,528	13,681
DND	Refuelling Facility 2	10992006	ON	59,771	10,548
DND	Royal Roads Landfill Area	15684029	AB	297,742	52,543
DND	Saglek Bay Sediments	N7040001	NL	29,613	5,226
DND	Sector for building 307, DRDC-Trials	29757005	QC	36,099	6,370
DND	Shearwater (222B) Former POL (D) UST (S) Building 212 HY	02863045	NS	14,911	2,631
DND	Shearwater (230) - Buildings 31,31A,31B,32 (Mobile Support Maintenance)	02863030	NS	58,808	10,378
DND	Shirley Road Dump	04089010	NB	39,956	7,051
DND	Small calibre (Former dump), DRDC-South	29757001	QC	9,746	1,720

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
DND	South reboubt RMC St-Jean	00008463	QC	50,613	8,932
DND	Stream draining former DDT site in Farnham	00008562	QC	65,833	11,618
DND	Sudbury Armoury	00008448	ON	161,433	28,488
DND	TCE Contamination - Highbury Complex	10868001	ON	252,581	44,573
DND	TCE Contamination - Valcartier	29757007	QC	774,817	366,216
DND	Training areas, former CARPIQUET firing range	05906044	QC	146,150	25,791
DND	Wellington Anti-Tank Range	00008409	NB	31,899	5,629
DND	Wolseley Barracks	10869001	ON	78,456	13,845
DND	Wood Hobby Club Site	00001000	ON	16,734	2,953
DND	YA-1 Former Hazardous Waste Containment Facility	17404004	BC	17,850	3,150
EC	Eureka High Arctic Weather Station	00002747	NU	1,929	340
EC	Fort Reliance	00002376	NT	100,881	17,803
EC	Long Pèlerin - former boathouse	00022204	QC	126,946	22,402
EC	Mould Bay (HAWS)	70944001	NT	41,786	7,374
EC	Sainte-Marie Island	00001288	QC	3,221	698
EC	Wilmer Marsh (dumping area)	16096079	BC	1,760,837	352,562
JCCBI	Parcel 1	00000903	QC	206,075	36,367
JCCBI	Parcel 3	00002327	QC	54,802	9,671
NCC	Bayview	00022831	ON	108,511	19,149
NCC	Central LeBreton	00023983	ON	35,387	6,245
NCC	Hurdman North	00022822	ON	15,585	2,750
NCC	LeBreton East	00023316	ON	760,759	134,252
NCC	Ridge Road Former Landfill	00000001	ON	89,048	15,714
NCC	Stanley Park West	00022858	ON	88,335	15,588
PCA	A1 Waste Transfer Station	15412001	AB	12,789	5,922
PCA	Abandoned Light Station	00023460	BC	11,996	1,600

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
PCA	Active Pass	00023457	BC	12,062	3,630
PCA	B1 Trade Waste Pit	15412015	AB	10,111	2,901
PCA	Bear Creek Compound	20009001	NU	48,900	8,600
PCA	C2 JNP Tangle Creek Compound	15412017	AB	8,143	2,323
PCA	Canal Sediments	06959001	QC	3,150	2,489
PCA	Creek at Bennett Lake	56505001	BC	128,400	22,700
PCA	Former Shed and Boat House	00023459	BC	11,975	2,481
PCA	Fort Conger Historic Site	00008328	NU	20,145	4,710
PCA	Forty Mile Creek Landfill	15404044	AB	20,864	10,793
PCA	Garden River Old Dump	15841002	AB	223,099	22,724
PCA	Grosse-Île G-I-02	56522002	QC	128,780	91,870
PCA	Harriet Harbour	00024667	BC	204,535	55,668
PCA	Hay Camp	15841001	AB	233,977	5,578
PCA	Kingston Inner Harbour Marsh	00023391	ON	16,001	19,508
PCA	Lobstick Maintenance Yard	14567002	SK	123,842	28,852
PCA	Maintenance Compound Garage, Former UST Site	12897002	MB	13,503	2,383
PCA	Major Shore Light	00023458	BC	11,985	2,460
PCA	Mount Agassiz	00023456	MB	292,465	51,611
PCA	Rogers Pass Maintenance Compound	18752001	BC	174,538	22,274
PCA	Russell Island Homestead	00024299	BC	1,153	5,480
PCA	Saturna Island Dump	00023463	BC	12,065	1,450
PCA	Saturna Island Fuel Shed	00023461	BC	11,955	1,450
PCA	Saturna Island Light Tower	00023462	BC	11,961	1,450
PCA	Site 03.1	06959019	QC	72,778	9,134
PCA	Site 13.2	06959081	QC	1,250	2,407
PCA	Ward Hunt Island (site 15)	56482015	BC	3,770	1,276
PCA	Waste Disposal Midden (East)	56488005	AB	9,231	1,734

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
PCA	Waste Disposal Midden (West)	56488004	AB	9,231	1,734
PWGSC	Alaska Highway - Fireside Maintenance Camp	09401080	BC	195,327	34,470
PWGSC	Alaska Highway - Former Military Establishment (Fort. Nelson Recreation Centre) P-08I	09401270	BC	192,817	34,026
PWGSC	Alaska Highway - Fort Nelson Gravel Pit	09401030	BC	30,678	5,414
PWGSC	Alaska Highway - Iron Creek Maintenance Camp	09401090	YT	119,692	21,122
PWGSC	Alaska Highway - Liard Maintenance Camp	09401070	BC	323,397	57,070
PWGSC	Alaska Highway - Muncho Lake Maintenance Camp	09401060	BC	67,935	11,989
PWGSC	Alaska Highway - Sikanni Maintenance Camp	09401020	BC	56,824	10,028
PWGSC	Alaska Highway - Steamboat Maintenance Camp	09401040	BC	35,455	6,257
PWGSC	Alaska Highway - Toad River Maintenance Camp	09401050	BC	74,087	13,074
PWGSC	Alaska Highway - Wonowon Maintenance Camp	09401010	BC	169,900	29,982
PWGSC	Esquimalt Graving Dock	17410001	BC	2,870	506
PWGSC	Esquimalt Graving Dock	17410002	BC	36,145	6,378
PWGSC	Esquimalt Graving Dock	17410004	BC	15,785	2,786
PWGSC	Esquimalt Graving Dock	17410005	BC	10,045	1,773
PWGSC	Esquimalt Graving Dock	17410006	BC	37,557	6,628
PWGSC	Esquimalt Graving Dock	17410007	BC	2,652,063	468,011
PWGSC	Esquimalt Graving Dock	17410008	BC	20,090	3,545
PWGSC	New Westminster Railway Bridge	17026001	BC	50,761	8,958
PWGSC	Unused Lot	19881001	BC	21,149	3,732
RCMP	Burgeo RCMP	00001152	NL	7,960	1,405
RCMP	Cape Dorset RCMP Detachment Site	00001070	NU	1,020	3,980
RCMP	Carcross RCMP	23322017	YT	48,170	8,501
RCMP	Island Lake RCMP Detachment Site	00001056	MB	15,837	2,857

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
RCMP	Nain RCMP	00001138	NL	8,500	1,500
RCMP	Rankin Inlet RCMP Detachment Site	00001071	NU	4,250	750
RCMP	Rocky Harbour RCMP	00001149	NL	7,008	1,237
RCMP	Stephenville RCMP	00022654	NL	7,823	1,381
RCMP	Whitbourne RCMP	00001145	NL	7,556	1,333
TC	Cambridge Bay Airport, Cambridge Bay Apron	00024301	NU	55,614	9,814
TC	Cambridge Bay Airport, Fire Training Area	N0010002	NU	1,823,604	321,812
TC	Edmonton Airport, Airside Operations and Maintenance Centre	15473005	AB	77,162	13,617
TC	Esquimalt Harbour - Fill Sites	00025820	BC	73,100	12,900
TC	Fort Nelson Airport, EBS Contaminated Sites	N0025001	BC	412,014	72,708
TC	Gander Airport, Former Gas Station Site	00967016	NL	67,024	11,828
TC	Gander Airport, Fuel Contaminated Site	00967043	NL	6,544	1,155
TC	Halifax Airport, Fire Training Area (FTA)	03057001	NS	24,488	4,321
TC	Inuvik Airport, Fire Training Area	N0014002	NT	78,817	13,909
TC	Kingston Inner Harbour	22905009	ON	19,017	3,356
TC	London Airport, Former Fire Fighting Training Areas	10855002	ON	67,094	11,840
TC	Norman Wells Airport, Norman Wells Taxiway C	00024131	NT	38,822	6,851
TC	Oshawa Harbour - Area D (Rail Spur)	67590004	ON	23,308	4,113
TC	Oshawa Harbour, Area E (Marina)	67590005	ON	24,291	4,287
TC	Otter Creek Former Landfill / Asphalt Plant	01831001	NL	42,500	7,500
TC	Parcels in the village of Kuujjuaq	08389003	QC	55,255	9,751
TC	Resolute Bay Airport, Old Landfill/Main Drum Cache	N0017003	NU	407,586	71,927
TC	Sediments - Gaspé wharf	72064003	QC	649,832	114,676
TC	St. John’s Airport, Disposal Site 2 and Fire Training Area	00339002	NL	56,169	9,912

Custodian	Site name	Federal site identifier	Province/ territory	FCSAP remediation expenditures ($)	Custodian expenditures ($)
TC	St. John's Airport, Marine Fire Training Area	00339015	NL	11,693	2,063
TC	Thunder Bay Airport, Former firefighting training area	11943001	ON	143,484	25,321
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	16,084,307	2,838,407
TC	Watson Lake Airport, Former Tenant-Owned Maintenance Garage - APEC 7	N0281009	YT	301,750	53,250
TC	Whitehorse Airport, Air Terminal Building APEC 20A Parking Lot	20146001	YT	28,645	5,055
TC	Whitehorse Airport, Former Tenant Air Fuelling Facility - APEC 6	20146003	YT	338,405	59,718
TC	Whitehorse Airport, Regional Fire Depot - APEC 8	20146004	YT	1,020,966	180,171

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.[7]

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 (2014–2015)

	March 31, 2014 ($)	March 31, 2015 ($)	Difference ($)
Total liability for remediation of contaminated sites[a]	4,795,679,415	5,793,117,629	997,438,214
Less:			
Sydney Tar Ponds	853,738	0	-853,738
Port Hope Area Initiative	984,191,962	985,454,963	1,263,001
Canadian Broadcasting Corporation	588,000	377,000	-211,000
Enterprise Cape Breton Corporation[b]	158,548,000	154,686,277	-3,861,723
Marine Atlantic Inc.	431,000	431,000	0
VIA Rail Canada Inc.	500,000	200,000	-300,000
Miscellaneous adjustment[c]		580,000,000	580,000,000
Expected recoveries[d]		17,321,495	17,321,495
Adjusted total liability of contaminated sites	**3,650,566,715**	**4,089,289,884**	**438,723,169**

[a] Total liability for remediation of contaminated sites, as reported in the Public Accounts of Canada, 2014–2015.

[b] Enterprise Cape Breton Corporation was dissolved in June 2014 and the responsibility for the contaminated sites for Cape Breton Operations was transferred to Public Works and Government Services Canada.

[c] "Miscellaneous adjustment" refers to a central adjustment made by Treasury Board of Canada Secretariat to account for a change in the Consumer Price Index to a forecast rate of 2%.

[d] An expected recovery is reported when it is likely that a recovery will be received by the Crown and a reasonable estimate of the amount of the recovery can be made.

[7] Public Accounts of Canada, 2014–2015, Volume I (PWGSC, 2015), www.tpsgc-pwgsc.gc.ca/recgen/cpc-pac/index-eng.html.

Table D.2: Adjusted total environmental liability for contaminated sites, by participating custodian (2014–2015)

Custodian	March 31, 2014 ($)	March 31, 2015 ($)	Difference ($)
Aboriginal Affairs and Northern Development Canada	2,602,985,802	3,017,667,968	414,682,166
Agriculture and Agri-Food Canada	1,513,644	2,422,353	908,709
Canada Border Services Agency	2,320,091	2,479,624	159,533
Correctional Service of Canada	3,963,650	2,017,213	-1,946,437
Environment Canada	110,916,041	122,609,100	11,693,059
Fisheries and Oceans Canada	96,498,180	104,558,273	8,060,093
Health Canada	167,482	167,497	15
Jacques Cartier and Champlain Bridges Incorporated	35,861,000	31,100,000	-4,761,000
National Defence	462,424,603	425,387,988	-37,036,615
National Capital Commission	24,224,000	43,850,000	19,626,000
National Research Council of Canada	168,400	170,421	2,021
Natural Resources Canada[a]	3,335,534	3,375,560	40,026
Parks Canada Agency[b]	20,761,201	24,171,903	3,410,702
Public Works and Government Services Canada[c]	118,717,799	159,863,436	41,145,637
Royal Canadian Mounted Police	3,121,562	2,874,887	-246,675
Transport Canada	163,587,726	146,573,661	-17,014,065
Total	**3,650,566,715**	**4,089,289,884**	**438,723,169**

[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 or for Enterprise Cape Breton Corporation, which are not part of FCSAP.

Table D.3: Changes in total liability for remediation of contaminated sites (2014–2015)

	March 31, 2014 ($)	March 31, 2015 ($)	Difference ($)
Opening balance	4,891,367,062	4,795,679,415	-95,687,647
Less: expenditures reducing opening liabilities	432,808,848	299,922,633	-132,886,215
Add: changes in estimated remediation costs	261,574,058	1,276,011,671	1,014,437,613
Add: new liability for sites not previously recorded	75,547,143	38,670,671	-36,876,472
Closing balance (gross)	4,795,679,415	5,810,439,124	1,014,759,709
Expected recoveries		17,321,495	17,321,495
Closing balance (net)	4,795,679,415	5,793,117,629	997,438,214

Source: Public Accounts of Canada, 2014-2015