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Ship-Source Oil Spill Response and Preparedness Regime Report to Parliament, 2011 – 2016

MARINE SAFETY & SECURITY

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ACRONYMS

ALERT	Atlantic Environmental Response Team Inc.
ARP	Area Response Planning
CCG	Canadian Coast Guard
CSA, 2001	Canada Shipping Act, 2001
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
ECRC	Eastern Canada Response Corporation Ltd.
ER	Environmental Response
FRP	Fleet Renewal Plan
GAR	Geographical Area of Response
ICS	Incident Command System
IMO	International Maritime Organization
JCP	Canada-U.S. Joint Marine Pollution Contingency Plan
MCTS	Marine Communication and Traffic Services
MOU	Memorandum of Understanding
NASP	National Aerial Surveillance Program
NEEC	National Environmental Emergencies Centre
OPP	Oceans Protection Plan
OPEP	Oil Pollution Emergency Plan
OPPP	Oil Pollution Prevention Plan
PAR	Primary Area of Response
PTMS	Point Tupper Marine Services Ltd.
RO	Response Organization
SOLAS	International Convention for the Safety of Life at Sea
SOPEP	Shipboard Oil Pollution Emergency Plan
TC	Transport Canada
TSEP	Tanker Safety Expert Panel
WCMRC	Western Canada Marine Response Corporation

PURPOSE OF THE REPORT

This report is prepared pursuant to Section 173 of the *Canada Shipping Act, 2001* (CSA, 2001)¹, and provides an overview of how Canada maintained a Ship-Source Preparedness and Response Regime (the Regime) during the 2011-2016 period. The legislative authority of this Regime is laid out in sections 167 to 172 of the CSA, 2001 and its associated regulations.

The previous report to Parliament (for the period 2006 to 2011) was the first report to cover a five year period, and provided a full overview of the Regime. The current report has been streamlined to avoid duplication of information that has been previously tabled. It provides a brief overview of the Regime, followed by a summary of events, activities, changes to the Regime, and any resulting impacts or outcomes that have occurred during this new reporting period.

BACKGROUND ON CANADA'S SHIP-SOURCE OIL SPILL PREPAREDNESS AND RESPONSE REGIME

Ship-source oil spill preparedness and response regimes around the world are generally based on a framework set out by International Maritime Organization (IMO) conventions. Countries follow this common framework as much as practicable, with slight differences to how they establish their respective regimes (e.g., to account for jurisdiction, unique environmental circumstances).

Canada's Ship-Source Oil Spill Preparedness and Response Regime (the Regime) follows the Polluter Pays Principle, whereby the industry transporting the product is responsible for costs related to cleanup and pollution damage. Further, a world-leading suite of liability and compensation measures is in place, addressing activities under federal jurisdiction and protecting Canadians from damages and costs associated with spills. Industry's operational role is carried out through four industry-funded and Government-certified Response Organizations (ROs) which maintain a level of preparedness to respond to spills, according to Canadian regulations and standards.

The Government of Canada provides the legislative and regulatory framework for the Regime. Three legal instruments form the basis of the current Regime. Part 8 of the CSA, 2001, the *Response Organization and Oil Handling Facilities Regulations*, and the *Environmental Response Arrangements Regulations*. The Government of Canada also oversees industry and their response to spills, and maintains a robust additional level of preparedness and capacity to respond to an oil spill along Canada's three coastlines, the Great Lakes, and inland waters.

ROs are required under the legislation to use the funds to maintain a minimum preparedness capacity to respond to spills of 10,000 tonnes within prescribed time standards and operating environments. Specifically, ROs are responsible for providing coverage in all Canadian waters south of 60° N latitude. The Arctic is a much more complex environment within which to prepare for and respond to spills due to its climate, remoteness, and lack of support infrastructure. While there are no private-sector ROs in place in the Arctic, the Regime applies throughout Canadian waters and the polluter pays principle still holds north of 60° N latitude.

¹ The CSA, 2001, part 8, section 173 requires that the Minister of Transport review the operations of sections 167-172 of CSA, 2001 and report the results of this review to Parliament every five years.

REQUIREMENTS FOR VESSELS AND OIL HANDLING FACILITIES

The CSA, 2001 outlines the requirements within the Regime for discharges of oil by vessels and oil handling facilities in Canada. The following provides an overview of these requirements.

VESSELS

Vessels² conducting business in Canadian waters south of 60° N latitude are required to have an arrangement, for which they pay fees, with a certified RO. They are also required to have on board a shipboard oil pollution emergency plan and a declaration that identifies the ship's insurer, confirms the existence of an arrangement with a certified RO, and identifies every individual authorized to invoke both the arrangement and the shipboard oil pollution emergency plan.

The owners of oil-carrying vessels are held strictly liable for any spills from their vessels. Vessels carrying more than 2,000 tons of oil as cargo must carry insurance to cover their liability.³

As a matter of course, the Canadian Coast Guard (CCG)'s Marine Communication and Traffic Service (MCTS) operators question a vessel to determine if it meets its required arrangements as it enters Canadian waters south of 60° N latitude. Tankers are inspected at their first visit to Canada and annually thereafter and all other foreign vessels are inspected on a risk basis for compliance with a range of safety requirements, including the requirements outlined above.

Note: vessels operating north of the latitude 60° N are not required to have an arrangement with an RO (given that none currently cover these locations / environments), but must meet all regulatory requirements in terms of readiness and preparedness should an oil spill occur according to their tonnage. In these situations, the government of Canada, as it does south of 60° N latitude, oversees the response and maintains equipment and resources that can be deployed if required.

OIL HANDLING FACILITIES

Oil handling facilities (OHFs)⁴ located south of the latitude 60° N that receive more than 100 tonnes of oil annually are also required to have an arrangement with a certified RO in respect of any quantity of oil that is being loaded or unloaded to or from a vessel at the OHF.

Furthermore, section 168 (1) of the CSA, 2001 requires that these OHFs have:

- an oil pollution emergency plan to immediately respond to an incident, and an oil pollution prevention plan to mitigate the likelihood of a discharge of oil during loading or unloading of a vessel; and
- an on-site declaration that describes the manner in which the operator will comply with the regulations, confirms that an arrangement with an RO is in place, and identifies every individual authorized to invoke both the arrangement and the oil pollution emergency plan.

² Under the *Environmental Response Arrangement Regulations*, vessels are defined as: oil tankers of 150 gross tonnage or more; any vessel of 400 gross tonnage or more that carries oil as cargo or as fuel, and; groups of vessels that are towed or pushed, are of 150 gross tonnage or more in total, and carry oil as cargo.

³ The liability regime for persistent oil carried in bulk as cargo is established through the *International Convention on Civil Liability for Pollution Damage*, 1992, which is implemented through Part 6 of the, *Marine Liability Act*.

⁴ Oil handling facilities are facilities used in the loading or unloading of petroleum in any form (including crude oil, fuel oil, sludge, oil refuse, and refined products) to or from a vessel.

TC inspectors inspect these facilities to ensure that the required arrangements and plans are in place. These OHFs are also required to take reasonable measures to implement their oil pollution emergency plans in the event of an oil spill.

Note: As with vessels, OHFs located north of the latitude 60° N are also not required to have an arrangement with an RO, but must meet all regulatory requirements in terms of readiness and preparedness should an oil spill occur according to their level of oil transfer rate. In these situations, the government of Canada, as it does south of 60° N, oversees the response and maintains equipment and resources that can be deployed if required.

REGIME PARTNERS AND THEIR RESPONSIBILITIES

TC's partners in the Regime include the CCG, and Environment and Climate Change Canada (ECCC).

TRANSPORT CANADA

TC is responsible for the regulatory oversight of the Regime, including certification of ROs every three years and reviewing vessel and OHFs' emergency pollution and prevention plans. Additionally, TC monitors the ROs' oil spill exercises, and conducts inspections of vessels and OHFs to ensure their adherence to the relevant regulations and standards. TC also maintains the National Aerial Surveillance Program (NASP), the primary mechanism for detecting illegal spills in waters under Canadian jurisdiction.

TC's Marine Safety Inspectors inspect foreign vessels on a risk-based basis for compliance with a wide range of safety requirements, including the requirement to have an arrangement with a government-certified RO. TC also inspects tankers to ensure compliance with Canadian and international laws and regulations.

THE CANADIAN COAST GUARD

The CCG is responsible for the programs and services that contribute to the safety, security, and accessibility of Canada's waterways. As incident commander for the federal government, the CCG ensures an appropriate response to:

- ship-source spills (i.e., where the polluter is unable or unwilling to respond);
- mystery source spills (i.e., where the polluter is unknown);
- pollution incidents occurring at OHFs as a result of loading or unloading; and
- spills from any source originating in foreign waters that impact Canadian waters.

The CCG ensures an appropriate response using the Incident Command System (ICS) methodology (i.e., application of a standardized approach to the command, control, and coordination of emergency response), as the situation dictates. The CCG's MCTS officers communicate with all vessels regarding their response organization arrangement as they enter Canadian waters south of 60° N latitude.

As a complement to the Regime's capability, the CCG maintains additional preparedness capacity, such as specialized response equipment which is located at depots throughout the country (see Annex 2). CCG's capacity serves as a "safety net" that can provide immediate response capability where required, as well as a response capability for offshore spills.

ENVIRONMENT AND CLIMATE CHANGE CANADA

In the context of ship-source pollution, ECCC provides Regime partners with science-based advice to better track and recover from spills. Their National Environmental Emergencies Centre (NEEC) relays scientific advice and technical support. Available 24/7, the NEEC facilitates a number of services to effectively manage environmental emergencies and reduce their impacts. This includes:

- site-specific weather forecasting;
- spill trajectory modelling;
- fate and behaviour of hazardous and noxious substances;
- environmental sensitivity mapping;
- establishment of clean-up priorities;
- shoreline clean-up assessment techniques; and
- advice on the protection of sensitive ecosystems and wildlife.

ECCC also provides spill detection and tracking support through satellite-based observations as part of the Integrated Satellite Tracking of Oil Pollution Program, as well as routine marine and ice forecasts to support safe navigation.

RESPONSE ORGANIZATIONS

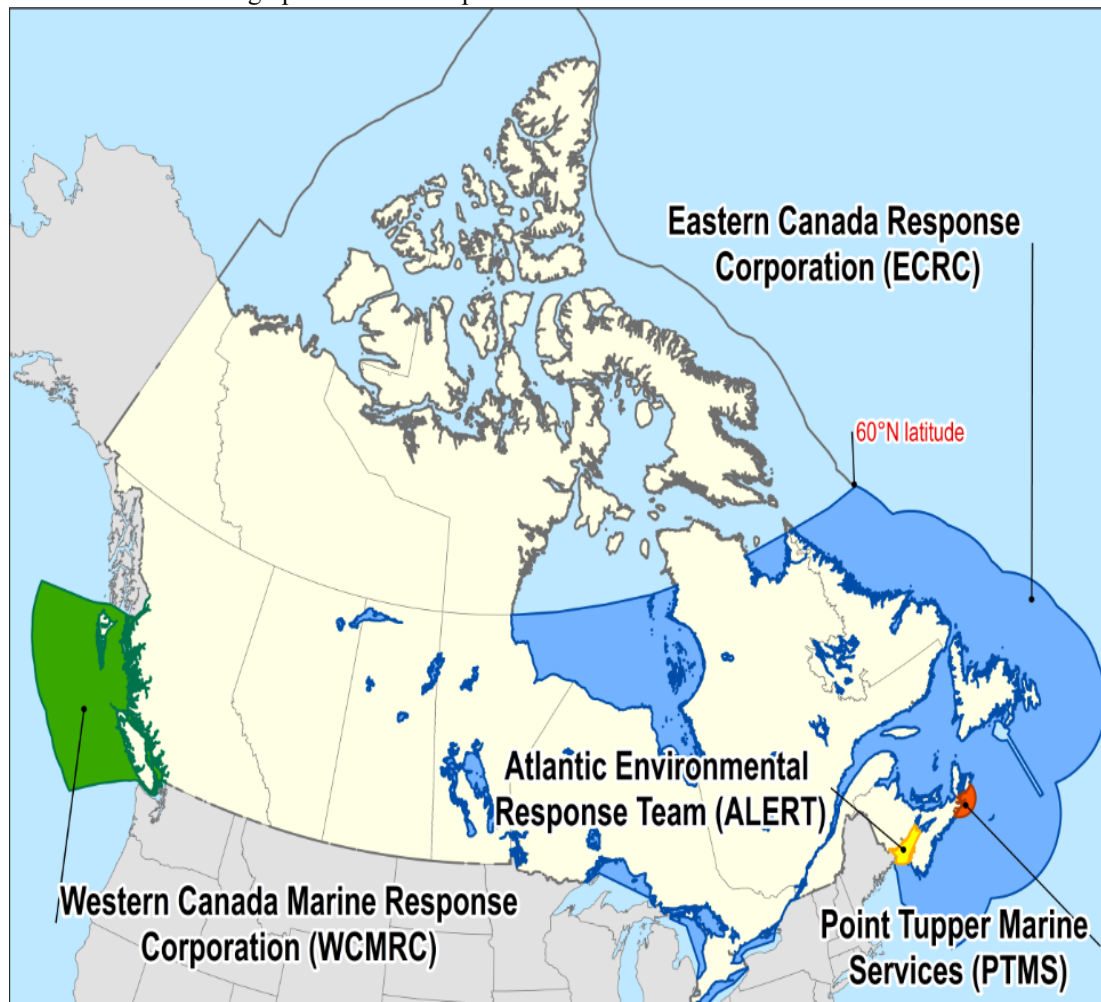
Canada's four certified RO's are private entities established and funded by the shipping industry to respond to ship-sourced oil spills. They are required by law to maintain a minimum preparedness capacity to respond to spills up to 10,000 tonnes within prescribed time standards and operating environments. ROs are funded through a series of fees. This includes a bulk oil cargo fee which is levied on vessels that carry oil as a cargo, and an annual sum levied on prescribed vessel and OHFs who are requiring by law to have an arrangement with a certified RO.

The four ROs are:

- Atlantic Environmental Response Team Inc. (ALERT);
- Point Tupper Marine Services Ltd. (PTMS);
- Eastern Canada Response Corporation Ltd. (ECRC); and
- Western Canada Marine Response Corporation (WCMRC).

For detailed contact information please see Annex 3 – Response Organization Contact Information

See below for the Geographic Area of Response for each RO.



REVIEW OF THE REGIME OVER THE 2011-2016 PERIOD

Since the establishment of the Ship-Source Oil Preparedness and Response Regime in 1995, there have not been any major spills involving oil tankers or other vessels in the Canadian marine environment. This trend has continued for this reporting period – the four ROs were engaged in a total of 223 spill related response activities over the five-year period, deployed primarily in response to relatively small spills (i.e., spills that did not lead to significant impact to the safety of Canadians or the environment). Canadian ROs continued to build their spill response expertise, readiness, and linkages with other organizations. Oversight of the regime continues to ensure that private and public responsibilities result in a consistent approach to addressing potential spills in Canadian waters.

The following section provides an overview of key events, activities, changes to the Regime (including regulatory or legislative), and any resulting impacts or outcomes that have occurred during 2011-2016 reporting period.

REGIME OVERSIGHT

CERTIFICATION

In order to operate in Canada, an RO must receive certification from TC pursuant to section 169(2) of the CSA, 2001. During the certification process, TC ensures that ROs comply with all requirements set out in the regulations and standards outlined in:

- section 171 of CSA, 2001, Part I of the *Response Organizations and Oil Handling Facilities Regulations* (SOR/95-405);
- the *Environmental Response Arrangements Regulations* (2008-275); and
- the *Response Organizations Standards* (TP 12401 E).

These regulations and standards ensure that ROs are capable of responding to spills of 10,000 metric tonnes, at a minimum. In order to be certified, ROs must develop a response plan that meets certain planning standards (e.g., response times, response capabilities, shoreline cleanup, etc.) including the 10,000 planning standard.

RO certification is valid for three years. The certification process includes TC:

- inspection of facilities;
- review of the response plans; and
- evaluation of the results of the organization's oil spill response exercises.

Over the reporting period, all four response organizations received re-certification pursuant to Section 169(6) of CSA, 2001.

TRAINING AND EXERCISES

Oil spill response exercises provide opportunities to evaluate operational capacities, identify areas for operational improvement, and ensure the continued education of all responders. Exercises also help to attain the coordination required for effective responses in real situations. The exercise program is meant to evaluate the effectiveness of all aspects of the procedures, equipment, and resources that are identified in the plan, including exercises coordinated with ships, oil handling facilities, and the CCG.

In addition, ROs must deliver a description of the training provided to its personnel. This training must take into account permanent employees, volunteers, and employees needed on short notice. Over the reporting period, the ROs engaged in a wide range of exercise types and training exercises. These included:

- **Tier I, II, III, and IV Oil Spill Exercises, including Tabletop Exercises⁵** designed to demonstrate an initial response capability, for a defined scenario (e.g., situation analysis, shoreline assessment and treatment, site health and safety);
- **Basic Oil Spill Response Training** involving OHFs and ROs, provides key response personnel with adequate training and experience to coordinate and direct the operational response to a marine oil spill under the overall direction of the On-Scene Commander;
- **Shoreline Cleanup Assessment Team (SCAT) Training** which provides members of the response team with a working knowledge of the process to: systemically gather data on

⁵ Tier I, II, III, and IV exercises simulate responses spills amounting to 150, 1,000, 2,500, and 10,000 tonnes of oil, respectively. The different tiers of oil spill exercises also refer to the amount of time allowed for equipment to be deployed on-site (Tier I - 6 hours, Tier II – 12 hours, Tier III – 18 hours, Tier 72 hours).

shoreline oil conditions; use this data to identify clean-up priorities and options; and to prepare a plan of action; and

- **Wildlife Response Training** which covers a variety of courses for wildlife rescue and rehabilitation.

A summary of response organizations' activities can be found below.

2011 – 2016 Activities for Eastern Canada Response Corporation Ltd (ECRC)	
Total Spill-Related Response Activities	114
Total Spill Response Exercises	434
Total Training Sessions Conducted	1,200+
Regional Workshops Conducted	13

2011 – 2016 Activities for Atlantic Emergency Response Team (ALERT)	
Total Spill-Related Response Activities	12
Total Spill Response Exercises	56
Total Training Sessions Conducted	140
Total Number of Public Engagement Activities	21
Total Number of Wildlife Response Activities	16

2011-2016 Activities for Western Canada Marine Response Corporation (WCMRC)	
Total Spill Related Response Activities	88
Total Spill Response Exercises	84
Total Training Sessions Conducted	225
Total Number of Public Engagement Activities	426
Total Number of Wildlife Response Activities	5

2011 – 2016 Activities for Point Tupper Marine Services Ltd (PTMS)	
Total Spill-Related Response Activities	8
Total Spill Response Exercises	84
Total Training Sessions Conducted	240
Total Number of Wildlife Response Activities	9

LEGISLATIVE UPDATES

In 2014, Bill C3, *Safeguarding Canada's Seas and Skies Act*, in support of the Modernization of Environmental Response (ER) Regime, received Royal Assent. This included amendments to the CSA, 2001 aimed at strengthening the Regime by:

- removing obstacles when responding to a ship-source oil spill incident by providing civil and criminal immunity protection equally to the certified ROs and their agents;
- strengthening TC's compliance and enforcement capacity - by bringing the Act's administrative monetary penalty provisions in line with Part 8 of the legislation; and
- ensuring more rigorous requirements for ship-source oil spill prevention at OHFs.

The first of the amendments came into force during the reporting period. The other amendments will enter into force once the new *Environmental Response Regulations* are published in the *Canada Gazette*, Part II.

OVERSIGHT CAPACITY

In 2012, the Government approved additional resources to develop an oversight regime to modernize the Environmental Response program at TC. The objective of the new management framework would be to:

- establish dedicated regional environmental response managers and officers; and
- provide additional resources at TC headquarters to support the development of national policies, procedures and work instructions.

NATIONAL AERIAL SURVEILLANCE PROGRAM

NASP was established in 1991 and is an integral part of the Regime. Aerial surveillance is considered the most effective way to detect ship-source pollution, and serves as a valuable deterrent against the unlawful discharge of pollutants in Canadian waters. Originally established by the CCG, NASP was transferred to TC in 2003. It is a world-class surveillance capability and an important spill response mechanism. During the reporting period, NASP utilized two Dash 8 and one Dash 7 surveillance planes to monitor vessel traffic within Canadian waters.

Below is a summary of NASP activities for the 2011-2016 reporting period.

Year	Number of vessels over-flown	Patrol Hours	Number of Spills detected from identified vessels	Total number of spills detected ⁶	Average Spill Size (Litres)	Maximum Spilled (Litres) ⁷	Source of Max Spill
2011-2012	12,032	2,064	18	135	7.51	132.70	Unknown
2012-2013	10,134	2,080	14	97	80.55	4,000.80	<i>Arthur J</i> (Barge)
2013-2014	19,989	3,877	44	214	20.81	583.70	<i>Sea Breaker</i> (Fishing Vessel)
2014-2015	19,551	3,842	37	322	9.86	732.32	Unknown
2015-2016	17,427	2,932	50	380	20.90	3419.25 ⁸	<i>MV Marathassa</i> (Bulk Carrier)

Over the reporting period, the NASP increased its surveillance activities by 200 hours per year in British Columbia, 100 hours per year in the Ontario region, 100 hours per year increase in the Quebec region, and in Atlantic Canada - a 550 hours increase per year (300 hours of surveillance in Newfoundland and Labrador and 250 hours in the Maritimes). The increase in surveillance hours allows for earlier spill detection and timely response.

⁶ The difference between total spills and spills by identified vessels represents spills that were detected but for which the source is unknown.

⁷ By way of comparison, the 1989 Exxon Valdez spill which occurred in Alaska, near Prince William Sound, spilled approximately 40 million litres of oil.

⁸ Cumulative total

AREA RESPONSE PLANNING PILOT PROJECT

In 2012, the Government announced measures to strengthen tanker safety and reinforce Canada's capacity for oil spill preparedness and response. One key measure was the creation of the Tanker Safety Expert Panel (TSEP) in 2013, mandated to review and propose measures to strengthen the Regime's structure, functionality, industry requirements, and overall efficiency and effectiveness. The expert panel consulted with representatives from industry, government experts, and members of the public about all facets of the Regime.

A primary TSEP recommendation was the transition from a static national 10,000 tonne capacity approach to an Area Response Planning (ARP) model which recognises local response needs and local environmental sensitivities. The ARP model applies consistent principles and expectations for spill preparedness and response through a more adaptable, inclusive and risk based approach. The ARP pilot project (initiated in 2014) was a regionally tailored system to marine oil spill response planning. The areas that were selected for this pilot project were the southern region of British Columbia, the St. Lawrence River (Montreal to Anticosti Island), Port Hawkesbury and the Strait of Canso, and Saint John and the Bay of Fundy.

The ARP project was completed in 2017. It was jointly led by TC and the CCG, in cooperation with ECCC and DFO. The pilot project was designed to qualify:

- risks that exist in a specific geographic area;
- ways to reduce or address these risks;
- scenarios that could occur; and
- environmental sensitivities.

The Government of Canada worked in collaboration with ROs and stakeholders, including communities, Indigenous partners, all levels of government, and industry, to develop this approach. The ARP project helped increase the scientific knowledge of local environments in order to identify sensitivities and potential consequences of an oil spill, and further scientific knowledge of spilled substances and countermeasures to inform a response in specified areas. The results of this pilot project will be used by TC and federal partners to inform improvements to the Regime going forward.

SCIENCE-BASED DECISION-MAKING

ECCC collaborated with DFO and the CCG to advance the development of a high resolution, 24/7, integrated oil spill modelling system. Specific scientific advancements include improved understanding and modelling of the interactions between the ocean and the atmosphere and improved oil spill modelling. This modelling system is a key tool in support of oil spill preparedness and response planning.

Additionally, studies were initiated by ECCC over the reporting period to evaluate the:

- physical and chemical properties, as well as the fate and behaviour of spilled diluted bitumen⁹ (dilbit);
- effectiveness of spill countermeasures in support of the response Regime;
- improved marine bird baseline data; and
- work toward a National Wildlife Emergency Response Framework.

⁹ Bitumen is a black, viscous mixture of hydrocarbons that is commonly used as a binder in asphalt. Diluted bitumen (dilbit) is bitumen blended with one or more lighter petroleum products (diluent) to reduce its viscosity to make it easier to transport by pipeline, for example.

With regards to dilbit, between 2013 and 2015, three field campaigns were conducted in the Douglas Channel and Haida Gwaii areas, and between 2014 and 2016, an additional three were conducted in the St. Lawrence region. Sites were surveyed for surface assessment and validation (e.g., behaviours when spilled into bodies of water), and to conduct sampling to feed into baseline physical and chemical analysis. As studies are ongoing, results will be reported on in the next 5 year period.

ECCC also developed oil spill response guidance documents and together with the RO's worked collaboratively on oil spill research field studies and ARP activities. This work has been shared with all RO's and other relevant stakeholders.

INCREASING CANADIAN COAST GUARD CAPACITY

In 2012, the CCG celebrated 50 years of dedicated service, and the Government of Canada committed to strengthening their preparedness capability. Efforts to update the CCG's response tools and capacity over the reporting time period include:

Updates to the CCG Marine Spills Contingency Plan - National Chapter: In 2011, the CCG updated its environmental response plans in the *Marine Spills Contingency Plan – National Chapter*¹⁰. This plan defines the scope and operating framework of the CCG to ensure proper responses to marine pollution incidents. Updates included, but were not limited to levels of service, training and exercising programs, CCG resources, and supporting agencies involved in a response. The plan is reviewed regularly and updated as necessary.

Strengthening the CCG Fleet: The *Fleet Renewal Plan (FRP)* is an investment strategy that outlines the appropriate number, classes and mix of vessels and helicopters needed over the next 30 years to maintain programs and services. In 2014, the CCG accepted delivery of four Mid-Shore Patrol Vessels. The following year the CCG introduced the acquisition of up to five Medium Endurance Multi-Tasked Vessels and an additional five Offshore Patrol Vessels. These vessels will be capable of supporting current fleet assets for environmental response.¹¹ The FRP ensures that the fleet continues to meet the current and emerging needs and priorities of Canadians.

Implementing Incident Command System (ICS) Methodology: The Incident Command System (ICS) is an all-hazards management system and an internationally recognized methodology for command, control, and coordination of response operations. It is a standardized, on-scene emergency management concept, adopted as a way to organise people, equipment, operations, and communication activities to more effectively manage emergencies. In 2013, CCG announced steps to implement ICS as the methodology for managing on-water pollution incidents.¹²

Modernizing Canada's Marine Navigation System (e-Navigation): The CCG collaborated with the Canadian Hydrographic Service and ECCC to modernize the marine navigation system via leveraging e-Navigation technologies. E-Navigation aids with the collection, integration, exchange, presentation, and analysis of marine information onboard and ashore, which includes:

- Marine weather forecasts;
- Buoys and station data;
- Water level forecasts;
- Tide and current tables;

¹⁰ Marine Spills Contingency Plan – National Chapter 2011

¹¹ Canadian Coast Guard Integrated Business and Human Resource Plan 2015 - 2018

¹² Through the Oceans Protection Plan (OPP), which was launched towards the end of this reporting period, TC has moved to implement the Incident Command System methodology more broadly to strengthen response to marine incidents and enable TC to work seamlessly with partners.

- Current hazards and warnings;
- Notices to shipping (NOTSHIP) and notices to mariners (NOTMAR);
- Shoals;
- Status of aids to navigation, nautical charts and publications, and status of buoy tending operations; and
- Vessel traffic services.

The preliminary version of the e-Navigation portal was introduced in 2015 with structured testing from pilots and marine stakeholders across the country. Version 2 was developed and went live in the same year to address usability issues within the maritime community.¹³

REGIME EVALUATION AND ASSESSMENT

The high profile ship-source pollution incidents that have occurred over this reporting period (such as those described in Annex 1 – National Events) have increased the public’s overall interest in Canada’s Ship-Source Oil Spill Response and Preparedness Regime. The increase in oil shipments and the transport of other potential pollutants, such as liquefied natural gas and other hazardous and noxious substances, through Canadian waters has further intensified public discussion around the Regime’s need to be further strengthened and modernized.

In 2013, following the creation of the Tanker Safety Expert Panel (TSEP) to propose new measures to strengthen the Regime, the panel’s recommendations were published in two reports¹⁴. The first report, *A Review of Canada’s Ship-source Oil Spill Preparedness and Response Regime—Setting the Course for the Future*, presented 45 recommendations and associated findings for the Regime south of the 60° N latitude was released in 2013. The recommendations in this report emphasized the need for timely responses to spills in order to mitigate their effects, highlighted the need for spill planning and response resources to be tailored to specific geographic areas, and reaffirmed that Canadian taxpayers should not bear any liability for spills in Canadian waters.

A second report, *A Review of Canada’s Ship-Source Spill Preparedness and Response: Setting the Course for the Future, Phase II - Requirement for the Arctic and for Hazardous and Noxious Substances Nationally*, was released in 2014 and made 25 recommendations to improve ship-source spill prevention, preparedness and response in the Canadian Arctic. This report focused on ship-source spill prevention, preparedness and response requirements for Canadian waters north of 60° N latitude. It also included a review of requirements for a national Hazardous and Noxious Substances system, noting that no comprehensive regime exists in Canada, despite the need for proactive measures to be put in place.

TC also commissioned an evidence-based Canadian risk assessment of the likelihood and consequences of an oil spill or hazardous and noxious substances incident in Canadian waters, as well as a risk assessment of spill likelihood specifically in the Arctic. Overall, these assessments found that the risk of a major oil or hazardous and noxious substances spill in Canadian waters is very low. However, the level of risk varies across the country with southern British Columbia and the St. Lawrence River having the highest relative risk due to increased traffic volume.

¹³ Canada’s Maritime Information Portal: <http://www.marinfo.gc.ca/e-nav/index-eng.php>

¹⁴ Additional information on the Tanker Safety Expert Panel can be found at <https://www.tc.gc.ca/eng/tankersafetyexpertpanel/page-125.html>

IMPLEMENTING LESSONS LEARNED FROM INCIDENTS

Any incident, independent of size or impact, provides an opportunity to identify areas for improvement in the Regime.

For example, in April 2015, the *MV Marathassa* -- a Panamax-sized bulk carrier – spilled an undetermined amount of fuel oil in British Columbia’s English Bay upon arrival from Busan, South Korea. The CCG activated the WCMRC to initiate an on-water response, and acted as the On-Scene Commander¹⁵. The response to the *MV Marathassa* led to the “Independent Review of the M/V Marathassa Fuel Oil Spill Environmental Response Operation”, also referred to as the Butler Report. It concluded that many factors contributed to the apparent confusion among some partners regarding their roles and responsibilities in oil spill response. The report highlighted the need for all parties to actively engage in joint exercises and training in order to test the system and establish and maintain relationships. There also proved to be a need to engage in the development of localized response plan. The recommendations of this review led to the development of the Greater Vancouver Integrated Response Plan¹⁶.

Lessons learned from the *MV Marathassa* and other incidents include:

- the need for improved flow of information and communication procedures between partners;
- the development of clear roles, responsibilities, and standards of all organizational/departamental partners and staff involved in oil spill preparedness and response;
- the adoption of preventative and precautionary measures with regards to oil spills and the availability of appropriate tools;
- the development of localized response plans with standardized scenarios;
- the strategic management of incident response;
- the adoption of an IT sharing platform between partners as well as incident specific communication tools;
- the on scene presence of officials from various departments; and
- better early alerting capabilities (by municipalities, Indigenous partners, and stakeholders).

Canada’s Regime partners continue to work on integrating these lessons learned into their planning operations. For example, in 2016, the CCG published the *Canadian Coast Guard Environmental Response Concept of Operations - For an Alert, Responsive and Robust Environmental Response Program*. The internal report was published following audits and reviews, including the Butler Report, and addressed issues concerning the CCG’s capability to respond to pollution incidents within its mandate. The report created a blueprint for strengthening their environmental response system.

That blueprint was then used to:

- inform various initiatives under the Oceans Protection Plan (OPP);
- establish an Environmental Response Operational Governance Committee;

¹⁵ At this point the use of the ICS had not been fully integrated. Continued implementation of the ICS was one of the principal recommendations of the MV Marathassa Report.

¹⁶ The Greater Vancouver Integrated Response Plan for Marine Pollution Incidents is designed to serve as the guide for multi-agency on-water response to serious oil pollution events in the area of English Bay and Burrard Inlet. It is the product of a cooperative effort by Federal Departments, Indigenous communities, Provincial Ministries, Municipalities, the Port Authority and private enterprise, including the Vancouver Aquarium and Western Canada Marine Response Corporation. This Plan focuses on ship-source and mystery-source spills of liquid petroleum in the marine environment as covered under the CSA, 2001.

- drive standardization of Coast Guard response posture;
- define and staff new Primary Environmental Response Teams; and
- adopt a risk-based approach to area planning; and consolidate Coast Guard's Incident Command role from coast to coast to coast.

The CCG Environmental Response Concept of Operations serves as the program vision for the next few years and its implementation is embodied in the CCG Marine Spills Contingency Plan / Environmental Response Manual.

INTERNATIONAL PREPAREDNESS AND RESPONSE ACTIVITIES

Canada and the United States (U.S.) share adjacent territorial waters, and are engaged at the bilateral and international level to maintain a level of preparedness should a ship-source spill occur in shared or contiguous waters.

CANADA-UNITED STATES JOINT MARINE POLLUTION CONTINGENCY PLAN (JCP)

In 2013, the Canadian and the U.S. Coast Guards updated the JCP (previously updated in 2003). The plan, originally limited to mutual aid agreements for spills in contiguous waters, was updated to include all Canadian and U.S. waters. The 2013 agreement reaffirmed joint exercise commitments in the five geographic areas annually, including the Great Lakes, the Atlantic coast, the Pacific coast, the Beaufort Sea, and the Dixon Entrance.

MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN ENVIRONMENT AND CLIMATE CHANGE CANADA AND THE U.S. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

The MOU leverages existing resources and provides opportunities to coordinate collaborative research activities. The new knowledge and enhanced operational capabilities improves our ability to prepare for and respond to environmental emergencies, including oil spills. The MOU fosters a better understanding of capabilities, systems and data management practices related to the further integration of forecast systems, observation networks, and climate and hydrological services for areas of joint interest (Arctic and Great Lakes regions, oil spill response, and marine forecasting). In addition, ECCC provided updated physical and chemical properties of a number of Arctic oils, including historic Beaufort Sea samples. This information allows for better predictions of the fate and behaviour of spilled oil. ECCC was also involved in evaluations of unmanned aerial vehicles and autonomous undersea vehicles for potential use in the detection of oil during a spill response.

NORTH PACIFIC COAST GUARD FORUM (NPCGF)

The NPCGF was founded in 2000, and Canada became a full member in 2001. This forum set out to facilitate multi-lateral cooperation of member states on matters related to maritime safety and security in the North Pacific Ocean. This is done by sharing best practices, exchanging information, and staging on-water exercises identified as a "Multi-lateral/Multi-mission Exercise" (MMEX). The forum is comprised of officials from maritime safety and security agencies of: Canada, China, Japan, Russia, South Korea and the U.S. Further, this forum has several working groups that among other things, focus on combatting illegal trafficking, combining operations, fisheries enforcement (which Canada Chairs), and information exchange.

The Canadian delegation is led by the CCG which also consists of federal representatives from the DFO, Conservation and Protection, the Canada Border Services Agency (CBSA), and the Royal Canadian Mounted Police (RCMP).

ARCTIC COUNCIL

Canada remains an active member of the Arctic Council, which serves as a forum for cooperation, coordination, and interactions between Arctic states, Indigenous communities, and residents. The Arctic Council member countries include Canada, Denmark, Finland, Iceland, Norway, Russian, Sweden, and the United States. Six international organizations representing Arctic Indigenous Peoples have permanent participant status.

Canada served as co-lead for many initiatives related to preparedness and response to ship-source oil spills during the reporting period. These included:

- Arctic Emergency Resource Maps for the Oil Spill Response group (2011 – 2013);
- RP3 project “Recommended Practices in the Prevention of Marine Oil Pollution“(2013-2015);
- In Situ Burn (ISB) of Oil Spills on Water and Broken and Solid Ice Conditions (joint effort with the International Maritime Organization projects (2013 – 2015);
- Update of the *Arctic Guide and the Environmental Risk Matrix* (2011 – 2013); and
- Operational Guidelines in support of the *Task Force Agreement on Marine Oil Pollution Preparedness and Response* (2013 – 2015).

Canada was also signatory to the *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic* (MOSPA) which was signed at the Arctic Council Ministerial Meeting in Kiruna, Sweden on May 15, 2013. Its overall objective is to ensure mutual assistance among the eight Arctic States in the event an oil pollution incident exceeds one State’s capacity, as well as to strengthen cooperation, coordination and mutual assistance among Arctic States related to oil pollution preparedness and response to protect the Arctic marine environment. A tabletop exercise was held in 2016 which identified several gaps, such as the need to maximize the use of the Emergency Prevention, Preparedness, and Response Working Group, and the need to update exercise and training, a potential overlap with other forums and international agreements. These gaps will be addressed by the member states within the confines of the Agreement.

MOVING FORWARD

OCEANS PROTECTION PLAN (OPP)

The OPP, a \$1.5-billion national plan, was launched in November 2016. The OPP aims to improve marine safety and responsible shipping, protect Canada’s marine environment, and strengthen partnerships with Indigenous partners and coastal communities.

Within the OPP, there are several initiatives aimed at improving Canada’s Regime, including:

- Improving availability of science-based expertise during incidents by placing additional emergency and enforcement officers on the Pacific and Atlantic coasts;
- Producing high-resolution marine weather forecasts at high-risk locations to support safe navigation;
- Setting tougher requirements on industry to provide quicker action for any spills from a ship;
- Forming new Indigenous Community Response Training in British Columbia, which will offer training for search and rescue, environmental response, and incident command, thus enabling them to play a greater role in marine safety in their community;

- Conducting regular response exercises with communities, stakeholders and Indigenous communities to ensure response readiness;
- Undertaking additional studies to support science-based decision-making, for example on physical and chemical properties, and the fate and behaviour of spilled diluted bitumen; shoreline characterization and bird studies;
- Upgrading Canadian Coast Guard assets to better respond in the event of a spill, including booms, small response vessels, new mobile command posts and clean-up technologies;
- Establishing a partnership fund, by DFO, as part of the Government of Canada's investments in science, that will provide \$5 million per year in support of collaborative research and to increase collective understanding of our oceans and freshwater; and
- Investing in oil spill cleanup research and methods to ensure that decisions taken in emergencies are evidence based.

These measures will ensure that Canada will be better informed, better prepared, and better equipped to deal with pollution incidents.

The next Report to Parliament will cover the period of 2017-2022 and will provide information on the implementation of measures under the OPP. Additional information on the OPP can be found on TC's website¹⁷.

¹⁷ <https://www.tc.gc.ca/eng/oceans-protection-plan.html>

ANNEX 1 – NATIONAL EVENTS

2013

BRIGADIER GENERAL M.G. ZALINSKI

The USAT Brigadier General M.G. Zalinski sank in 1946 in the Grenville Channel while in transit to Alaska, carrying a variety of cargo. In early 2013, the CCG determined the wreck had deteriorated to a point where corrective actions were required. That same year, the CCG initiated an operation to remove the threat of pollution from the Zalinski and contracted a Dutch salvage company to conduct pollutant removal operations.

The project was managed using the Incident Command System (ICS), which saw representatives from the CCG, the B.C. Ministry of Environment, the Gitga'at First Nation, and the Gitxaala First Nation within a Unified Command. For this project, ECCC provided preliminary environmental damage assessment of the area to determine the condition of the environment prior to the operation (including shoreline mapping and characterization) and provided scientific advice and predictive spill modelling during the oil recovery operations. Each Indigenous nation provided valuable local and cultural knowledge and assisted in the identification of historically important and high value ecological sites within the surrounding area. The CCG concluded the operation in late December 2013 having extracted approximately 44 tonnes of heavy Bunker C oil and 319 tonnes of oily water from the wreck.

MANOLIS L

In January of 1985, the Liberian-flagged Manolis L, carrying paper, grounded on Blowhard Rocks and sank near Change Island in Notre Dame Bay, Newfoundland and Labrador. It sank in approximately 82 metres of water and was believed to contain up to 462 tons of fuel, 60 tons of diesel, 22.5 tons of lube oil in various tanks, and an abundance of hazardous material (including material containing asbestos).

For 28 years, there were no or negligible reports of oil pollution at the site up until an intense storm system disturbed the scene in March 2013. The CCG received reports of oil being discharged and subsequently, discovered cracks in the ship's hull which were then mitigated by sealants and cofferdams. The CCG and TC monitor the Manolis L site through regular surveillance by its marine fleet and helicopters, and evaluate the situation based on information obtained from TC and PAL Aerospace aerial observations and informed by scientific advice provided by ECCC. Since the initial leak was discovered, approximately 3,860 litres of oil have been removed from the vessel¹⁸. The CCG will be removing the remaining oil, as part of an operation that will be detailed in the next Ship-Source Oil Spill Preparedness and Response report to Parliament.

2015

MV MARATHASSA

The MV Marathassa was a Panamax-sized bulk carrier which spilled an undetermined amount of fuel oil in British Columbia's English Bay upon arrival from Busan, South Korea.

¹⁸ RESOLVE Salvage & Fire (Americas). 2017. "Manolis L: Wreck Assessment". Fort Lauderdale: RESOLVE Salvage & Fire. <http://www.ccg-gcc.gc.ca/CCG/ER/resolve>

On April 8, 2015, the CCG received the first report of a mystery-source fuel oil spill sheen in the water in English Bay close to an anchored deep-sea vessel, the MV Marathassa in Vancouver, British Columbia. Based on aerial photos received by Port Metro Vancouver from aircraft transiting the area, and on subsequent discussions amongst partners, the fuel oil dispersion was deemed extensive and recoverable in some areas. The CCG activated WCMRC to initiate an on-water response. WCMRC responded and had crew on scene in roughly one hour and immediately began skimming the fuel oil off the water. The CCG arrived at Port Metro Vancouver to assume the On-Scene Commander role, as the source of the fuel oil spill was not yet confirmed. The CCG boarded the suspected polluting vessel to discuss the spill with the Captain. The CCG issued a notice of direction requesting the vessel's representatives' intentions of how they planned to respond to the fuel oil emanating from the vessel, as per oil spill response protocols. The Captain denied the vessel was the source of the pollution. After establishing the Captain's unwillingness and inability to take action, WCMRC and the CCG determined the need to boom the vessel due to indications that fresh fuel oil was being discharged. The working estimate of the total actual fuel oil recovered by WCMRC was 1400L. The MV Marathassa was released on April 24th to continue her voyage and departed English Bay the next day.

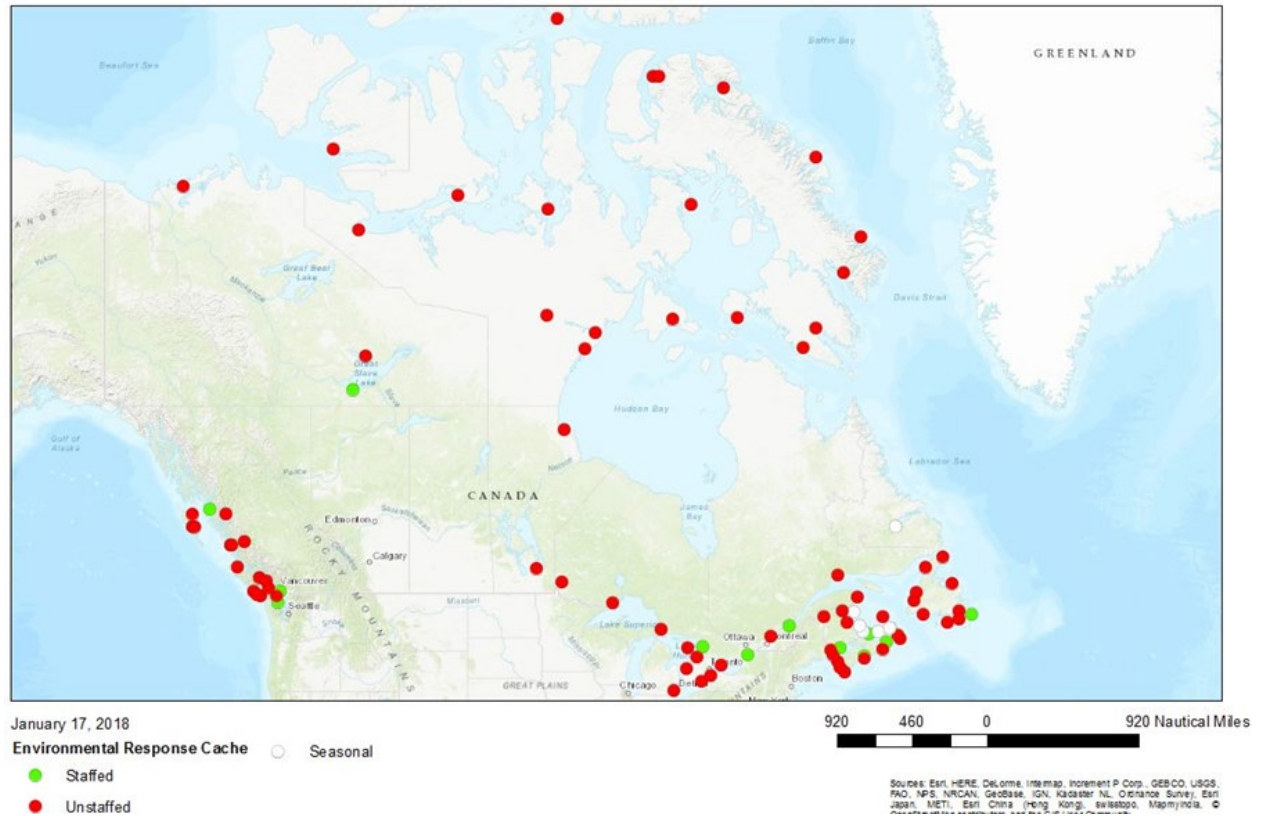
2016

NATHAN E. STEWART

On October 13th, 2016, the tug Nathan E. Stewart and barge DBL 55 ran aground at the entrance to Sea Forth Channel, near Bella Bella, British Columbia while coming from Ketchikan, on its way to Vancouver. Due to mechanical failures the Nathan E. Stewart broke free from the barge and sank. Following Nathan E. Stewart's submersion the barge DBL 55 was subsequently towed to a safe anchorage at Norman Morrison Bay. Due to rough seas and severe weather conditions early booming efforts did not prove to be effective. Approximately 119 000 L of diesel oil and lubricants were removed from the tug and divers prepared the tug for repositioning and lifting. On November 14th, various vessels and barges were used to reposition and lift the tug. On November 22nd, the incident command post was stood down, dive operations were completed, and a notice to mariners was issued regarding the completion of the salvage operation. The Transportation Safety Board's Marine Investigation Report for the Nathan E. Stewart estimated that 110 000 L of diesel oil were released into the environment.

ANNEX 2 – LOCATION OF CCG ENVIRONMENTAL RESPONSE DEPOTS AND CACHES¹⁹

ENVIRONMENTAL RESPONSE DEPOTS (92)



¹⁹ It should be noted that the response structures, as currently in place, are within the response regime time standards that apply to all Primary Areas of Response (PAR's) within Canada. The intention is to provide a tiered response structure with an on-site capability for initial spill containment, with skimming, storage, and beach-cleaning equipment brought in from centrally-located depots.

CCG Region		Staffed Depot Equipment Site		Unstaffed Depot Equipment Site	
Atlantic Region	1	St. John's, NFLD	6	Come By Chance, NFLD	
	2	Dartmouth, NS	7	Burgeo, NFLD	
	3	Charlottetown, PEI	8	Goose Bay, NFLD (Seasonal)	
	4	Saint John, NB	9	Twillingate, NFLD	
	5	Port Hastings, NS	10	Burin, NFLD	
			11	Stephenville, NFLD	
			12	Lark Harbour, NFLD	
			13	Port au Choix, NFLD	
			14	St. Anthony, NFLD	
			15	CCGS <i>Henry Larsen</i> , NFLD (seasonal)	
			16	CCGS <i>Terry Fox</i> , NFLD (seasonal)	
			17	Argentia, NFLD	
			18	Shippegan, NB (seasonal)	
			19	Belledune, NB	
			20	Chatham, NB	
			21	Louisbourg, NS	
			22	Port Bickerton, NS	
			23	Sambro, NS	
			24	Clark's Harbour, NS	
			25	Yarmouth, NS	
			26	Westport, NS	
			27	Grand Manan, NB	
			28	CCGC Sydney, NS	
			29	St. Andrews, NB	
			30	Summerside, PEI (seasonal)	
			31	Souris, PEI (seasonal)	
			32	Alberton, PEI (seasonal)	
			33	Chediacamp, NS (seasonal)	
	Central & Arctic Region	34	Québec City, QC	38	Sorel, QC
		35	Prescott, ON	39	Sept-Îles, QC
		36	Parry Sound, ON	40	Baie de Gaspé, QC
		37	Sarnia, ON (staffed, no equipment)	41	Îles-de-la-Madeleine, QC
				42	Kingston, ON
			43	Cobourg, ON	
			44	Port Dover, ON	
			45	Port Weller, ON	
			46	Amherstburg, ON	
			47	Goderich, ON	
			48	Thunder Bay, ON	
			49	Tobermory, ON	
			50	Meaford, ON	
		51	Sault Ste. Marie, ON		
		52	Holman, NWT (Indigenous community)		
		53	Kugluktuk, NU (Indigenous community)		
		54	Cambridge Bay, NU		
		55	Gjoa Haven, NU (Indigenous community)		
		56	Resolute Bay, NU (Indigenous community)		

CCG Region		Staffed Depot Equipment Site		Unstaffed Depot Equipment Site
			57	community) Arctic Bay, NU (Indigenous community)
			58	Churchill, MB
			59	Clyde River, NU (Indigenous community)
			60	Iqaluit, NU
			61	Cape Dorset, NU (Indigenous community)
			62	Coral Harbor, NU (Indigenous community)
			63	Rankin Inlet, NU (Indigenous community)
			64	Tuktoyaktuk, NWT
			65	Broughton Island, BC (Indigenous community)
			66	Hall Beach, BC (Indigenous community)
			67	Pond Inlet, NU (Indigenous community)
			68	Baker Lake, NU (Indigenous community)
			69	Chesterfield Inlet, NU (Indigenous community)
			70	Kimmirut, NU (Indigenous community)
			71	Pangnirtung, NU (Indigenous community)
Western Region		72 Richmond, BC 73 Victoria, BC 74 Prince Rupert, BC 75 Hay River, NWT	76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92	Queen Charlotte City, BC Masset, BC Sandspit, BC Port Hardy, BC Campbell River, BC Powell River, BC Tofino, BC Bamfield, BC Ganges, BC French Creek, BC Bella Bella, BC Bella Coola, BC Kitimat, BC (Indigenous community) Ucluelet, BC Shearwater, BC Gimli, BC Yellowknife, NWT

ANNEX 3 – RESPONSE ORGANIZATION **CONTACT INFORMATION**

Atlantic Emergency Response Team (ALERT) Inc.
11 Expansion Avenue
Saint John, New Brunswick
Canada E2R 1A6
Telephone: (506) 632-4499

Eastern Canada Response Corporation Ltd.
1201-275 Slater Street
Ottawa, Ontario
Canada K1P 5H9
Telephone: (613) 230-7369
<http://www.ecrc.ca>

Western Canada Marine Response Corporation
206 – 3500 Gilmore Way
Burnaby, British Columbia
Canada V5G 0B8
Telephone: (604) 294-6001
www.wcmrc.com

Point Tupper Marine Services Ltd.
4090 Port Malcolm Road
Point Tupper, Nova Scotia
Canada B9A 1Z5
Telephone: (902) 625-1711