

Appendix G: Updated Monitoring and Management Plans

APPENDIX G.4: OPEP



AGNICO EAGLE

HOPE BAY PROJECT

Oil Pollution Prevention Plan (OPPP) and Oil Pollution Emergency Plan (OPEP)

**MARCH 2024
VERSION 2**

DOCUMENT CONTROL

Revision #	Date	Section	Changes Summary	Author
1	May 2020	Throughout	Review	Agnico Eagle
1.4	August 2021	Throughout	Formatting changes to reflect Agnico Eagle branding.	Agnico Eagle
2	March 2024	Throughout Section 3.3 Section 3.4.3 Section 3.4.5 Section 3.4.6 Section 3.5.1 Schedule 8a.	Updated to support Agnico Eagle formatting and nomenclature and for the addition of a Document Control table. Further changes made to update emergency contacts and procedures as well as updated flow rates.	Agnico Eagle Permitting Team

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10. First Responder Spill Response Responsibilities and Actions
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12. Agnico Eagle Oil Pollution Incident Reporting Form
13. Birds and Oil - CWS Response Plan Guidance
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List of Acronyms

Agnico Eagle	Agnico Eagle Mines Limited
AWOT	Arctic Waters Oil Transfer
CCG	Canadian Coast Guard
ESR	Environment and Social Responsibility Department, Hope Bay
ERT	Agnico Eagle Emergency Response Team as described in the site Emergency Response Plan
ERG	Agnico Eagle Emergency Response Group as described in the site Emergency Response Plan
GHS	Global Harmonization System
IAP	Incident Action Plan
ICS	Incident Command System
INAC	Indigenous & Northern Affairs Canada
KIA	Kitikmeot Inuit Association
NIRB	Nunavut Impact Review Board
NORDREG	Northern Canada Vessel Traffic Services Zone
NUNA	Contractor to Agnico Eagle Resources Inc.
NWB	Nunavut Water Board
MDSRC	Mackenzie Delta Spill Response Corporation
MSROC	Marine Spill Response Operators Course
OHF	Oil Handling Facility
OPPP/OPEP	Oil Pollution Prevention Plan/Oil Pollution Emergency Plan
PCOC	Pleasure Craft Operator Card
SDS	Safety Data Sheet
SOPEP	Shipboard Oil Pollution Emergency Plan
SOTO	Supervisor of Oil Transfer Operations
ULSD	Ultra low Sulphur Diesel
WHMIS	Workplace Hazardous Materials Information System

1 Introduction

1.1 Objectives of the OPPP/OPEP

This plan has been prepared by Agnico Eagle Mines Limited (“Agnico Eagle”) to meet regulatory requirements set out in the following applicable legislation and standards pertaining to Oil Handling Facilities (OHF):

- *Canada Shipping Act, 2001, Part 8, Paragraphs 168(1),168(2), 168(3) and 182(a),*
- *Part II of the Response Organizations and Oil Handling Facilities Regulations,*
- *Part 2 and 3 of the Vessel Pollution and Dangerous Chemicals Regulations, 2012, including the Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants, 2009*
- *Canadian Environmental Protection Act, 1999, Release and Environmental Emergency Notification Regulations, 2011, and*
- *Oil Handling Facilities Standards 1995.*

This plan establishes a comprehensive standard to ensure all shore preparations, communications, emergency preparedness, equipment and trained personnel are in place to coordinate between Agnico Eagle and the other active project participants to transfer fuel between an anchored tanker and a barge, and from a barge moored at the jetty at the Roberts Bay Oil Handling Facility (OHF) at Agnico Eagle Hope Bay, Doris North Project site by previously tested and custom laid transfer hoses.

The Doris North Project mine site and Roberts Bay OHF is located in a remote region, 120km SW of Cambridge Bay, Nunavut, therefore, all preventative and responsive measures have been developed to rely primarily on internal resources, training and expertise to prevent and mitigate an oil handling incident.

This plan and associated procedures contain all steps involved from barge mooring, transfer hose placement, hose-tank connections, communications, fuel transfer, fuel line monitoring, and hose purging and disconnection, to ensure clear instructions are in place to prevent potential incidents from occurring. Environmental and safety measures are addressed throughout the process.

The plan is intended to function utilizing existing site emergency plans and management systems, including the *Hope Bay Emergency Response Plan*. The plan is supplemented by a ground-level operational procedure: Roberts Bay OHF Bulk Fuel Transfer Procedure (see Schedule 1).

This plan applies to all Agnico Eagle employees, contractors and their employees, alliance partners, and visitors during the preparations, off-loading or on-loading operations, and finalization of bulk fuel transfer operations.

1.2 Document Distribution List

Controlled copies of this plan are distributed according to the following list:

AEM – Liked to Intellex Documents

AEM – Hope Bay Management team including all personnel whom may be Manager on Duty

AEM – Corporate Environment

AEM – Hope Bay Environment Department

AEM – JOHSC Co-Chairs

Hard copies of this plan are distributed according to the following list:

AEM – Hope Bay Admin Conference Room

Additional copies of this plan may be obtained by writing to:

Agnico Eagle Mines Ltd.
c/o BBE Global Logistics
#18 Yellowknife Airport
Yellowknife, NT, X1A 3T2
Attn: Environment General Supervisor

1.3 Document Review Procedures

This plan is effective August 1, 2020 and will remain in effect until completion of the 2020 transfer. A new plan will be written and submitted for approval for any future year's fuel transfer activities. Agnico Eagle will notify the organizations listed in Section 1.2 of any updates or amendments to the plan to reflect changes to:

- i. the applicable government regulations;
- ii. Agnico Eagle corporate policies;
- iii. environmental factors; and,
- iv. characteristics or operation of facilities, marine equipment and fuel transfer components.

Changes may also be necessitated by a fuel spill or other incident to mitigate the risks associated with such events.

1.4 Document and Records Retention

All documents and records associated with the OPPP/OPEP will be retained for a minimum of 5 years. Copies of the following documents will be held in the Agnico Eagle Hope Bay Project site operations office for the OHF and all documents and records associated with OHF fuel transfer operations will be retained by Agnico Eagle for a minimum of five years.

1.5 Fuel Transfer Regulatory Requirements

In addition to the *Canada Shipping Act*, the *Arctic Waters Pollution Prevention Act* applies to the transfer of fuel in Canadian waters north of the 60th parallel. The documents containing the latest amendments of the Transport Canada Regulations and Orders pursuant to the Act are listed below:

Arctic Waters Pollution Prevention Act (R.S., 1985, c. A-12)
Arctic Shipping Pollution Prevention Regulations (C.R.C., c. 353)
Arctic Waters Pollution Prevention Regulations (C.R.C., c. 354)
TP 10783 E - Arctic Waters Oil Transfer Guidelines

In addition, Transport Canada recommends that operators adhere to the Arctic Waters Oil Transfer Guidelines, 1997 (TP 10783 E). The guidelines are intended to provide all Supervisors of Oil Transfer Operations (SOTO) in Arctic Waters and their crews with practical reminders and checklists.

1.6 Canadian Coast Guard Contingency Plans

The OPPP/OPEP is required to take into account any contingency plan for the area that is issued by the Canadian Coast Guard (CCG). Agnico Eagle has reviewed the Canadian Coast Guard Environmental Response Marine Spills Contingency Plan.

Agnico Eagle notes that this plan sets out that the role of the Canadian Coast Guard, as Lead Agency, is distinct from the role of the polluter in those instances where the polluter assumes the responsibility for managing the response. The polluter or representative assuming the management of the response to a pollution incident is, for the purpose of this Plan, the On-scene Commander (Agnico Eagle Spill Response Incident Commander). The Canadian Coast Guard has the authority to ensure that the response is carried out in the best interest of the public.

As well, Agnico Eagle notes that when deemed necessary by the Federal On Scene Commander, the Canadian Coast Guard may assume management and control of the response effort. Additionally, it may be necessary and reasonable to deploy equipment to contain the spill in the following circumstances:

- in the initial stages of the incident;
- in the public's interest; and,
- until the polluter's contracted resources are deployed.

1.7 OHF Declaration

Pursuant to Section 19 of the *Response Organizations and Oil Handling Facilities Regulations*, Agnico Eagle has provided a declaration as Schedule 3 to this document.

1.8 OHF Facility

The Roberts Bay OHF has been designed for the safe storage of P50 bulk diesel fuel and Fuel, Aviation Turbine Engine Jet “A”. The OHF presently consists of five 5 million litre capacity field-erected steel storage tanks and a 400,000 litre Jet Fuel storage tank.

A different view of the OHF from the cover photo is seen below and a high level aerial photograph of Roberts Bay may be found as Figures 2 b & c.



Figure 1 Roberts Bay Oil Handling Facility (OHF)

Documentation of tank construction in accordance with the requirements of the Nunavut Impact Review Board Project Certificate No. 003, *Canadian Environmental Protection Act, 1999 (SOR/2008-197 June 12, 2008)*, *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* and the *CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products* will be retained at the OHF. Tank registrations meeting these requirements have been submitted to the regulatory agency having jurisdiction.

Due to the isolated location of the Roberts Bay OHF, Agnico Eagle and the contract fuel suppliers are required to collaborate to provide the equipment and personnel for:

- i. preparing to transfer the fuel;
- ii. transferring the fuel; and,
- iii. preventing and responding to a fuel spill and other incidents.

Fuel transfer operations at the Roberts Bay OHF are managed out of the Sea-lift Command Centre at the Roberts Bay lay-down area.

1.8.1 Remote Location/Facility Coordinates

Due to the isolated location of the site and the OHF, Agnico Eagle must principally be self-reliant on internal resources to ensure prevention and response capabilities are in line with the potential for an oil handling incident during bulk fuel transfers. Agnico Eagle also requires its fuel suppliers to carry equipment in order to ensure prevention and response capabilities.

Table 1 Remote Location/Facility Coordinates

Roberts Bay OHF Jetty Coordinates	Lat/Long	106° 37' 35.33"W 68° 10' 31.37"N
	UTM	13W 432527 E 7563318 N

Agnico Eagle is a Member of the Mackenzie Delta Spill Response Corporation (MDSRC) thus has priority access to the MDSRC spill response equipment and consumables located in Inuvik and Norman Wells, Northwest Territories. In the event of an incident, the inventory listed in Schedule 6 is available to Agnico Eagle to assist in spill response. Since 2020, Agnico Eagle has on site the MDSRC Response Boat and spares mentioned in Schedule 6, the MDSRC Response Equipment Inventory. This is in addition to their own response boat and skiff. The fuel supplier's vessels are also equipped with an inventory of spill response equipment. These inventories are provided in Schedule 8c together with the vessels on which the assets are located.

1.8.2 Tidal Flux and Prevailing Wind

Tidal flux in Roberts Bay during open water season is generally less than 0.5m and near shore currents are minimal.

Season wind rose data indicates the prevailing wind direction in summer months, when bulk fuel transfers occur, is West, or West-Northwest, with most high wind days expected outside of the summer season. This wind direction would direct any spill on water towards the south and east shores of the bay and not towards the open water of Melville Sound. Roberts Bay is relatively sheltered without excessive fetch from the prevailing wind direction. An overview of the Roberts Bay area showing the jetty, charted in-water fisheries compensation shoal structures, adjacent laydown facilities and OHF, is provided in Figure 2d.



Figure 2 Overview of Roberts Bay and OHF Location

1.8.3 Meteorological Conditions

Roberts Bay occasionally experiences inclement weather during the summer that can present a variety of challenges for the fuel transfer operation. Rain or even snow can reduce visibility for the people operating and monitoring the fuel transfer components. High winds, which can start rapidly, can cause strain on barge mooring lines increasing vessel movement, and create chop that reduces the effectiveness of preventative booming.

The fuel supplier and Agnico Eagle will monitor current and forecasted weather conditions. Assessment of the implications of weather deterioration on personnel safety and operational effectiveness will be intensified during periods of inclement weather. Extreme weather that jeopardizes the integrity of the transfer will require a decision from Agnico Eagle and the Supplier on whether to proceed in inclement weather or delay until conditions abate. Either the Agnico Eagle OHF Oil Transfer Supervisor or the fuel supplier Supervisor of Oil Transfer Operations (SOTO) has the power to delay commencement of the transfer due to weather conditions. If the Supplier and Agnico Eagle determine that weather conditions are expected to jeopardize the integrity of the fuel transfer operation, a decision will be made to delay the operation until conditions improve. A key factor in such a determination is whether or not critical emergency prevention and response measures are compromised.

Generally, a 25 knot wind and three foot swell would cause operations to cease immediately. However, if the Supplier representative or Agnico Eagle representative does not feel comfortable working in a given environment, operations would be halted before these conditions are reached. Thunderstorm warnings in the area will pre-empt the transfer of fuel in all cases. The Supplier and/or Agnico Eagle will make a decision not to proceed with the transfer if critical preventative measures are compromised (boom containment effectiveness in sea surface chop). The Agnico Eagle Oil Transfer Supervisor and Supplier Supervisor of Oil Transfer Operations need to be observant of weather deterioration and increase monitoring of personnel safety and security of the operation during periods of inclement weather.

1.8.4 Daylight Hours

Fuel transfer operations are planned for late summer, when the amount of darkness per day is approximately 6 hours. Work during non-daylight hours will require adequate illumination of the fuel transfer areas on the barges, along the transfer hose route and at the shore tanks. Night work will require that illumination for the transfer area be supplied in accordance with the requirements of Section 2.9 of this document.

1.8.5 Environmental Sensitivities and Safety Aspects

Shoreline Substrate Classification

The shoreline of Roberts Bay has been extensively classified with respect to substrate type, allowing identification of areas sensitive from a fish habitat and environmental sensitivity perspective. The detailed classification also supports efforts under the Arctic Shoreline Clean-up Assessment Technique (SCAT) Manual. Refer to the Figure in Schedule 2b Roberts Bay Shoreline Types (Substrate Typing for SCAT).

Cultural Heritage

Roberts Bay is rich in cultural heritage, with evidence of a long history of Inuit use of the area. All areas along the shoreline are classified as sensitive in terms of the need to protect and preserve archaeological sites. Any work needing to be performed above the High Water Mark of the shoreline of Roberts Bay, needs to be cleared by the site Archaeologist in advance, and in the event of an Incident or Response, every effort must be made not to damage these important resources. The site Archaeologist will be kept apprised of any shoreline activities in the event of an emergency requiring access to the land.

Wildlife

Wildlife is active in the area during the period of the transfer and workers performing 24 hour monitoring duties are subject to encounters with animals. Wildlife in the vicinity of the OHF includes raptors, migratory birds, sic sic (ground squirrel), wolverine and occasionally, grizzly bear. Preventative measures for potentially dangerous encounters are employed to ensure worker safety through an established wildlife notification and deterrent training program, and emergency protocols are outlined in the *Hope Bay Emergency Response Plan*. Agnico Eagle Mining Ltd. has placed on stand-by Focus Wildlife, Surrey, BC to respond to any required rescue and rehabilitation of wildlife during the fuel transfer.

Migratory Birds

Roberts Bay lies along a migratory flight path for birds that spend summers in the Arctic. In the event of any incident involving migratory birds interacting with a spill of product under transfer at the OHF, hazing, through the use of noisemakers and visual deterrents will be used to prevent wildlife impacts in the event of a spill. Canadian Wildlife Services' "Oiled Bird Response Guidance Plan" is included at Schedule 13, and any required handling permits would be obtained. As outlined in Section 3.5.2, external resources will be consulted or retained as required to ensure protection of sensitive areas and species, to minimize the impact of a potential spill.

Fisheries and Aquatic Resources

Several streams flow into Roberts Bay and of significance is Little Roberts Creek outflow on the eastern side of the bay, which supports a prominent Arctic Char run during late summer. On the southwestern side of the bay is the outflow from Glenn Lake, which supports an anadromous

Lake Trout population. These stream outflow locations are depicted on the Figure in Schedule 2d.

In addition, in Roberts Bay directly to the south west of the jetty, are a series of submerged fisheries compensations shoals. The shoals were constructed in accordance with a Navigable Waters Protection Act authorization, and are depicted on recent versions of Canadian Hydrographic Service marine chart 7790 for Melville Sound. A Sensitive Areas diagram in Schedule 2c also shows the locations of the four shoals. In advance of seasonal marine activities in Roberts Bay, a white buoy will be placed at their north-east corner to mark the position of the shoals to aid vessel navigation in proximity to the jetty.

Management of Product-Contaminated Materials

In the event of a spill where significant quantities of contaminated wastes are generated, waste management facility personnel from the Roberts Bay Waste Management Facility will be enlisted to manage the waste stream. The waste stream management strategy will account for collection, temporary contained storage, transport and approved disposal of contaminated solids and liquids, in addition to disposal of any non-contaminated wastes generated during a response. Decontamination of equipment and personnel will be handled in a manner that strictly controls the spread of any spilled product outside the immediate area of impact. Handling of all materials at the waste management facility is managed under the approved Hope Bay Non-Hazardous Waste Management Plan and Hazardous Waste Management Plan following all inter-provincial disposal and transfer requirements where applicable. The primary focus during management of contaminated wastes will be personnel safety and protection of the environment during clean-up activities.

1.8.6 Description of Fuel Transfer System and Components

What follows provides a general overview of the fuel transfer system components and operational fuel transfer plan. Parts of the sequence below will be repeated as often as required (multiple barge fuel load transfers).

- Fuel tanker anchored in Roberts Bay
- Tug/barge operator maneuvers barge alongside tanker
- Fuel load transferred from tanker to barge
- Tug moves loaded barge to jetty
- Tug moors barge at Agnico Eagle Roberts Bay OHF jetty (secured to moorings and/or held in place by tug)
- Containment booms installed between fuel barge unloading side and jetty end and containing any fuel hose(s). This may or may not include a spacer barge.
 - Fathom Marine and Agnico Eagle perform site survey to confirm status
- Offload transfer equipment (may require crane/boom truck assistance)

- Sufficient hose sections to connect farthest tank to be loaded at tank farm to barge at end of jetty
- Sufficient drip containment tubs for each hose connection on shore (supplied by Fathom Marine)
- Appropriate adaptors, connections and hose caps/plugs to be on hand
- Additional items if needed as discovered through site survey
- Set up shore-side hoses
 - Connect hose lengths from barge pump to shore tanks (shore truck to assist hose transport and placement)
 - Lock all hose connections with cam-lock straps or equivalent
 - Place drip containment tub under each hose connection point
 - Install adaptors to tank connection
 - Connect tank and pump with hose
 - Place drip containment tub under each connection point at pump or tank as needed
 - Install troughs with drip trays at each end to carry hoses over any open water sections at jetty
- Set up Barge Containment
 - Deploy and secure containment booms between fuel barge and jetty end
 - Work boat to deploy containment boom and secure, as required, with anchors and hull magnets
 - Supplier to pressure test system to ensure its integrity. Ensure no unauthorized personnel in close proximity to any part of system during the pressure test.
- Pre Transfer Conference
 - Review of shore preparations, including Pre-transfer Equipment Checklist
 - The Agnico Eagle Oil Transfer Supervisor and Fuel Suppliers' Supervisor familiarize each other with specifics of facilities, equipment and procedures
 - Suppliers and Agnico Eagle to agree communication protocols, emergency response protocols and roles
 - Supplier and Agnico Eagle to walk hose line for final visual inspection
- Transfer of Product
 - Barge load quantity to be confirmed by Agnico Eagle OHF Supervisor or delegate prior to commencement of discharge
 - AWOT Transfer Particulars documentation completed
 - Transfer is to start at a slow speed
 - Confirm receipt of product
 - Confirm all connections are secure and leak free
 - Slowly increase transfer rate checking all connections with each increase
 - Maximum discharge pressure is 150 psi at the pump manifold

Regular, scheduled visual inspection of all connections throughout entire transfer and one circumnavigation of tank on foot by Tank Valve Monitor 30 minutes after commencement of tank loading and hourly thereafter with a report on status to Command Post/Supervisor.

- End Transfer of product
 - Barge pump operator to give 1 hour warning of transfer stop
 - Transfer rate to be reduced for topping off tank(s)
- Clearing of lines
 - Push all product remaining in hose assemblies into tankage
 - Multiple pigs may need to be sent to ensure all product is removed from hose assemblies
- Cargo Measurement
 - Supplier (or independent surveyor) to witness and verify shore tank measurement
 - Agnico Eagle (or independent surveyor) to witness and verify barge measurements
 - Supplier and Agnico Eagle to discuss any volume discrepancy above 0.5% difference between shore and barge figures
- Disconnect Floating Containment
 - Work boat to remove boom anchors, if installed, and hull magnets
 - Work boat to remove containment boom
- Disconnecting hose
 - Hoses are disconnected over containment trays and capped/plugged
 - Hoses are moved to next tank, or
 - Returned to barge or storage

Mooring configurations for barges at the tanker and jetty may be found in Schedule 8b of this document.

The planned pipeline routing is superimposed on the photograph below. The two pipelines will run from the barge at the jetty to the four tanks (3 x 5 million litre diesel and 1 x 400,000 litre Jet Fuel tank) in the Jetty Tank Farm. When those tanks are loaded the two hoses will be converted to one hose that will be moved to the north side of the jetty road and continue to Tank #1, the original 5 million litre tank, and it will then be loaded.



Figure 3 Fuel Transfer Pipeline Routing Looking West

(Note: Jet Fuel tank is now relocated in the tank bay to the left of the indicted pipeline routing)

1.8.7 Seasonal Transfer Timing

Fuel transfers at the Roberts Bay OHF occur during the open water season when the route between Tuktoyaktuk, Northwest Territories, and Roberts Bay is relatively ice free. This generally occurs by the second week of August; with the Dolphin/Union Strait typically being the last area to clear enough for marine traffic.

Specific details and timing schedules are provided in the Annual Fuel Transfer Plan described in Section 2.2.

2 Oil Pollution Prevention

2.1 Introduction

The objective of this OPPP is to prevent discharges into the marine and shore environments by requiring Agnico Eagle and its fuel contractors to be intentional in determining the risk to the environment from their activities and in taking measures to effectively eliminate the risk. This OPPP targets prevention of pollution associated with the following activities:

- anchoring;
- berthing and un-berthing of vessels;

- communications;
- transferring oil in bulk between vessels and from a vessel to shore;
- maintaining vessels on the berth;
- emergency procedures; and
- maintaining critical equipment (including equipment certifications).

The desired result is continuous improvement towards eliminating discharge of oil into the marine, or any other, environment.

2.2 Annual Fuel Transfer Plan

The Annual Fuel Transfer Plan documents the specific activities, timing and responsibilities pertaining to a fuel transfer in any given year. It identifies the inter-company contact information and documentation, and confirms particulars pertaining to the fuel suppliers, vessels, barges and spill response equipment. The plan summarizes the fuel transfer operation between Agnico Eagle and the Suppliers' and is intended to conform to the latest government regulatory requirements.

Critical to the Fuel Transfer Plan are the specific procedures for preventing fuel spills and other incidents and responding to emergencies should they arise. The plan is intended to complement existing emergency response plans, management systems, equipment and resources of Agnico Eagle at Hope Bay; complemented by the standard emergency response procedures of the Suppliers' tanker, barges and/or tug(s) utilized for the fuel transfer operation.

The Annual Fuel Transfer Plan is provided in Schedule 8. The emergency response plan specific to fuel transfer operations is provided in Section 3.0.

2.3 Annual Risk Assessment Review for Bulk Fuel Transfers

Prior to bulk fuel transfers, Agnico Eagle conducts a cross-functional risk assessment review session to identify the risks associated with the fuel transfer operation (such as environmental and worker hazards) and devises means of mitigating risks. A fuel supplier representative participates in this review. Each step in the fuel transfer operation is carefully examined and existing operational controls are evaluated for effectiveness. Modifications to existing controls may be performed at this time, and new controls developed where deficiencies are identified. This review process also serves to familiarize the fuel supplier with the Roberts Bay OHF facility and personnel. A record of the risk assessment review process and any associated corrective actions generated is maintained in a formal Risk Register and Corrective Action Register maintained by Agnico Eagle Site Operations Management.

An updated copy of the Annual Risk Assessment Review is provided in Schedule 9. A regularly sized copy is available from Agnico Eagle, upon request.

2.4 Roles and Responsibilities

Agnico Eagle and the Fuel Suppliers are jointly responsible for successfully transferring the prescribed volume of bulk fuel.

Each Chief Officer, or qualified designate is in charge of the fuel transfer operation on that company's vessel/barges; effectively the on-board Supervisor of Oil Transfer Operations (SOTO).

Agnico Eagle's Oil Transfer Supervisor is the shore representative responsible at the Roberts Bay OHF for ensuring preparations and adequate resources are available, and for signing off on the commencement of the fuel transfer operation. As the OHF facility operator, Agnico Eagle provides support in the form of pre-fuel transfer preparations and verifications, including gauging shore and barge tanks, providing equipment and personnel to assist the fuel transfer in the form of trained tank/valve/hose/pipeline monitors, stand-by equipment operators, by restricting activities in the fuel transfer area, and providing emergency response personnel and equipment. In the event of an oil handling emergency, Agnico Eagle will also assist by activating its internal emergency response plans, management systems, equipment and personnel, and with notifying of regulatory agencies, where required and as needed.

Emergency response pertaining to the bulk fuel transfer is a coordinated responsibility between the Suppliers and Agnico Eagle. However, in the event of a fuel spill during transfer, the Responsible Party would direct the response under their SOPEP/OPEP, and through the designated Agnico Eagle Incident Commander or Deputy Incident Commander if other than Agnico Eagle. Agnico Eagle would support the Responsible Party by providing shore-side response coordination and ensuring the procedures contained in the OPEP are implemented.

2.4.1 Specific Duties of the Fuel Suppliers

The Fuel Supplier(s) must ensure they are fully knowledgeable of the Roberts Bay area with respect to the geographical position of the Roberts Bay jetty, transfer site, underwater habitat compensation structures and other navigational hazards.

The Fuel Suppliers' vessel Captains are responsible to ensure that fuel transfer vessels and barges are well secured when anchored/moored and to inform the Agnico Eagle Oil Transfer Supervisor of any issues that might negatively affect the fuel transfer process with respect to anchoring, berthing and un-berthing of the vessels.

The Fuel Suppliers are responsible to inform Transport Canada, Prairie and Northern Region, Marine, via NORDREG, or the nearest CCG Radio Station of the intended nature and duration of transfer, 48 hours prior to the start of transfer operations, or as practicable, in sufficient time that would allow a Marine Safety Inspector to arrive at the site and witness the transfer. (The

Agnico Eagle OHF operator will assist with logistics, site access and accommodation for the Marine Safety Inspector, as needed).

The tug/barge operator will appoint an appropriate, qualified supervisor (SOTO) to oversee the transfer and maintain constant communication with the shore representative (OHF Oil Transfer Supervisor) for the duration of all transfer activities.

2.4.2 Specific Duties of OHF Oil Transfer Supervisor

The Agnico Eagle Oil Transfer Supervisor (or qualified designate) will ensure that:

- the vessel(s) at the jetty is/are secured, having regard to the weather and the tidal and current conditions, and that the mooring lines are tended so that the movement of the vessel does not damage the transfer conduit or its connections;
- loading or unloading procedures are established with the concurrence of the supervisor of the loading or unloading on board the barge (SOTO) with respect to:
 - i. the rates of flow and pressures for the transferred liquid;
 - ii. the reduction of rates of flow and pressures, where required to avoid an overflow of the tanks;
 - iii. the time required to stop the loading or unloading under normal conditions;
 - iv. the time required to shut down the loading or unloading under emergency conditions;
 - v. the communication signals for the loading or unloading, including:
 - a. stand by to start loading or unloading;
 - b. start loading or unloading;
 - c. slow down loading or unloading;
 - d. stand by to stop loading or unloading;
 - e. stop loading or unloading;
 - f. emergency stop of loading or unloading; and
 - g. emergency shutdown of loading or unloading.
- the supervisor of the loading or unloading on board the vessel has reported readiness for the commencement of the loading or unloading;
- the Agnico Eagle Oil Transfer Supervisor and all participants are fully conversant with the communication signals, maintain watch over the oil handling facility's tanks to ensure that they do not overflow and maintains continuous communication with the supervisor of the loading or unloading on board the vessel;
- the manifold valves and tank valves of the oil handling facility are not closed until the relevant pumps are stopped;
- the rate of flow is reduced when topping off the tanks;

- the supervisor of loading or unloading of the vessel is given sufficient notice of the stopping of the loading or unloading to permit him/her to take the necessary action to reduce the rate of flow or pressure in a safe and efficient manner;
- the following measures are taken to prevent the discharge of oil on board the vessel:
 - i. all cargo and bunker manifold connections that are not being used in the loading or unloading are securely closed and fitted with blank flanges or other equivalent means of closure;
 - ii. all overboard discharge valves are securely closed and marked to indicate that they are not to be opened during the transfer operation.
- all transfer conduits that are used in the loading or unloading are supported to prevent the conduits and their connections from being subjected to any strain that might cause damage to them or cause the conduits to become disconnected;
- all reasonable precautions are taken to avoid the discharge of oil;
- the supervisor on board the vessel and the Agnico Eagle Oil Transfer Supervisor are present and competent in the loading or unloading of oil to or from a vessel; and
- a sufficient number of persons are on duty at the OHF and on board the vessels during the loading or unloading.

2.4.3 Fuel Transfer Team Members

The table below identifies the specific roles required to execute the Fuel Transfer Plan. Sufficient personnel will be assigned to cover required shifts for the duration of fuel transfer operations. There will also be stand-by positions and emergency response positions.

Table 2 Fuel Transfer Team Members

	<u>Fuel Supplier</u>	<u>Agnico Eagle</u>
Supervisors	- SOTO/Fathom Marine Supervisor	- OHF Oil Transfer Supervisor
Documentation	- First Mate or designate	OHF Oil Transfer Supervisor (or designate)
Operators	- Certified Pump Man - Gauger/Sounder	- Tank/Valve/Volume Monitor (1 per shift)
Others	- Tug Crew (as needed)	- Line Walkers (2 per shift) - Support (as needed) Traffic Control (as needed) - Shift Supervisor - Agnico Eagle Spill Preparedness and Response Coordinator

2.5 Spill Prevention Training

2.5.1 Specific Training

The Agnico Eagle OHF Oil Transfer Supervisor, and any cross-shift alternate as designated, will be qualified in or undertake on-site training equivalent to the Marine Spill Response Operations Course (MSROC), to permit them to co-ordinate and supervise the operational response to a marine oil spill incident. The Fuel Suppliers' shipboard personnel responsible for supervising the transfer will be appropriately qualified to perform the role as Supervisor of Oil Transfer Operations (SOTO). Other personnel involved in transfer operations undertake a site-specific spill training course designed to respond to or support response to a spill at the Roberts Bay OHF or into Roberts Bay.

Small vessel operators involved in boom deployment or other vessel operations in the marine environment will hold a valid Pleasure Craft Operator Card (PCOC) issued by Transport Canada or an acceptable equivalent marine certification.

2.5.2 General Training

All regular and temporary staff involved with fuel transfer operations undergo a formal review and sign-off of the Roberts Bay OHF Bulk Fuel Transfer Procedure detailing the entire transfer process from pre-transfer preparations to completion of transfer, including monitoring requirements of all tanks/pumps/valves/lines, standardized radio communications on a dedicated channel with back-up emergency air horn signals, stand-by positions and qualified equipment operations, and emergency signaling (shut down/stop transfer). At pre-transfer briefing meetings, specific tasks are designated and roles and responsibilities are assigned to provide continuous personnel coverage for all tasks across shift changes and over the entire transfer period. A record of the task assignments is kept on the responsibilities schedule associated with the procedures. A copy of the Roberts Bay OHF Bulk Fuel Transfer Procedure is provided as Schedule 1.

Site safety is addressed through a formal risk assessment review process conducted each year by the site management team in conjunction with the contractor(s) to identify and mitigate any environmental or worker hazards associated with the transfer. Results of this assessment and corrective/preventative actions are documented in a risk register that is specific to the bulk fuel transfer and the register is maintained on file and a size reduced copy is provided as Schedule 9. A regular sized copy is available from Agnico Eagle, upon request.

All site staff are required to be trained in WHMIS 2015/GHS and in the first responder actions contained in the Hope Bay Emergency Response Plan, and the OPEP which includes emergency actions and notifications for spills. The relevant /SDS for the transfer products are reviewed with the Fuel Transfer Team members and appropriate PPE is provided. (Copies of any relevant /SDS

are included in Schedule 11). PPE is also issued for extreme weather conditions, working around water, night work and wildlife deterrence.

Formal spill training at site conducted by a reputable trainer includes containment boom placement strategies dependent on weather condition variation and foreshore topography at the transfer location. Boom deployment exercises are conducted in summer season with responders not already holding current qualifications to ensure all vessels are operational, and equipment is appropriate, adequate and functioning.



Figure 4 Boom Deployment Exercise in Roberts Bay

Agnico Eagle will retain all records of training required under this Plan. Training records are available for review by Transport Canada, upon request. See Schedule 7 for details of the last 3 years training. Records prior to that are retained at Hope Bay.

2.6 Fuel Transfer Areas Preparation

The following activities take place leading up the fuel transfer operation:

- Assessment of the risks facing the operation.
- Appropriate formal training of relevant personnel
- Maintenance of response equipment
- Preparation of the fuel transfer area and the shore tanks.
- Activation of the Sea-lift Command Centre at Roberts Bay laydown

- Transporting the fuel transfer components to Agnico Eagle project site
- Establishment and testing of communication procedures for the operation.
- Allocation of trained/qualified people and equipment to specific operational roles.
- Monitor weather and tide conditions.
- Conduct pre-transfer briefing meetings

Specific shore preparations are undertaken by OHF personnel in accordance with the Roberts Bay OHF Bulk Fuel Transfer Procedure (Schedule 1).

In addition to the equipment, tools and material required to connect and disconnect the fuel transfer conduit, monitor the fuel transfer components during the operation and measure the volume of fuel transferred, there will be tested fire-fighting equipment (fire extinguishers, fire caddy, etc.) and spill response (anti-pollution) equipment and material in close proximity to the jetty, transfer hose and shore tank(s). The Spill Response Equipment sea cans will be inventoried and heavy equipment staged in preparation for the fuel transfer.

Finally, because other activities occur in the general vicinity of the Roberts Bay OHF, traffic will be restricted from the fuel transfer area close to hoses, fittings, valves, etc., and any tripping hazards will be removed. No hot works are permitted in the area during the fuel transfer operation. Smoking will be restricted to the identified "Smoking Areas".

Verification of transfer area preparations is documented on the Bulk Fuel Transfer Sequencing Checklist found in Schedule 1c.

2.7 Fuel Transfer Components Procurement

The equipment, including backup equipment, required to transfer fuel is specified in the Annual Fuel Transfer Plan. The fuel Suppliers' will transport the components to the Roberts Bay OHF, as needed. All of the fuel transfer components will have been verified and certified for their intended purpose.

2.8 Fuel Transfer Equipment for Transferring Fuel between Fuel Supplier and OHF

Listed below is the standard equipment required to transfer fuel between the Fuel Supplier and the Roberts Bay OHF shore tanks:

- Shore Tank Manifold
- Pig Receiving Unit (ball valve on each side)
- Adequate number of tested/certified sections of 4" diameter transfer hose* with Camlock fittings/ 6 ply tested to 225 lbs psi and certified to 150 lbs psi to cover fuel transfer between barge and shore tanks, with replacement sections in case needed
- Barge Tank Manifold

- Pig Launching Unit and pigs

**Agnico Eagle will retain verification of hydrostatic hose tests which have been conducted in accordance with manufacturer's specifications.*

2.9 Transfer Area Lighting

Where transfer operations takes place between sunset and sunrise, the Roberts Bay OHF will provide illumination that has:

- i) At each transfer connection point at the OHF, a lighting intensity of not less than 54 lux; and
- ii) At each transfer operation work area around each transfer connection point at the OHF, a lighting intensity of not less than 11 lux.
- iii) The lighting intensity shall be that measured on a horizontal plane 1 metre above the walking surface in the case of an OHF.

Light plants are positioned along the route of the transfer conduits between the jetty and the OHF storage tank facility. Lighting intensity is established by the light plant manufacturer. Light plants will come in two and four bulb configurations. At Hope Bay, each light contains a 1000 watt bulb which equates to 96000 lumen (1 lumen = 1 lux).

All staff involved with the transfer are also provided 6V hand lanterns and/or hard hat headlamps for personal illumination.

2.9 Staging of Spill Response Equipment

Located in a series of sea cans positioned at the shore end of the Roberts Bay OHF jetty, is a cache of emergency spill response equipment sufficient to handle spills of worst-case anticipated volumes as described in the scenarios section of this plan. The scenarios are intended to identify areas of risk associated with the transfer and prepare Agnico Eagle to handle the possible spill occurrences related to those risks.

In addition, a supply of absorbent material, PPE, air horn and fire extinguisher is readily available near every transfer conduit connection or at regular intervals along the length of the transfer hose/pipeline to facilitate the prompt and effective response and clean-up of any minor spillage of oil that may occur at the OHF along the transfer conduit.

Heavy equipment with qualified and authorized operators is made available for deployment during the transfer.

2.10 Equipment and Personnel Allocation

Specific equipment and supplies to support the fuel transfer are arranged in advance and staged as required adjacent to the jetty and at the Roberts Bay OHF laydown. Schedule 1a contains the Pre-Transfer Equipment Requirement Checklist utilized to verify equipment is in place prior to the transfer.

Section 2.4.3 identifies the Fuel Transfer Team Members and number of personnel required per shift to transfer fuel between the fuel supplier and the OHF. The fuel supplier and Agnico Eagle will identify the individuals that will fill each designated position and ensure that each individual is qualified to execute the Fuel Transfer Plan; training will be arranged, as required. Personnel allocation is scheduled and managed through the Assigned Roles and Responsibilities List (Schedule 1b) to ensure each shift is adequately staffed for the duration of each transfer.

2.11 Designated Stand-by Personnel

In addition to regular trained staff involved with the transfer, specialized stand-by personnel are readied for deployment with appropriate equipment as needed ie: heavy equipment and vacuum truck operators. These stand-by personnel also include members of the site Emergency Response Team (ERT) as designated under the Hope Bay Emergency Response Plan and include trained spill responders, trained firearms handlers and medical personnel.

2.12 Transfer Hose Placement

- The OHF Oil Transfer Supervisor and fuel supplier supervisor will walk the transfer hose route between the barge and tanks to ensure its suitability for the transfer.
- If an alternate route proposed by the supplier (other than the route proposed by Agnico Eagle) runs along the road, the hose will be protected with pylons and only authorized traffic shall be permitted. In the event such traffic control is required Agnico Eagle shall provide trained Flag Persons at each end of the route to ensure the safe flow of traffic. They will communicate via radio on an agreed-upon channel.
- Agnico Eagle OHF personnel will clear the best transfer hose route of any sharp objects that would chafe the hose, and the hose must follow a clear, unobstructed path. Hose bridges will be installed to permit vehicular access across the hoses for light vehicles accessing the response equipment containers.
- The OHF Oil Transfer Supervisor and fuel supplier supervisor will inspect the pressure-tested and certified fuel transfer hoses. Each hose section is marked with the annual inspection date of testing to 1.5 times the pressure rating of the hose, or current documentation of same testing will be provided for each section of hose to be used in the fuel transfer.
- All hose couplings will be securely closed and locked and verified on documentation in OHF transfer procedures prior to fuel transfer. Camlock couplings will be utilized in

conjunction with the above, along with whip checks at each connection. Drip trays will be placed under couplings for extra protection. Trays will be lined with sorbent pads and caches of sorbent spill pads will be placed strategically along the hose line for quick access.

- Hose troughs will be used to carry the fuel hoses over any gaps between barge(s) and barge and jetty.

2.13 Grounding for Management of Static Electricity

- The OHF Fuel Tanks are grounded as per engineered drawings.
- The fuel transfer hoses are inherently grounded.
- Fuel supplier procedures include identified means to reduce or eliminate static charge to ensure the safety of the process ie: slow start to pumping.

2.14 Pre-Transfer Briefing Meeting

A pre-transfer briefing meeting will be conducted. The intention of the meeting will be to:

- undergo a review and sign-off of the procedures detailing the entire fuel transfer operation from pre-transfer preparations to completion of transfer,
- assign roles and responsibilities to provide continuous personnel coverage for all tasks across shift changes and over the entire fuel transfer period,
- designate specific tasks,
- agree on warning signals (radio and back-up) for emergency shutdown,
- agree on safety procedures,
- agree on the volume of fuel to be transferred to each tank during the overall operation and in each barge load, and
- agree on the readiness to start the fuel transfer operation and approve the commencement of the operation (each fuel transfer event is also to be approved)

2.14.1 Provisional Fuel Transfer Quantities

The provisional plan is to transfer quantities of fuel, as follows:

Transfer 1 = 1,860,000 litres from Tanker to Deh Cho Barge #1

Transfer 2 = 1,860,000 litres from Deh Cho Barge #1 to Agnico Eagle Shore Tanks

Transfer 3 = 1,860,000 litres from Tanker to Deh Cho Barge #2

Transfer 4 = 1,860,000 litres from Deh Cho Barge #2 to Agnico Eagle Shore Tanks

Transfer 5 = 1,860,000 litres from Tanker to Deh Cho Barge #1

Transfer 6 = 1,860,000 litres from Deh Cho Barge #1 to Agnico Eagle Shore Tanks

Transfer 7 = 1,860,000 litres from Tanker to Deh Cho Barge #2

Transfer 8 = 1,860,000 litres from Deh Cho Barge #2 to Agnico Eagle Shore Tanks
Transfer 9 = 1,860,000 litres from Tanker to Deh Cho Barge #1
Transfer 10 = 1,860,000 litres from Deh Cho Barge #1 to Agnico Eagle Shore Tanks
Transfer 11 = 1,860,000 litres from Tanker to Deh Cho Barge #2
Transfer 12 = 1,860,000 litres from Deh Cho Barge #2 to Agnico Eagle Shore Tanks
Transfer 13 = 1,860,000 litres from Tanker to Deh Cho Barge #1
Transfer 14 = 1,860,000 litres from Deh Cho Barge #1 to Agnico Eagle Shore Tanks
Transfer 15 = 1,860,000 litres from Tanker to Deh Cho Barge #2
Transfer 16 = 1,860,000 litres from Deh Cho Barge #2 to Agnico Eagle Shore Tanks
Transfer 17 = 120,000 liters from Tanker to Deh Cho Barge # 1
Transfer 18 = 120,000 liters from Deh Cho Barge # 1 to Shore Tanks.

Total Fuel Transferred Tanker to Agnico Eagle Tanks 15,000,000 litres

2.15 Pre-Transfer Barge Booming

As a matter of standard practice and as a preventative measure, the area of the fuel barge with a high potential for allowing a spill to reach the sea will be pre-boomed at the jetty transfer location by enclosing it with a floating spill containment boom. This is a precautionary measure during transfer to ensure containment objectives can be met in response to a potential oil transfer spill incident.

In addition, a small list or trim towards the boomed containment area may be induced on the fuel barge.

Additional containment boom will be immediately available to be deployed as necessary as secondary containment.

See Schedule 8b for barge mooring/booming configurations.

2.16 Communications and Emergency Stop Transfer

The fuel supplier supervisor and Agnico Eagle OHF Oil Transfer Supervisor will meet prior to transfer to review the roles, responsibilities and pumping procedures. Warning signals and safety procedures are to be agreed upon by both parties.

Two-way radio (voice) communication will be discussed and coordinated as to the radio systems (Agnico Eagle & Marine VHF) and the channels to be used. The Agnico Eagle radio system in use at the OHF has full break-in capability using specified broadcast and emergency communications channels. Each radio is to be tested prior to being put into use. Two-way voice communications will be maintained throughout the transfer. Back-up emergency air horn signals will be agreed upon.

All workers participating in the transfer process will be given a quick reference sheet for regular call signs, frequency and emergency communications.

As a precaution, in the unlikely event of radio communication failure of both Agnico Eagle and Marine VHF, OHF personnel will be instructed in the use of and follow the fuel contractor manual air horn/ship's whistle signals. Each shift that is involved with the fuel transfer process will be trained in two-way radio communication, air horn/ship's whistle communication and all emergency communications with the fuel delivery contractor before going on shift.

The horn signal/ ship's whistle system training must include signals for at least the following situation:

Emergency Stop Transfer- Repeated Short Blasts on Air Horn

Pumpman will acknowledge receipt with one long blast and commence transfer system shut-down sequence.

Transfer shall not recommence until radio contact has been reestablished and the fuel transfer system status has been confirmed as operational by both Agnico Eagle and supplier's supervisors.

2.17 Delay, Cancel or Emergency Shut-down Conditions

Conditions that will prevent or shut down fueling should be agreed to between the fuel supplier and the OHF Oil Transfer Supervisor. Fuel transfer will not proceed or will be shut down when:

- Two-Way (Ship-Shore) Voice Communications are lost
- When an electrical storm is present or predicted for the area
- Fire occurs
- A leak or spill occurs of any appreciable size (system failure, tank overflow, etc.)
- A tangible threat of leak or spill occurs, including damage to hoses or couplings
- Conditions develop that jeopardize the mooring of the barge to the tanker or jetty i.e.: increase in wind or swells
- Any compromise of the fuel transfer line, or ability to monitor the line is lost
- Other possible issues of human safety or environmental concern (dangerous wildlife encounter, severe deterioration in visibility conditions)
- Any condition deemed dangerous by either the OHF or Supplier's Oil Transfer Supervisor.

2.18 Weather Conditions

Both Agnico Eagle and the fuel supplier will obtain detailed forecasts of weather conditions in and around Roberts Bay and in the overall Coronation Gulf/Melville Sound region in order to assess the implications to the fuel transfer operation. Communications between the two parties will entail specifying the minimum weather conditions required for transferring fuel and

determine the decision-making protocol; the individuals who decide to commence transferring fuel (typically the Onboard and Onshore Supervisors) and the individuals who can shut down the fuel transfer operation due to severe weather.

2.19 Personnel Safety

Pre-shift meetings will be held with all members of the Fuel Transfer Team; multiple shifts will be involved to cover the entire transfer process.

As the barge fueling procedure may require long periods of monitoring, all personnel will be dressed in appropriate clothing for the weather conditions. Appropriate PPE will be worn or carried.

The tank valve monitor will not be able to leave his post without someone relieving him/her. (Coffee, snacks and a warm refuge will be available at the nearby Sealift Command Post).

During the night shift, personnel will have flashlights/6V hand lanterns/headlamps and light plants will be placed in strategic locations to adequately illuminate the work area.

Workers should be familiar with their surroundings and perform an inspection of the whole area prior to nightfall to ensure any potential tripping hazards are removed.

Bear kits (excluding pistol type deterrent as it may spark) will be provided for all hose monitor teams with air horns, bear spray and non-flare bear bangers. In the event of a wildlife emergency requiring intervention with a firearm, a licensed, pre-designated standby Wildlife Response Team member will be deployed.

2.20 Transfer Operations

2.20.1 Immediately Prior to Fuel Transfer

Upon arrival, a fuel barge will be moored at the jetty and containment booms installed. The pre-laid fuel transfer hose/conduits will be attached to the manifold on the barge and the shore tank, and the fuel transfer components will be carefully inspected. In addition, the volume of fuel in the barge and the shore tank will be verified as part of the process for determining the volume of fuel transferred during the event. Provided below is a listing of the activities and actions that will take place immediately prior to fuel being transferred.

Marine Activities:

- Ensure that the barge is securely moored at the jetty.
- Install the containment booms/anchors per booming plan.
- Ensure that the emergency towing-off pennants are correctly rigged and positioned.

Fuel Transfer Components Installation:

- The 6" valve on the barge is to be in the closed and locked position. All other barge manifold connections are to be closed, locked and blind flanged.
- Attach the upstream adaptor (4" ball valve/4" female Camlock fitting) to the 6" fitting on the barge manifold. Prepare the fuel transfer conduit comprised of 4-inch diameter, 6-ply hose sections and the downstream adaptor (4" male Camlock fitting/4" ball valve/4" male Camlock fitting). Wire or equivalently secure shut all couplings.
- Attach the fuel transfer conduit to the upstream adaptor connected to the large manifold.
- The valve on the shore tank is to be in the closed and locked position. Attach the fuel transfer conduits to the valves of the shore tanks. All other shore tank manifold connections are to be closed, locked and blind flanged.
- Deploy the appropriate pollution prevention equipment; namely, place spill pads on the barge deck at the pump, an empty drip tray under each coupling and an empty drip tray at the junction of the fuel transfer conduit and the shore tank inflow valve. Install hose troughs with a drip tray at each end at any point a hose is to cross water; between barges and cross barge(s) - jetty gap(s).

Fuel Transfer Components Inspection:

- Inspect each fuel transfer component; hose sections, couplings between the pump and the fuel transfer conduits, etc.
- Verify that each hose section has been certified.
- Ensure that the fuel transfer conduits are connected to the correct couplings.
 - Inspect the bolts on the barge flanges to verify the line markings indicating that bolts are tight.
 - Ensure that the pressure gauge(s) are ready and in place.
 - Ensure that all sea valves on the barge's cargo systems are closed.
 - Ensure that all tank vents are free of blockage.
 - Check the pressure/vacuum relief valves.
 - Test the pump in idle pressure.
 - Pressure test hose pipeline(s) with compressed air
 - Test the Transfer Emergency Shutdown.

Fuel Volume Verification:

- Dip/gauge each of the barge's tanks and record the information in the log book and on the Voyage Order Documents; ensure that there is no water contamination.
- Dip/gauge the shore tank and record the information in the log book and on the Voyage Order Document sheets. Also measure the temperature of the fuel in the shore tank.
- Agree on the volume of fuel that will be transferred from the barge to the shore tank.

Pumping Procedures:

- Agree on the initial, average and maximum allowable pumping rates. The maximum discharge pressure is 116 psi or 8 bar.
- Agree on the procedure for topping up the tank(s).
- Confirm the notice required to stop the fuel transfer.
- Agree on the approach for draining the fuel transfer conduit. This activity will take place after the transfer is complete.
- Agree on the emergency shutdown procedures

Personnel and Communication:

- Ensure that a designated person in charge (a qualified Oil Transfer Supervisor) will be on duty at all times during the operation.
- Ensure that there will be sufficient personnel available at all times to monitor the fuel transfer operation, tend the fuel transfer conduit and mooring lines, and take appropriate action in the event of an emergency; in particular, place people to operate the pump, monitor the barge manifold, monitor the shore tank valves and the filling of the shore tank and monitor the couplings.
- Ensure that there is a clear understanding of the watch and shift arrangement.
- Ensure that the primary and secondary communication systems are operational.
- Ensure that all on-site personnel understand the signals (visual and otherwise) for emergency shutdown.

Ensure that the spill reporting procedures are understood by all on-site personnel and that there is unimpeded access to all pre-positioned response equipment/consumables.

2.20.2 Decision to Commence Transfer

When all preparedness has been completed and signed off, the transfer is permitted to commence under the joint authority and direction of the fuel supplier Supervisor of Oil Transfer Operations/Agnico Eagle OHF Oil Transfer Supervisor.

- Review and approve Arctic Waters Oil Transfer (AWOT) - Transfer Particulars sheet.

Exceptions: Inclement weather may delay commencement of transferring fuel if conditions exist that increase the risk of spill to the environment to an unacceptable level. The decision to delay will be made by the Fuel Supplier Captain/SOTO or the Agnico Eagle OHF Oil Transfer Supervisor.

When both parties are in agreement to commence, specific requirements that are to take place throughout the transfer are outlined below.

2.20.3 General Requirements

- Agnico Eagle shall ensure that there is a person at the facility who is capable of supervising the transfer operation for the facility (e.g. the Agnico Eagle OHF Oil Transfer Supervisor).
- The Agnico Eagle OHF Oil Transfer Supervisor shall ensure that the critical equipment used in the transfer operations is maintained and certified as per manufacturer's specifications.
- If the Agnico Eagle OHF Oil Transfer Supervisor is satisfied that pumping can begin, the valve at the tank transfer point is unlocked and opened at the direction of the Agnico Eagle OHF Oil Transfer Supervisor by the OHF position designate (Tank Valve Monitor) who remains at the tank and monitors filling. The Tank Valve Monitor is in contact by radio with the Barge Pump Man, Command and the Hose Line Monitors on the radio channel designated for the transfer. The Tank Valve Monitor is responsible to shut off the valve if a leak develops but only as directed by the Barge Pump Man.
- Discharge will begin at a slow rate to allow checks along the length of the hose, hose connections and at any pump for leaks, and to reduce build-up of static electricity.
- The pump vacuum gauge is monitored by the barge pumpman until conditions indicate that transfer speed can be increased.
- Rate of flow should remain constant to prevent surges.

2.20.4 During Fuel Transfer

The Barge Pumpman will work closely with the person monitoring the loading of the tank (tank/valve monitor). Teamwork, effective communication and continual monitoring of all of the fuel transfer components are critical to the success of the fuel transfer operation. Provided below is a listing of the activities and actions that will take place during the fuel transfer operation. Note: At no time shall the fuel transfer rate be allowed to exceed 300,000 litres per hour.

Marine Activities:

- Ensure that the barge does not exceed maximum list (port and starboard) and maximum trim (forward and aft).
- Monitor mooring lines and boom/barge connection at all times

Fuel Transfer Activities:

- Open the shore tank inflow valve and the barge outflow valve.
- Start the pump on the barge.
- Initially transfer fuel at a slow pumping rate until it has been confirmed that the fuel is flowing and that all hose connections are secure.
- Increase the pumping rate progressively.
- Ensure that adequate warning is given of rate changes and barge tank changeovers.
- Reduce the pumping rate while topping up.
- In the event of an emergency, immediately stop the fuel transfer operation and sound the alarm.

Monitoring Activities:

- Ensure that all personnel involved in the fuel transfer operation remain in constant contact.
- Check the fuel transfer conduit for leaks at start up and at regular intervals during the transfer.
- Monitor the barge manifold, fuel transfer conduit (including couplings), pump and surrounding area to identify any problem. Neither the barge manifold area nor the shore tank manifold is to be left unattended during the fuel transfer operation. Particular attention to the fuel transfer components is required prior to and after increasing the pumping rate.
- Establish watch on the shore tank manifold and tank with suitable communication in place.
- Monitor the filling of the shore tank. Conduct volume checks at regular intervals.

Also, 30 minutes after tank loading commences and then once per hour circumnavigate the tank on foot at ground level to check for any evidence of a tank leak.

- In addition, regularly check the area around the jetty and barge for signs of a problem with the moorings, boom or evidence of product escape.

2.20.5 Leak Monitoring

- Throughout the upload process, designated monitors are allocated to specific stationary locations at the facility to maintain watch on critical connections and monitor tank filling, and teams of monitors (line walkers) are assigned to continually walk the length of the transfer conduit from the barge to the receiving tank.
- 24-hour monitoring of hose line will occur during transfer. Specifically, a minimum of two people in shifts will continuously walk and monitor the line for leaks, hose blisters or any other irregularity. The monitors may be reduced to one person to allow for rest breaks and

other necessary functions when the line is running normally.

- If a transfer conduit, tank or a connection leaks during a transfer operation, the supervisor on board the vessel and the supervisor at the handling facility will slow down or stop the operation to remove the pressure from the system conduit or connection. The matter will then be rectified prior to resumption of the transfer.
- It is not unknown for camlock fittings to “sweat” during a transfer. Suspicions of a potential leak can be allayed by knocking beads of the liquid onto the hydrophobic sorbent in the bottom of the drip tray. If it soaks into the sorbent it is hydrocarbon, if it beads on the surface of the sorbent it is water.

2.20.6 Completion of Transfer and Disconnection from OHF

- Throughout the tank filling process the tank fill volumes will be monitored (meter and/or visual) and reported to the Agnico Eagle OHF Oil Transfer Supervisor or his delegate.

Tanks are filled to no greater than 90% and upon reaching this pre-marked level, pumping will stop, valves will be closed and locked on the tank and documented on the checklist.

- **A pig will be run through the lines to sweep the lines clean of fuel to the maximum extent possible prior to tank valve closure. This may require multiple pig runs.**
- Drip trays will remain under couplings as they are disconnected to catch any leakage.
- All hoses will be capped and plugged while ends are still over drip trays.
- Any minor spills will be immediately cleaned up, soiled material will be disposed of appropriately and equipment decontaminated, if necessary, and put away.
- Every spill (>1 litre on land, any amount in water) will be formally reported through the Agnico Eagle Incident Reporting procedure. Environmental personnel will be notified immediately of any spill occurring during a fuel transfer.
- The fuel supplier and Agnico Eagle will sound all barge tanks and take temperature readings, and will gauge shore tank. Amount of fuel transferred will be verified by the fuel supplier and Agnico Eagle and signed off by fuel supplier and a representative of Agnico Eagle Management.

2.20.7 Immediately After Fuel Transfer

After the transfer is complete, the personnel involved with the fuel transfer operation will run through a series of steps geared to disconnecting the fuel transfer conduits from the shore tanks, verifying the volume of fuel transferred, Provided below is a listing of the activities and actions that will take place immediately after the barge has been offloaded.

When the tank has been loaded:

- Shut off the pump.
- Close and lock the shore tank valve and the valves on the barge's manifold.
- Close the ball valve on the downstream end of the fuel transfer conduit.
- Close and lock the shore tank inflow valve.
- Disconnect the fuel transfer conduit from the barge tank valve. Cap the shore tank inflow valve and the downstream end of the fuel transfer conduit.

Fuel Volume Verification:

- Dip/gauge the shore tank and the barge's tanks in order to verify the volume of fuel transferred and record the information in the log book and on the Voyage Order Document sheets. Also measure the temperature of the fuel in the shore tank.
- Close the shore tank and the barge's tanks.

Environmental Activities:

- Visually survey the fuel transfer area for any evidence of drips or leaks.
- Clean up any minor spills.

At the end of the transfer operation, the Bulk Fuel Transfer Sequencing Checklist found in Schedule 1c, will be complete and signed off by the OHF Oil Transfer Supervisor.



Figure 5 A 5MillionLitreShore Tank at Roberts Bay OHF

3 Oil Pollution Emergency

3.1 Introduction

The Agnico Eagle OPPP/OPEP has been developed to meet the requirements of the standards outlined in Section 13 of the *Response Organizations and Oil Handling Facilities Regulations*. The plan is unique to the infrastructure, geographic features and meteorological conditions at the Roberts Bay OHF. The Annual Fuel Transfer Risk Assessment Review provided as Schedule 9 describes the primary risks facing the fuel transfer operation and the preventative and responsive measures for addressing each risk.

3.2 Objective

The Agnico Eagle OPEP objective is to meet the requirements of the *Response Organizations and Oil Handling Facilities Regulations* Section 13 and to prevent discharges to the environment by ensuring the company and its fuel contractor has the functional capability to respond to an uncontrolled release commensurate with the volumes and types of fuel being handled during the OHF fuel transfers.

Equipment and resources for immediate use are outlined in Section 3.5 and spill scenarios are outlined in Section 3.8 of this document.

3.3 Response Strategy Summary

In the event of an oil pollution emergency, the response shall follow the steps set out in the table below, to achieve the following priorities:

- The safety of the facility's personnel
- The safety of the facility
- The safety of the communities living adjacent to the facility
- The prevention of fire and explosion
- The minimization of the effects of a discharge
- The reporting of oil pollution incident
- The environmental impact of a discharge and
- The measures to be taken for clean-up following the oil pollution incident, including with respect to areas of environmental sensitivities and surrounding ecosystems

Table 3 Response Strategy Summary

Responsibility	Action
First Responder	Ensure personal safety and immediately activate emergency communications. Section 3.4 includes details on notifications and reporting.
Pump Operator Tanker or Barge	If the fuel transfer is occurring, immediately shut down the pump.
Tank Valve Monitor	Upon instruction from Pumpman close the tank valve and those on both fuel transfer conduits.
Fathom Marine SOTO/Agnico Eagle Oil Transfer Supervisor	Initiate the prescribed internal and, if appropriate, external notifications. Section 3.4 includes details on notifications and reporting. Summon nominated ICS Ops. Section Chief and Agnico Eagle Oil Transfer Supervisor and jointly assess the severity of the fuel spill and the immediate hazards.
Agnico Eagle OHF Oil Transfer Supervisor	Initiate the prescribed internal and, if appropriate, external notifications. This includes initiation of spill containment response personnel selected from the Agnico Eagle Emergency Response Team. Section 3.4 includes details on notifications and reporting. See Note below. Summon nominated ICS Ops. Section Chief and Fathom Marine Oil Transfer Supervisor and jointly assess the severity of the fuel spill and the immediate hazards.
Operations Section Chief	Activate the command post from which the fuel spill response operation will be coordinated. Assist with development of the initial Incident Action Plan (IAP)

Responsibility	Action
Incident Commander	<p>Approve Site Safety Plan developed by Safety Officer and ensure crews are briefed on Site Safety Plan, Comms. Plan and Initial Action Plan. Monitor response operations.</p> <p>Liaise with Operations & Planning Section Chiefs re priorities for resources at risk protection.</p>

Note: At time of writing there is no telephone installed in the Roberts Bay Command Post with which to communicate with Doris Camp. Radios can be used during daytime hours but are not suitable for contacting key or off duty employees at rest. On the shift check-in sheets each employee adds his or her room number or berthing vessel to provide an off duty point of contact.

For persons rooming at Doris Camp the contact procedure being instituted is as follows. Roberts Bay Command Post calls "Mill Control Room" on radio channel Agnico Eagle Channel 10.

Advise Mill Control Room of employee(s) required, their assigned room(s) number(s) and the message to be passed.

Mill Control Room will treat the passing of this message as a priority.

For persons berthing on vessels, contact the vessel's bridge which will be manned 24/7 and pass the message. Such contact may be made via the dedicated project radio channel, Agnico Eagle 9, or via the Marine VHF Radio on the agreed channel.

The following persons are unlikely to be on a shift sign-in sheet but are authorized to activate the Oil Pollution Prevention Plan/Oil Spill Emergency Plan (OPPP/OPEP).

Guy Dufour / Brett Fairbairn
 460-06765 or 460-0676
 Phone – 4600102/101
 Environment Channel

Also Red Button – Code 1 Procedure

1. To initiate an Emergency Response upon discovering an emergency situation, the individual will notify the IC by pushing the Red Button on the Radio, calling 4600911, or in person.
 - a. Please remember to remain calm and speak slowly
2. The IC (or their designate) will respond to all calls and prompt for the following information;
 - a. Name of Caller
 - b. Type of Emergency

- c. Location
 - d. Type of Injury (if any)
 - e. Number of People involved and / or injured
 - f. Any other relevant information
 - g. Radio # and / or ask them to stay on the Red Button TG
3. Using the PA ERT, the IC will alert all ERT members of the emergency with basic details. Ie "Attention all ERT we have a surface fire, Proceed to the fire hall and prepare for a surface fire" and will repeat this.
4. The IC will then call the MOD and give an update. Three general situations will occur, but are not limited to;
 - a. IC will advise the MOD, nothing else required
 - b. IC will advise the MOD, request some form of support
 - c. IC will request MOD activate the ERP and to gather the senior site staff
5. The IC and MOD will collaboratively decide if a site wide shutdown is required. This will be based on whether the ERT is able to respond to a second emergency at the same time.
6. If a site wide shut down is required, using the Public Announcement TG the IC will announce "CODE 1 CODE 1 CODE 1 There is an ongoing emergency situation, requiring a sitewide shutdown." And repeat the message immediately afterwards.
 - a. The only person authorized to call a site wide CODE 1 will be the IC in collaboration with the MOD.
 - b. Only the IC or their designate is able to give the all clear.
7. Upon hearing a CODE 1 call:
 - a. All work must stop immediately and in a safe manner, unless pertinent to the rescue operation.
 - b. Adhere to Radio silence, unless pertinent to the rescue operation
8. Once the situation is under control and the IC is confident the ERT is able to effectively respond to another emergency, using the PA they will announce twice the resumption of work and any other pertinent information.
For Example: "This is the Incident Commander, This is the all clear to resume normal operations, Please be advised there are still ongoing ERT activities and give priority to all responding vehicles."
9. Until the UG radios are upgraded from the Motorola Radios to the Sepura Radios, all Emergencies must be called on Channel #1. There is a link between this channel on the UG radios and the Sepura Red Button Talk Group

3.4 Notifications and Reporting

Notifications will occur to concerned stakeholders and regulatory agencies in accordance with the Spill Reporting Quick Reference (Section 3.4.1), Hope Bay Site Emergency Contacts List (Section 3.4.2) and External Key Contacts List (Section 3.4.3). In the event of any fuel spill to the marine environment during the transfer operation, the Canadian Coast Guard must be notified immediately.

3.4.1 NT/NU Spill Report Form

If applicable, an NT/NU Spill Report Form must be completed by the Responsible Party's designated management representative. A copy of the blank form is enclosed as Schedule 15 to this document. Unless a different format is required the same completed form may be used to fulfill other requirements for a written report.

3.4.2 Post Oil Transfer Report

The Post Oil Transfer Report, included as Schedule 14 to this document and the supporting documentation as required on that form, is to be completed and forwarded to the Transport Canada, Marine Safety & Security at the electronic or mailing address on the form as soon as practicable after completion of the fuel transfer. Such a Report is required to be filed after each fuel transfer project.

Spill Reporting Quick Reference

Table 4 Spill Reporting Quick Reference

Timing	Source Authority	Contact	Format	Trigger
Immediate/ASAP	Canadian Coast Guard - Central and Arctic Region	1-800-265-0237 (24 hours)	Verbal notification and written report submission	Any discharge to marine environment during fuel transfer between tanker and lightering barges and between lightering barges and shore tanks
	Nunavut Water Board	INAC Inspector 867-669-2438	Verbal notification and written report submission	Reportable spill/unauthorized discharge of waste or effluent
	Kitikmeot Inuit Association	Senior Hope Bay Project Officer 867-982-3310	Verbal or written notification	All fuel or chemical spills, property, water or land contamination/breach of environmental regulation
	Government of Nunavut	24 Hour Spill Report Line 867-920-8130	Verbal (see NT-NU Spill Report Form)	Reportable spill (refer to Schedule B of <i>Spill Contingency Planning and Reporting Regulations</i> for Nunavut)
As soon as feasible	Transport Canada, Marine Reg. Enviro. Prep. & Resp. Officer	Jared Reichert 780-442-1945 Fax: 780-495-8607	Verbal & written notification	Report discharge or anticipated discharge of oil

Timing	Source Authority	Contact	Format	Trigger
24 Hour	Nunavut Water Board	INAC Inspector 867-669-2438	Detailed spill report	Reportable spill/ unauthorized discharge of waste or effluent
Within 30 Days	Government of Nunavut	24 Hour Spill Report Line 867-920-8130 spills@gov.nt.ca	Detailed spill report	Reportable spill (refer to Schedule B of <i>Spill Contingency Planning and Reporting Regulations</i> for Nunavut)
	Nunavut Water Board	INAC Inspector 867- 669- 2438	Detailed spill report	Reportable spill/ unauthorized discharge of waste or effluent
	Kitikmeot Inuit Association	Senior Hope Bay Project Officer 867-982-3310	Written notification	Property, water or land contamination/breach of environmental regulation

Pursuant to the *Vessel Pollution and Dangerous Chemicals Regulations*, and the *Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants*, Agnico Eagle shall, immediately or as soon as practicable, notify the regional Canadian Coast Guard station at 1-800-265-0237 of any discharge or anticipated discharge of oil. Agnico Eagle will also submit a written report as soon as feasible to Transport Canada, Marine, Regional Preparedness & Response Officer, 1100-9700 Jasper Avenue, Edmonton, AB, T5J 4E6. The report shall include:

- a) the identity of any vessel involved,
- b) the name and address of the oil handling facility,
- c) the name and position of the person who is responsible for implementing and coordinating the oil pollution emergency plan,
- d) the time and location of the discharge or estimated time and location of the anticipated discharge,
- e) the nature of the discharge or anticipated discharge, including the type of oil and an estimate of the quantity of oil involved,
- f) a description of the response actions to be taken,
- g) on scene conditions, and
- h) any other relevant information.

The Agnico Eagle *Oil Pollution Incident Reporting Form* will be completed and will be maintained as a written record of all notifications (refer to Schedule 12).

3.4.3 Hope Bay Site Emergency Contacts List

The positions in italics are those to be assumed in the event of a significant spill is encountered and the organization switches from transfer operations to the Incident Command System (ICS) response management structure.

Table 5 Hope Bay Site Emergency Contacts List

Site Position <i>(ICS Title italicized)</i>	Contact Name	Day Number	Night Number
Fathom Marine Oil Transfer Supervisor <i>Fathom Marine Incident Commander</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>
Agnico Eagle OHF Oil Transfer Supervisor	George Miller / Nelson Bell	Radio 460-0610	Radio 460-0610
Manager on Duty <i>Agnico Eagle Incident Commander</i>	Varies Morgan Hjorth / Jason Sanderson	460-0909	460-0909
Response Preparedness Co-ord. <i>Ops. Section Chief</i>	<i>TBD</i>	<i>TBD</i>	<i>TBD</i>
Site Services Superintendent	Cody Kerr	460-0609 E&I Maintenance Channel Phone 460-0131	Radio 460-0609
Site Environmental Superintendent <i>Planning Section Chief</i>	Guy Dufour / Brett Fairbairn	460-06765 or 460-0676 Phone – 4600102/101 Environment Channel	Radio 460-06765
Site Security Officers / Safety Coordinators	Morgan Hjorth / Jason Sanderson	Radio 460-0911 or Red Button	Radio 460-0911 or Red Button
Site Health and Safety Manager	Philemon Desrochers-Gagnon	Radio 460-0910 (when onsite)	
Site Emergency Response Coordinators	Morgan Hjorth / Jason Sanderson	Radio 460-0911 or Red Button	Radio 460-0911 or Red Button
Site Services Supervisor	George Miller / Nelson Bell	Radio 460-0610 Phone 460-0126	Radio 460-0610
Site Medic	Vicky Hamelin / Morgan Hjorth / Jason Sanderson	460-0912 Phone 460-0105	460-0912 or Red Button

Site Position <i>(ICS Title italicized)</i>	Contact Name	Day Number	Night Number
<i>Safety Officer</i>		Radio 460-0911 or Red Button	Radio 460-0911 or Red Button
Site Waste Management	Neil Stoyberg / Chad Boucher	E&I Operations / Logistics Radio 460-0617 Phone 460-0187	
Hope Bay Doris Camp Management	Mike Hollick	Radio 460-0634 Phone 460-0107	
Site Logistics	Kevin Rutter / John Pruden	Radio 460-0652 Phone 460-0134	

3.4.3.1 Radio Call Signs

The participant's Position Title rather than personal name will be used as their radio call sign on the project's dedicated radio channel (Agnico Eagle #9). e.g. Fathom Transfer Supervisor, Barge Pumpman, etc. Where more than one person has a similar position title e.g. Line Walkers, the holders' call signs will be designated in the Communications Plan "Line Walker #1" and "Line Walker #2" for each shift.

Titles will, for the most part, be those used in the Incident Command System (ICS)

After a shift change the new holder of the position will assume the assigned call sign.

In a limited number of cases the call sign will reflect the Duty Officer of a unit.
e.g. Fathom Wave (tug) Bridge", etc

All call signs will be spelled out in the Communications Plan. These will cover both the Agnico Eagle frequencies and the designated VHF Marine Band for the limited number of holders with access to the latter.

For those seconded to the Response Team, his/her call sign will be assigned at the time of the Site Safety/situation briefing.

3.4.4 External Key Contacts List

Table 6 External Key Contacts List

Company/Agency	Contact Name	Contact Number
Transport Canada, Marine Safety and Security – Technical Services (Prairie and Northern Region)	Jared Reichert, Reg. Environ Preparedness & Response Officer, Edmonton	Tel: Office:780 442 1945 Jared.reichert@tc.gc.ca

Company/Agency	Contact Name	Contact Number
Transport Canada, Marine Safety (Prairie and Northern Region)	Mitch Paulus A/Manager Environmental Response	Tel: 780 495 5232 Cell: Mitch Paulus@tc.gc.ca
Canadian Coast Guard – Marine Communications and Traffic Services (MCTS) (Iqaluit)	MCTS Operations Officer in Charge	Tel: 867-979-5269 Tel:867-979-5260
Government of Nunavut - Dept. of Environment		Spill Hotline: 867-920-8130 General: 867-975-5900/7700
Fathom Marine, North Vancouver, BC	Niels Gran Scott Hopkins / Grant Locke	604 314 9018 604 202 5889
Crowley, Alaska	Walt Tague	Direct: 907.777.5563 Cell: 907.830.8481
Mackenzie Delta Spill Response Corp. (MDSRC) in Inuvik & Norman Wells, NWT	Tim Taylor, MDSRC Admin Manager	Tel: 403-457-3661 info@mackenziespillresponse.ca
Indigenous & Northern Affairs Canada - Kitikmeot Region	Eva Paul, Water Resources Officer	Tel: 867-669-2438 Eva.Paul@canada.ca
Kitikmeot Inuit Association - Lands Division	Senior Hope Bay Project Officer John Roesch	Tel: 867-982-3310
KBL Environmental Ltd. Industrial Waste Transfer Facility, Yellowknife, NWT	John Oldfield, General Manager Jeffrey Bembridge, Operations Manager	Tel: 867-873-5263
Site Archeologist	Gabriella Prager Points West Heritage Consulting Ltd Prager.gabriella@gmail.com	780-980-2079
Wildlife Rescue & Rehab.	Chris Bataglia, President Focus Wildlife chris@focuswildlife.org	310-371-7777 OR 310-386-5965

3.4.5 Roberts Bay OHF General Information

Table 7 Roberts Bay OHF General Information

Oil Handling Facility Site Location	Roberts Bay, Melville Sound, 120 kilometres southwest of Cambridge Bay, Nunavut Territory
Oil Handling Facility Jetty Roberts Bay	106° 37' 35.33"W 68° 10' 31.37"N 13W 432527 E 7563318 N

Oil Handling Facility Level	2
Maximum Oil Transfer Rate (Maximum flowrate)	225,000 litres/hour (As per maximum rigid pipe velocity)
Intended Maximum Oil Transfer Rate (Operation flowrate)	145,000 litres/hour (With 1000m of 6" Floating line) 205,000 litres/hour (With 2x 1000m of 6" Floating line merged in one 6" rigid line)
Minimum Size of Oil Pollution Incident	5,000 litres

Note 1: A fuel transfer rate maximum of 300,000L per hour shall not be exceeded at any time.

Note 2: A fuel transfer rate of 300,000L defines the facility as a Level 2 OHF in accordance with the Oil Handling Facility Regulations and thus planning and equipping for a potential spill of at least 5,000L has been accomplished.

Note 3: At the design stage, the fuel distributor is not known. Therefore, the values available from the Meliadine distributor was used (pumps, hoses, ship, etc).

3.4.6 Hope Bay Site Radio Channels

Table 8 Hope Bay Site Radio Channels

RADIO CHANNEL - EFFECTIVE 09 DEC 2023			
NAME	FOLDER	TALK GROUP	USE
CAMP	SURFACE	100	General Camp
ENVIRONMENT	SURFACE	101	Enviro / Wild life report / Spill
MOBILE MAINTENANCE	SURFACE	102	Mechanics
E&I OPERATIONS	SURFACE	103	Surface Traffic
E&I MAINTENANCE	SURFACE	112	Site Service Trades
MILL	SURFACE	104	Disabled - Future use for mill work
MILL SHUTDOWN	SURFACE	105	Disabled - Future use for mill work
EXPLORATION	SURFACE	106	Explo / Major / Geotech / Geos
DRILL MOVE	SURFACE	109	Drill move within radio reach
CONSTRUCTION	SURFACE	107	Disabled - Future use for construction
CIVIL WORKS	SURFACE	110	Earth works / Quarry / Batch Plant
LOGISTICS	SURFACE	108	Warehouse / Airfield / Sea Lift
ROAD	SURFACE	113	TLR Road / Windy Road
UG DEV DORIS	UG DORIS	120	UG Doris
UG RAMP DORIS	UG DORIS	121	Disabled - Future use
UG CONST DORIS	UG DORIS	122	Disabled - Future use
UG PROD DORIS	UG DORIS	126	Disabled - Future use
UG DEV MADRID	UG MADRID	123	Disabled - Future use
UG RAMP MADRID	UG MADRID	124	Disabled - Future use
UG CONST MADRID	UG MADRID	125	Disabled - Future use
UG PROD MADRID	UG MADRID	127	Disabled - Future use
ERT	ERT	171	ERT ONLY
RED BUTTON	ERT	170	CODE 1 RED BUTTON / ERT MONITORING
PA ALL ZONE	PA	150	ERT USE - PAGE ALL ZONES
PA UG DORIS	PA	151	MINE USE - PAGE ALL UG DORIS
PA GRIZZLY/SURF	PA	152	PAGE ALL SURFACE RADIOS - PREDATOR WILD ANIMALS
PA ERT	PA	153	ERT ONLY - PAGE ALL ERT RADIOS
PA MGMT	PA	154	MANAGER ON DUTY / ERT - PAGE ALL DEPT MANAGER
PA UG MADRID	PA	155	MINE USE - PAGE ALL UG MADRID
NIGHT MODE	DO NOT DISTURB	111	DISABLED TO TX TRAFFIC - FOR ON CALL PERS TO RECEIVE DIRECT CALL
NAME	FOLDER	TALK GROUP	USE
REPEATER A	DMO		Portable Gateway repeaters for field or UG use
REPEATER B	DMO		Portable Gateway repeaters for field or UG use
REPEATER C	DMO		Portable Gateway repeaters for field or UG use
REPEATER D	DMO		Portable Gateway repeaters for field or UG use
REPEATER E	DMO		Portable Gateway repeaters for field or UG use
CRANE OPERATOR	DMO		Critical Lift Operations - Direct line of sight with no latency
COMMS FAILOVER	DMO		Plan B if their was a catastrophic failure of doris tower

3.5 *Equipment and Resources*

3.5.1 **Containment and Recovery Resources**

Agnico Eagle maintains a dedicated inventory of emergency spill response supplies and equipment in a set of moveable containers (20' sea cans) at the Roberts Bay jetty. The immediately available supplies at this location will be sufficient to conduct a response required for a Level 2 Oil Handling Facility with a maximum oil transfer rate of 225,000 litres/hour and a minimum spill size of 5 m³ in accordance with the *Response Organizations and Oil Handling Facilities Regulations*, and *Oil Handling Facilities Standards*. The intended maximum operational transfer rate for this project will be 145,000 litres/hour with 1000metres of 6" floating line, and 205,000 liters/hour with two 1000metres of 6" floating line merged in one 6" rigid lineu.

For the purposes of meeting the requirements, the amount of oil "scheduled to be trans-shipped" is 15,000,000 liters. The oil will be trans-shipped in a De Cho Class Oil Barge. The barge is a double hulled and double floored vessel and contains ten internal holding tanks, each with a capacity of 200,000 litres. The intention is to only load each internal tank to 93% of its capacity; therefore, for the purposes of this plan, a maximum quantity of 186,000 litres of oil representing a catastrophic failure and loss of an internal tank load of fuel into the marine environment from rupture or other causes has been used for preparedness and response plan development. The minimum quantities of critical response equipment to be kept on site and available during the fuel transfer operation will be capable of managing this maximum anticipated spill. See Schedules 4, 5, 6 and 8c.

Note: All fuel supplier barges utilized at the Roberts Bay OHF are of double-hulled construction so this is a mitigating factor in the risk of a rupture of any barge tank.

If a spill occurred from a barge at the Roberts Bay OHF jetty, the pre-transfer preventative boom deployment at the barge would be augmented by the Jetty staged reserve boom and will meet the requirement to contain and control the oil involved in the discharge within one hour of the discovery of an oil pollution incident per Section 13(2)b of the *Response Organizations and Oil Handling Facilities Regulations*. Booming diagrams of operations at the Tanker and Jetty are illustrated in Schedule 8.

Fathom Marine is providing a suitable workboat that will be manned throughout the transfer and used for booming, magnet positioning and other general duties.

This and any other vessel to be utilized by Agnico Eagle for the fuel transfer is, or shall be at the time of the fuel transfer, in compliance with regard to minimum safety equipment and licensed/registered with Transport Canada, as applicable.

Per Section 13(2)c of the *Response Organizations and Oil Handling Facilities Regulations*, the oil recovery at the jetty can commence with the assembly of the containment berms and fuel bladders (stored immediately adjacent to the fuel transfer area in the Spill Response Equipment sea cans), and deployment of the skimmer into the boomed area directly off the jetty. Oil captured by the skimmer can be loaded directly into the site 50,000L fuel tanker. The vacuum truck can also be activated to begin removing loads of 12,000 litres per trip to empty 70,000-litre double-walled tanks temporarily stored at the upper reagent pad. The jetty facility is completely accessible by all heavy equipment to support mobilizing supplies to the area, or removal of waste materials.

The possibility exists for recovery of fuel directly back into empty tanks in the barge using skimmer equipment supplied by either Agnico Eagle or the fuel contractor. This may be the most efficient and effective option but it is entirely at the discretion of and under the direction of the Fathom Marine Oil Transfer Supervisor. Agnico Eagle does, however, have adequate available pumping and volumetric storage capacity to deal with the recovery of the entire maximum anticipated amount of spilled product.

There will be sufficient tested hose on site to run from the boomed area at the barge along the length of the jetty to an area appropriate for the staging of recovered liquids and contaminated solids storage devices.

3.5.2 Environmental and Cultural Resources

In the event of a spill, Agnico Eagle will work with regulators to make every effort to prevent environmental (wildlife, fish habitats, etc.) and cultural resources from being impacted. Wildlife will be deterred from the site through the use of hazing and visual aids. A plan is in place to exclusion boom the area of the created fish habitat located just west of the jetty location. Archaeological sites will be identified, prioritized, delineated and restricted from access as necessary and practical.

Should a spill threaten any of these resources, Agnico Eagle intends to contract companies that specialize in resource specific rescue and rehabilitation. The contractor(s) will obtain any necessary permits and provide suitably trained personnel and specialized equipment for these purposes

3.5.3 Waste Management Resources

Both solid and liquid waste containment must be considered for effective management of an oil handling incident. Sufficient secure capacity is available on site to retain over 200,000 litres of spilled product. Sufficient capacity is also available to properly manage a calculated volume of soiled sorbents and other contaminated solids. Both of these requirements are addressed with the bladders and tanks available, close proximity of lined berm storage facilities at Roberts Bay laydown and with the soiled waste bags (mega bags) present on site in the Spill Response Equipment sea cans at the jetty and the Waste Management facility.

Should it be necessary, additional oiled waste management resources will be requested and flown to site on an emergency basis from the Agnico Eagle waste management contractor (KBL) in Yellowknife.

3.5.4 Heavy Equipment Resources

Heavy equipment is available at site to assist with transporting additional materials to the response effort and waste management aspects of the recovery operation. These resources are listed in Schedule 4.

3.5.5 Minimum Recovery and Waste Management Resources

The following list is the minimum critical response equipment to be on site at the time of a bulk fuel transfer at the Roberts Bay OHF:

Table 9 Minimum Recovery and Waste Management Resources

Boom	9 x 50' sections (450') of 30" boom with ASTM F962 connectors
	4 x 82' x 20" diameter = 328' ShoreSaver Boom with ASTM F962 connectors
	15 x 50' sections (750') of 30" boom with ASTM F962 connectors
Sorbent Capacity	120 bales of 100 24" x 24" oil sorbent pads 15 oil sorbent rolls of 38" x 144' Pom Poms 30 boxes of 30 pieces.
	1,000' of 10' @ 4" connecting oil sorbent booms - 25 bags of 4 booms each
Pumps and Hose Capacity	Capability of pumping/transferring up to 200,000 litres in less than six hours; sufficient length of hose to reach from boomed area at barge to base of jetty where bladders can be assembled

The above does not include resources brought to the site by the fuel transporting vessels (tanker & barges) or available through MDSRC (see 3.5.6. below) or other contractors.

3.5.6 Spill Response Supplies and Equipment Inventory

The full list of dedicated and additional emergency spill response equipment, heavy equipment and waste management resources kept accessible at the Roberts Bay Oil Handling Facility to

support emergency response in the event of an oil handling emergency are detailed in the Schedules to this document.

In addition, Agnico Eagle is a Member of Mackenzie Delta Spill Response Corporation (MDSRC) and as such has priority access to the MDSRC equipment/consumables caches at Norman Wells and Inuvik, NT, should the need arise. That inventory appears as Schedule 6. The MDSRC response boat and spares listed on that inventory is currently located at Hope Bay.

3.5.7 Emergency Response Procedures

- Fuel Supplier SOPEP
- Agnico Eagle OPPP/OPEP
- Agnico Eagle Emergency Response Plan
- Agnico Eagle Spill Contingency Plan

3.6 Spill Response Roles and Responsibilities

Listed in this section are the specific site roles or entity from which the equipment and resources will be obtained, or specific actions required, in the event of an oil pollution incident, and the manner in which the equipment and resources will be deployed.

In the event of a significant spill the project team will immediately switch to the Incident Command System (ICS) including that system's position titles. Such a switch will be announced by the Agnico Eagle OHF Oil Transfer Supervisor.

3.6.1 First Responder

First response to an uncontrolled release of fuel at the transfer area is the responsibility of the first person to detect the spill in accordance with the Hope Bay Emergency Response Plan and the Hope Bay Spill Contingency Plan. The principal role of the first responder during the fuel transfer is to report the spill to the barge pumpman, the Agnico Eagle OHF Oil Transfer Supervisor, or the Response Preparedness Coordinator, assess the site, stop the flow, if safe to do so, and attempt to contain the spilled material, especially if it threatens to enter a water body.

For a spill involved with the bulk fuel transfer, the first responder will initiate emergency communications by issuing a "STOP PUMP" signal by radio or air horn. Responsibility for coordinating initial response efforts will fall to the OHF Oil Transfer Supervisor or the ICS Ops. Section Chief.

3.6.2 Fuel Contractor Captain/SOTO or “Person in Charge”

In accordance with fuel supplier shipboard emergency plans, the Chief Officer/SOTO or designated people in charge will activate an emergency response with priorities and actions as outlined in the SOPEP; depending on the location of the emergency.

3.6.3 Oil Transfer Supervisor/ICS Incident Commander

Fathom Marine Oil Transfer Supervisor or Agnico Eagle’s OHF Oil Transfer Supervisor, upon receiving notification of a spill associated with the bulk fuel transfer will ensure that the transfer operation is immediately halted, and not re-commence the operation until the spill incident has been effectively responded to and resolved. The OHF Oil Transfer Supervisor will alert other relevant departments of the spill incident and has the authority to activate the switch to the Incident Command System (ICS). The Incident Commander is the principal role responsible for activating and coordinating the response and is to be accessible to the Canadian Coast Guard during the entire response operation. The incident is to be reported as soon as practicable to the emergency contacts as required in the Spill Reporting Quick Reference list with the information as required in Table 5 of this document.

The Incident Commander will approve the Incident Action Plan (IAP) and provide direction to the incident response team.

The Incident Commander upon receiving notification of a spill associated with the fuel transfer operation, will ensure that the appropriate response is initiated based on the severity of the incident and in accordance with the Hope Bay Spill Contingency Plan and this document. Notifications will be made to the appropriate agencies in accordance with Table 5 of this document, and in particular, in the event of any spill to the marine environment during the fuel transfer operation, the Canadian Coast Guard must be notified immediately.

3.6.4 Agnico Eagle Emergency Response Team (Emergency Response Plan)

The Agnico Eagle Emergency Response Team (ERT) will provide front line assistance in the event of an incident during the Fuel Transfer. In the case of a significant fuel spill, the transfer personnel will switch from the regular organizational structure to the Incident Command System (ICS) and adopt, as required, the job titles, duties and responsibilities of the ICS system. The Agnico Eagle ERT personnel will be assigned to functions within the ICS system, as required.

3.6.5 Site Environmental Personnel

On-site representatives will attend the spill site to advise on the response from an environmental/regulatory perspective (e.g., protection of sensitive areas) and participate in the response effort as directed. They may also assist with any internal notification processes required or master event log maintenance as directed.

3.6.6 Site Logistics Coordination – Agnico Eagle Hope Bay and Yellowknife

Logistical support at site will be coordinated by Agnico Eagle Hope Bay. Logistical support may involve coordinating additional manpower and/or supplies as required to be flown in to the Roberts Bay Oil Handling Facility, as needed, or to organize and properly categorize, label and manifest waste products for removal offsite via airfreight backhaul to the KBL waste handling/transfer facility in Yellowknife, Northwest Territories.

3.6.7 Site Warehouse Personnel

The responsibility of the site warehouse is provision of materials to the responders and Response Management Team in support of the emergency response. This may include such items as boots, gloves, flashlights, headlamps, shovels, extra sorbents, etc., to augment emergency response supplies, as needed.

3.6.8 Site Medical Personnel

The physician's assistant or equivalent will proceed to the applicable fuel transfer area to provide medical assistance to personnel, as needed.

3.6.9 Site Services - Heavy Equipment and Operators

The site services will provide heavy equipment and qualified operators to work under the direction of the Oil Transfer Supervisor/Operations Section Chief to support the response.

3.6.10 Offsite Waste Contractor

The offsite waste disposal contractor will provide additional resources on request for management of soiled materials. Additional supplies of drums, totes, mega-bags or other containment supplies will be forwarded to BBE in Yellowknife for air transport to the Robert's Bay OHF. The waste management contractor will also, upon notification of a serious incident at the fuel transfer area, be prepared to receive waste by airfreight backhaul for proper disposal at an approved facility.

3.6.11 Other Roles

Other roles as identified in the Incident Command System will be filled as necessary. Specialized external contractors (i.e. SCAT, Wildlife Management, etc.) will be called to the site, as required.

3.7 Spill Response Training

The Agnico Eagle Oil Transfer Supervisor will undertake the Marine Spill Response Operations Course (MSROC) or equivalent training on site to permit that individual to co-ordinate and supervise the operational response to a marine or land oil spill incident. The course is provided by professional external trainer familiar with the OHF facility and fuel transfer process.

Basic hydrocarbon incident awareness is an integral part of the Hope Bay Site Orientation process for all persons working at the site. Prompt reporting of incidents is the keystone to ensuring an appropriate and effective response is mounted in a timely manner for all spill incidents.

A dedicated team of responders for the Hope Bay site is identified in the Hope Bay Emergency Response Plan; the Emergency Response Team (ERT). This team receives advanced training in site emergency plans, as well as formal training from a contract trainer (Ian Lambton of Riverspill) specializing in spill response for hazardous materials. The site ERT also receives training in First Aid, HAZMAT, Water Rescue, Bear-wise and Fire Suppression, among other types of courses.

The training program that Agnico Eagle, as operator of the OHF, will provide to permanent and temporary personnel in preparation for the responsibilities that they may be requested to undertake in response to an oil pollution incident, will include but not be limited to the following criteria:

- Equipment deployment techniques;
- Emergency plans;
- Notification procedures;
- Health and Safety; and
- Roles and responsibilities of various responders.

Training records for the program will include the names of all personnel who have received basic oil pollution incident response training will be retained on file at the OHF. A detailed list of the fuel contractor, site contractors and Agnico Eagle personnel that undertook basic and advanced spill response training from 2015 to present is set out in Schedule 7b. Note that “short notice” persons will not be employed with the response until after completion of basic safety and task training.

3.7.1 Oil Pollution Response Exercise Program

An oil pollution incident exercise program will also be established to evaluate the effectiveness of all aspects of the procedures, equipment and resources that are identified in the OPPP/OPEP.

All documentation related to classes and exercises will be kept at the OHF for five years and copies made available for review by Transport Canada, upon request. Corrective measures will be identified and the OHF’s OPEP be amended, including the date when the measures were adapted and submitted to Transport Canada.

The Agnico Eagle Roberts Bay OHF has established an oil pollution incident response exercise program consisting of formal classroom training and practical exercises that will be carried out over a three (3) year period. The established program shall evaluate the effectiveness of all

aspects of the procedures, equipment and resources that are identified in the oil pollution emergency plan, including exercises to be coordinated with Transport Canada Marine Safety, Fuel Supplier vessels and barges, identified response organizations and the CCG, as the case may be.

The program will be carried out over the following timeframe:

- Internal Notification – Once per year;
- External Notification – Once per year;
- Operational – Once per year; and
- Tabletop Management– Every three (3) years.

The training plans are an integral part of the OHF's emergency plan. Training activities are a tool to ensure the knowledge, skills and ability of the personnel enrolled in the response activities are current and correspond to their roles in an incident.

The detailed exercise program and training plans may be found in Schedules 7 and 7a of this plan. Prior to the acquisition of the project by Agnico Eagle in 2013, the OHF facility operator conducted a Table Top Management exercise in 2011. Under the new ownership of the project and OHF, Agnico Eagle commenced a scheduled progression through the oil pollution incident exercise program in 2014, with OPEP documentation familiarization, emergency equipment audit and theoretical and practical spill response training being conducted before every annual fuel transfer. The last such Incident Management exercise was conducted in April, 2018; delayed from the 3 year span due to unforeseen circumstances. The attendance record may be found in Schedule 7b.

3.8 Spill Scenarios

Traditionally the product that arrives at Roberts Bay in the tanker is Fuel, Aviation Turbine Engine, Jet "A", UN 1863 which has a lubricity additive injected during the delivery process to convert the product to Diesel Fuel, UN 1202. For spill response purposes the substances are identical.

The spill scenarios developed in this section describe responses in respect of the spill size and to a single product category: P50 diesel (UN1202). An SDS sheet for Jet A and the Lubricity additive used to convert it to Diesel Fuel may be found in Schedule 11 of this document.

The scenarios take into account the following factors:

- the nature of the oil product in respect of which the scenario is developed;
- the types of vessels that will be loaded or unloaded at the OHF;
- the tides and currents that prevail at the OHF;
- the meteorological conditions that prevail at the OHF;

- the surrounding areas of environmental sensitivities that would likely be affected by an oil spill;
- the measures that will be implemented to minimize an oil pollution incident; and
- the time within which an effective response to an oil pollution incident can be carried out.

With respect to the nature of P50 diesel when spilled in the marine environment, the following must be taken into consideration when selecting appropriate spill containment and recovery measures:

- **Density:** Diesel has a relatively low density; it will always remain buoyant, even with weathering. Diesel is much lighter than water (specific gravity is between 0.81 and 0.88, compared to 1.03 for seawater)
- **Viscosity:** Diesel has a very low viscosity and will remain fluid and continue to spread, even at low temperatures
- **Pour Point:** Diesel has a very low pour point (the temperature below which an oil will not flow), about -40°C or less, it will always remain fluid and accessible
- **Solubility:** Diesel is insoluble in cold water

Should a spill occur, the key factors influencing the diesel will be:

- Spreading: The slick thins and grows in area
- Advection: The oil moves with the wind and currents
- Weathering: Evaporates and emulsifies; as much as 50% evaporation of the diesel occurs in 24 hours; this does not change viscosity or density dramatically

For most diesel spills, the oil will spread very quickly in the water to a thin layer and remain floating and a fluid. Warm sunny weather will burn off this thin layer as time passes if not recovered.

3.8.1 Scenario #1: Barge Tank Failure (Rupture)

Incident Description:

A large volume of ULSD is observed coming from a leak in the barge below the water line from unknown damage (potential volume could theoretically be up to 186,000 L).

The barge is secured at the Roberts Bay OHF jetty and is pre-boomed with 30" floating skirted boom. A further supply of similar boom together with skimming/temporary tank capacity is staged in reserve at the end of the jetty for immediate deployment.

Weather from prevailing WNW direction, calm sea surface conditions, light winds, negligible complicating factors.

No areas of particular environmental sensitivity are located immediately nearby.

Response Strategy:

- First responder that detects the spill to ensure their personal safety, including safety of the facility and other personnel by activating the emergency communications on the agreed-upon dedicated (Agnico Eagle 9) frequency and the site emergency channel Agnico Eagle 1 to alert the transfer team. The notification will include an instruction to keep non-response related personnel clear of the spill area and eliminate any potential sources of ignition. Upon receiving the news the Agnico Eagle OHF Supervisor advises senior management at the camp.
- With ULSD the key behavioral characteristics that would influence containment and recovery for this scenario would likely be:
 - a. Rapid spreading: The slick would spread very quickly by winds and currents accumulating downwind and down-current against the boom and barge sides or against additional secondary booms when they are deployed to ensure the slick does not escape the area.
 - b. Movement: The slick would move based on local winds and currents: Secondary boom deployments would need to be positioned based on prevailing winds and currents.
 - c. Evaporation: the slick would rapidly lose as much as 50% volume within the first 24-hours. Vapours may present a potential safety hazard within any contained boom area. Gas monitoring should be instituted as soon as possible.
 - d. The oil will be concentrated into thicker volumes and areas against the downwind or down-current boom edge and/or barge sides allowing for recovery opportunities using skimmers and vacuum pumps.
- Fuel Contractor to respond in accordance with their procedures to identify where the leak is originating and attempt to stop the flow (through methods defined in their SOPEP (ie: transferring between tanks, etc.) to minimize the pollution incident.
- If fuel transfer is occurring to the facility tanks, pumping is to be shut down immediately.
- The OHF Oil Transfer Supervisor effectively becomes the on-shore On-Scene Commander until such time as the ICS Operations Section Chief or his delegate assumes those duties.
- Fuel Contractor SOTO/On-Scene Commander and OHF On-Scene Commander/Operations Section Chief assess severity of spill and immediate hazards, including any potential for impacts on safety at Doris North Camp and potential for fire/explosion hazards. (The primary threat of fire is from freshly spilled petroleum. It is important to keep all ignition sources away and to avoid spontaneous combustion. Engine fuels used to support response equipment can ignite or explode if not properly handled. Vapours may travel to source of ignition and flash back. Any

- debris, oily wastes, and garbage collected during operations could add to the fire danger.)
- Fuel Contractor and Agnico Eagle Internal and External Notifications (ie: Coast Guard/Transport Canada Marine Safety) are initiated by the Fuel Contractor Captain as Responsible Party and Agnico Eagle Incident Commander.
 - If there is any potential for impact on communities in the vicinity, communities are to be notified by phone through the Agnico Eagle Community Relations Manager in Cambridge Bay. Given the isolated location of Roberts Bay this is not seen as a factor.
 - Fuel Contractor Captain and Agnico Eagle Incident Commander establish a command post from which operations will be coordinated. The suggestion is made that the Command Post be the previously set up Agnico Eagle “cottage” on the foreshore near the 4 x 5 million litre tanks. The large meeting room at the Doris Camp may also fill the need.
 - Agnico Eagle Incident Commander to Mobilize ERT, if necessary
 - Fuel Contractor Captain and Agnico Eagle Operations Section Chief develop initial strategies based on site conditions i.e.: wind direction, risk of fire, risk to responders, risk to sensitive habitat, etc.
 - Operations Section Chief to restrict access to the area and create checkpoint access station. Note: Agnico Eagle and Fathom Marine have agreed on the identity of the Operations Section Chief no matter which is the Responsible Party.
 - Operations Section Chief establishes response teams dedicated to specific tasks and provides strategic instructions for equipment assembly and deployment i.e. booming, bladder and berm assembly.
 - Fuel Contractor Captain and Operations Section Chief arranges pre-response safety briefing for all workers employed in the initial response efforts.
 - Agnico Eagle Safety and Environmental response team members provide guidance and support to Incident Commander/Operations Section Chief.
 - Agnico Eagle Incident Commander will assign a response team member for weather monitoring and airborne spill status monitoring and reporting.
 - Response team members are deployed on water to ensure boom integrity and assist with adjustments, if required.
 - Heavy equipment operators access and relocate bladders and portable berms to response/recovery area under direction of Operations Section Chief or designate.
 - Vacuum truck operator is mobilized to commence immediate removal of contained product under direction of Operations Section Chief or his designate.
 - Response team members ensure boom is containing the spill, begin assembly of recovery equipment and prepare for deployment of sorbents as needed.
 - The skimmer is deployed and recovery of product to containment commenced.
 - Focus on removal of product to secure containment, integrity of boom containment, protection of people, the facility, and the adjacent foreshore environment, ensuring

sufficient response materials are available, controlling waste management, monitoring weather conditions etc.

- Offsite environmental consultants and regulators with appropriate expertise are consulted to determine potential for environmental effects resulting from spill and to identify and prioritize any mitigation measures that should be undertaken to prevent such effects.
- On-going response efforts
- On-going internal and external communications
- Incident close-out and debriefing
- Formal/Follow-up Reporting

3.8.2 Scenario #2: Barge Pump/Transfer Conduit Incident

Incident Description:

At the connection of the barge pump and transfer conduits, a fitting ruptures spraying out ULSD fuel onto the barge deck and over the side into the water.

The Pumpman is in constant attendance and able to respond within 1 minute to stop the pump.

At a flow rate of (max) 300m³/hr an estimated 5 m³ of product is spilled.

The barge is secured at the Roberts Bay OHF jetty and is pre-boomed with 30" floating skirted boom). A further supply of similar boom together with skimming/temporary tank capacity is staged in reserve at the end of the jetty for immediate deployment.

Weather from prevailing WNW direction, calm sea surface conditions.

Response Strategy:

- First responder that detects the spill to ensure their personal safety, including safety of the facility and other personnel by activating the emergency communications on the agreed-upon channel (site channel selected for the operation, Agnico Eagle 9, or emergency Ch. 1). The notification will include an instruction to keep non-response related personnel clear of the spill area and eliminate any potential ignition sources. Senior Agnico Eagle management at the camp are advised.
- With ULSD the key fate and behavior characteristics that would influence containment and recovery for this scenario would likely be:
 - a. Spreading: The diesel would spread very quickly to a thin film of rainbow and silver sheens downwind from the spill source
 - b. In areas where the diesel is concentrated against the barge or containment boom it may form a thicker film of dull or dark colors
 - c. Evaporation: The spilled product could still lose as much as 50% volume within the first 24-hours

- Fuel Contractor to respond in accordance with their procedures to identify where the leak is originating and attempt to stop the flow (through methods defined in their SOPEP (ie: transferring between tanks, etc.) to minimize the pollution incident
- If fuel transfer to shore is occurring, pumping is to be shut down immediately.
- The Agnico Eagle On Shore Supervisor effectively becomes the Agnico Eagle On Scene Commander to support the barge's response organization and efforts
- Fuel Contractor Captain and Agnico Eagle Incident Commander assess severity of spill and immediate hazards, including any potential for impacts on safety at Doris North Camp and potential for fire/explosion hazards. (The primary threat of fire is from freshly spilled petroleum. It is important to keep all ignition sources away and to avoid spontaneous combustion. Engine fuels used to support response equipment can ignite or explode if not properly handled. Vapours may travel to source of ignition and flash back. Any debris, oily wastes, and garbage collected during operations could add to the fire danger.)
- Fuel Contractor and Agnico Eagle Internal and External Notifications (ie: Coast Guard/Transport Canada Marine Safety) are initiated by Fuel Supplier Captain assisted by Agnico Eagle Incident Commander
- If there is any potential for impact on communities in the vicinity, communities are notified by phone through the Community Relations Manager in Cambridge Bay. Given the isolation of the site this is thought highly unlikely.
- Fuel Contractor Captain and Agnico Eagle Incident Commander establish a command post from which operations will be coordinated
- Agnico Eagle Incident Commander to Mobilize ERT, if required
- Fuel Contractor Captain and Agnico Eagle Incident Commander develop strategy based on site conditions ie: wind direction, risk of fire, risk to responders, risk to sensitive habitat, etc.
- Agnico Eagle Incident Commander to restrict access to the area and create checkpoint access station
- Agnico Eagle Incident Commander establishes response teams dedicated to specific tasks and provides strategic instructions for equipment assembly and deployment ie: bladder and berm assembly
- Fuel Contractor Captain and Agnico Eagle Incident Commander arranges pre-response safety briefing for all workers employed in the response effort
- Agnico Eagle Safety and Environmental response team members provide guidance and support to Incident Commander
- Agnico Eagle Incident Commander will assign a response team member for weather monitoring and airborne spill status monitoring and reporting
- Response team members are deployed on water to ensure boom integrity and assist with adjustments, if required.
- Vacuum truck operator is mobilized to commence immediate removal of contained product under direction of Incident Commander or designate

- The skimmer is deployed and recovery of product to land-based containment commenced if deemed necessary
- Response team members on jetty to ensure boom is containing the spill, begin assembly of recovery equipment and prepare for deployment of sorbents as needed
- Focus on removal of product to secure containment, integrity of boom containment, protection of people, the facility, and the adjacent foreshore environment, ensuring sufficient response materials are available, controlling waste management, monitoring weather conditions
- Offsite environmental consultants and regulators with appropriate expertise are consulted to determine potential for environmental effects resulting from spill and to identify any mitigation measures that should be undertaken to prevent such effects
- On-going response efforts
- On-going internal and external communications
- Incident close-out and debriefing
- Formal/Follow-up Reporting

3.9 Spill Incident Reporting and Investigation Process

Following any oil pollution incident a detailed Systematic Cause Analysis Technique (SCAT) investigation methodology process will be followed as per procedure OHS-SLP 017 Incident Reporting and Investigation. The investigation will determine Immediate/Direct causes, Basic/Root causes, Corrective Actions and Preventive Actions that will be implemented to prevent or reduce the risk of reoccurrence.



Schedules

1. Roberts Bay OHF Bulk Fuel Transfer Procedure (Including Checklists)
- 2a. Photos of OHF Facility
- 2b. Roberts Bay Shoreline Fish Habitat (Substrate types for SCAT)
- 2c. Aerial view of Roberts Bay Environmentally Sensitive Areas
- 2d. Artificial Fish Habitat – Photo Depicting Locations
3. OHF Declaration
4. Hope Bay Site Heavy Equipment List
5. Hope Bay Spill Response Equipment Inventory
6. MDSRC Spill Response Equipment Inventory – Inuvik and Norman Wells
7. OHF Oil Pollution Response Program – Exercise Plan
- 7a. OHF Oil Pollution Response Program – Generic Training Content
- 7b. OHF Oil Pollution Response Program – Training Records
8. Annual Fuel Transfer Plan
- 8a. Inter-company Primary and Secondary Contacts
- 8b. Jetty/Tanker Mooring/Booming Configurations
- 8c. Fuel Supplier Vessel & Barge Configurations & Response Equipment
- 8d. AWOT Checklists
9. Annual Fuel Transfer Risk Assessment Review - 2019
10. First Responder Spill Response Responsibilities and Actions
11. MSDS/SDSs Jet “A” & Lubricity Additive
12. Agnico Eagle Oil Pollution Incident Reporting Form
13. Birds and Oil - CWS Response Plan Guidance
14. Transport Canada Post Oil Transfer Report
15. NT/NU Spill Report Form

1 PURPOSE

To establish a comprehensive standard to ensure all shore preparations, emergency preparedness, communications, equipment and personnel are in place to coordinate between Agnico Eagle and the bulk fuel supplier to transfer fuel between barges moored at the Roberts Bay jetty and the Roberts Bay Oil Handling Facility (OHF).

2 OBJECTIVE

To conduct the transfer of bulk fuel at the Roberts Bay OHF in accordance with all regulatory requirements, without incident to personnel or loss of fuel to the environment.

3 OHF Facility

The OHF facility is located at the Roberts Bay laydown. The facility is comprised of a fuel tank storage farm (5 x 5 million litre tanks) plus a 400,000 litre Jet Fuel, Type A, fuel tank. The OHF transfer operations are supported out of the Sea Lift Command Centre building at Roberts Bay. Fuel is delivered via the Roberts Bay jetty, through 2 temporary hose lines running between vessels moored at the jetty to the Roberts Bay storage tanks. During fuel transfer operations, general traffic in the Roberts Bay area is restricted.

4 EQUIPMENT REQUIREMENTS

4.1 Pre-Transfer Equipment Requirements

Prior to fuel transfer, shore preparations include assembly of two-way communications devices, lighting, signage, PPE, and support equipment as needed at the OHF and along the fuel transfer lines' route. These requirements are listed on the Pre-Transfer Equipment Requirement Checklist (Section 7.1) which must be verified and signed off by the OHF Oil Transfer Supervisor prior to fuel transfer operations. Other requirements to be established to support fuel transfer personnel include a place of temporary shelter from the weather for fuel transfer team members, and provision of temporary sanitary facilities if no permanent facilities are available.

5 ROLES AND RESPONSIBILITIES

It is the responsibility of the fuel supplier to provide all necessary ship and vessel preparations and to control the flow of fuel between the vessel/barge and the shore tanks of the OHF. The supplier also notifies the appropriate regulatory authorities of the transfer operation. The role of Agnico Eagle OHF personnel is to ensure shore preparations, including communications, equipment and personnel available to support the transfer are arranged in advance of fuel transfer operations.

5.1 Agnico Eagle Fuel Transfer Team

The fuel transfer team consists of the Agnico Eagle OHF Oil Transfer Supervisor, all Agnico Eagle personnel involved with the transfer, a supervisor representative from the fuel supplier (Supervisor of Oil Transfer Operations - SOTO) and appropriate qualified members of the fuel supplier vessels and/or barges. The team consists of the following roles during fuel transfer shifts:

- Agnico Eagle OHF Oil Transfer Supervisor
- Fuel Supplier Supervisor/SOTO
- Fuel Supplier pumpman (on-board)
- Agnico Eagle Shift Supervisor
- OHF Hose Monitors/Line walkers (2 per shift)
- OHF Valve and Tank Monitor (1 per shift)

- OHF Traffic control (if required)
- OHF Communications Support (if required)
- Tug Crew (as needed)

Depending on the amount of fuel to be transferred, the operation may extend continuously over several days, necessitating round-the-clock shifts to manage and monitor the transfer. Each shift and its required complement of team members is managed on the **Assigned Roles and Responsibilities Schedule**, an example is provided at the end of this procedure (Section 7.2) **or the equivalent Incident Command System (ICS) document.**

5.2 OHF Oil Transfer Supervisor

The OHF Oil Transfer Supervisor is responsible to ensure all shore preparations are in place prior to commencement of the fuel transfer, proper two-way communications are established and maintained with the fuel supplier and fuel transfer team members for the duration of the transfer, and for supervision of all shore-side operations and staff. The OHF Oil Transfer Supervisor is responsible to ensure the correct amount of fuel agreed to be transferred is verified by flow calculations and barge tank or on-shore tank dips as necessary, and to ensure all the required documentation is completed and signed off between the fuel supplier and Agnico Eagle for all aspects of the transfer (Arctic Waters Oil Transfer (AWOT) checklists, as relevant). It is the responsibility of the Oil Transfer Supervisor to ensure that all personnel involved with the transfer receive the appropriate training to conduct their duties knowledgeably and safely, and that appropriately trained personnel and adequate equipment is available to implement the OHF Oil Pollution Emergency Plan (OPEP). The Oil Transfer Supervisor will complete the **Bulk Fuel Transfer Sequencing Checklist** (Section 7.3) as the operation proceeds.

5.3 OHF Hose Monitors/Line Walkers

The hose monitors/line walkers are responsible to conduct frequent visual inspections of the entire length of the transfer line between the vessels moored at the jetty and shore tanks of the OHF and report on conditions regularly by checking in with the Oil Transfer Supervisor or his delegate at the Sea-Lift Command Post by radio or in person. The Hose Monitors must understand and be prepared to initiate emergency communications concerning the integrity of the fuel transfer line or any other hazards detected during fuel transfer operations.

5.4 OHF Tank/Valve Monitor

The OHF Tank/Valve Monitor regularly records tank volumes during the transfer operation, either by meter or tank dips or both, and monitors for any integrity issues associated with the hose to tank connection at the OHF. This information is communicated regularly to the Oil Transfer Supervisor during the fuel transfer and the Command Post. The Tank/Valve Monitor must understand and be prepared to initiate emergency communications concerning the integrity of the fuel transfer line(s), the tank connection or any other hazards detected during fuel transfer operations.

5.5 Stand-by and Emergency Personnel

Stand-by equipment operators, including boat operators and specialized functional roles such as welders or electricians, and trained emergency response personnel will be on stand-by and mobilized as required.

All members of the Fuel Transfer Team are responsible to ensure they have been trained and understand their role in the fuel transfer operation, and be able to initiate emergency communications if needed. During inclement weather, workers are required to wear suitable clothing for extended periods in the open environment. All fuel transfer team members are required to sign-off on the Bear Notification and Response SOP, be trained in methods of bear deterrence, and in the safe deployment of emergency deterrents with respect to restrictions imposed in using such deterrents when involved with fuel transfer operations.

5.6 Personnel Safety

All fuel transfer team members will review and sign-off this procedure, and a pre-shift meeting will be held during each shift change. Any fuel transfer team member that is required to work in a position where wildlife may be encountered will review and sign the Bear Notification and Response procedure, and be trained in bear deterrence methods appropriate to use during the fuel transfer. A Field Level Risk Assessment (FLRA) will be completed and documented for any deviations from established procedures, and the FLRA will be reviewed and signed by all members of the fuel transfer team. The SDS sheets for any product being transferred will be reviewed and exposure hazards and emergency procedures relevant to each product will be discussed with team members, including any specific PPE requirements.

Standard site Personal Protective Equipment (PPE) will be worn, consisting of steel-toed boots, high visibility outerwear, hard hat, and safety glasses. Additionally, Personal Floatation Devices (PFD) will be worn near water where there is a risk of drowning, and during non-daylight hours, workers will be provided with high-powered flashlights (torches/lanterns). Line walkers will operate in teams of two, be equipped with bear kits, and will regularly check in with the Sea-Lift Command Post. Depending on time of year and weather conditions, it is recommended that outside workers be prepared with insulated outerwear, gloves and headwear.

6 PROCEDURE

6.1 Shore Preparations

In advance of transfer, the Sea-Lift Command Post will be activated and supplied to control the shore-side operations, and be the point of contact for the OHF operations.

The transfer hose(s) route between the jetty and the OHF facility will be established and delineated with markers.

A sufficient number of light plants will be staged along the transfer hose route and at any shore tank manifold to provide adequate lighting during non-daylight hours.

“No Smoking, No Open Flame” signs will be erected along the transfer hose route.

Stocked spill kits and fire suppression equipment will be placed strategically along the transfer hose route.

The two-way radio system will be tested between all work locations and sufficient radios, replacement batteries and charging stations will be provided for all fuel transfer team members (back-up air horns will be available in accordance with the Emergency Communications Signals instructions (Section 7.4).

PFDs or other appropriate floatation gear for working around water will be assembled, and bear kits will be stocked at the Sea-Lift Command Post.

The Emergency Spill Response Equipment cache at the Roberts Bay jetty will be inventoried and have any deficiencies rectified.

A support boat will be launched and moored nearby, equipped with required marine safety gear and fuel.

6.2 Fuel Supplier Arrival and Pre-Transfer Meeting and Communications

The fuel supplier barge will moor securely to the jetty and their supervisor or representative will meet with the OHF Oil Transfer Supervisor, or designated on-shore Agnico Eagle representative. Oil spill containment booms will be secured in place prior to any fuel transfer.

6.3 Communications

The Agnico Eagle OHF Oil Transfer Supervisor and fuel supplier supervisor will review roles, responsibilities, and transfer procedures. The two-way radio communications system will be agreed upon and implemented, including specific radio frequencies that may be utilized during the transfer. In addition, the emergency communication

back-up systems and signals using air horns will be agreed upon. Refer to **Emergency Communications Signals** instructions (Section 7.4). A Communications Plan that includes frequency information and approved call-signs will be available and used by all participants.

Note: **The agreed-upon OHF radio channel must be used by all members of the fuel transfer team, including the fuel supplier, for the entire duration of the transfer until full completion of the transfer, including launching and retrieving of the pig, sequential closing of all valves is confirmed, and hose sections are disconnected and secured (capped/plugged).**

Due to the location of the OHF storage tank valves, direct line of sight between the Tank/Valve Monitor and the pump man on the barge moored at the jetty is not possible. Therefore pre-approved back up air horn signals will be used. The OHF Oil Transfer Supervisor will also brief the fuel supplier supervisor on the relevant elements of the Hope Bay Emergency Response Plan, such as the Emergency Notification procedures and Bear Alert Notification system.

The Agnico Eagle OHF Oil Transfer Supervisor and fuel supplier supervisor will confirm information on the Inter-company Primary and Secondary Contacts List from the Annual Fuel Transfer Plan is current and accurate, and make any updates or site-specific changes needed to ensure correct and timely communications between vessel(s) and shore representatives.

6.3.1 Delay, Cancel or Emergency Shut Down Procedures Inter-company Organization Chart and Contact Information

Conditions that prevent or shut down the transfer will be agreed to between the OHF Oil Transfer Supervisor and the fuel supplier supervisor. Fuel transfer will not proceed, or be shut down, when:

- Communications are lost
- When an electrical storm is present or predicted
- Fire occurs
- A leak or spill occurs of any size (system failure, tank overflow, etc.)
- A tangible threat of leak or spill occurs, including damage to hoses or couplings
- Conditions develop that jeopardize the mooring of the barge to the jetty i.e.: increase in wind or swells
- Any compromises to the fuel transfer lines, or ability to monitor line is lost
- Other possible issues of human safety or environmental concern (dangerous wildlife encounter, severe deterioration in visibility conditions)
- Any condition deemed dangerous by the Oil Transfer Supervisor or fuel supplier supervisor

6.3.2 Identification of Emergency Response Roles

The Agnico Eagle OHF Oil Transfer Supervisor and fuel supplier supervisor will agree in advance on emergency response roles in the event of a fire, spill or other emergency, dependent on location and type of emergency i.e.: Incident Commander and other key roles and any supporting or stand-by roles are assigned.

In the event of a spill, the OHF OPEP and the fuel supplier Spill Response Plan/SOPEP will be implemented.

Prior to the start of fuel transfer the site stand-by and trained emergency response personnel will be prepared and available for the duration of the fuel transfer to respond to emergencies. The individuals on shift identified for these roles will be managed on the Assigned Roles and Responsibilities Schedule (Section 7.2) or the equivalent Incident Command System form.

There will be 24 hour medical coverage available during the transfer.

6.3.3 Agreed Fuel Transfer Volume

The fuel supplier and Agnico Eagle Oil Transfer Supervisor will agree on the volume of fuel to be transferred.

6.4 Pre-Transfer Fuel Volume Verifications

Prior to any pumping, all shore tanks and barge holds will be gauged (dipped), witnessed and recorded on the appropriate fuel transfer documentation (AWOT Transfer) by representatives of both Agnico Eagle and the fuel supplier. The temperature of the product will be recorded and the fuel verified to be free of water contamination.

The volume of product contained within the length of the fuel transfer hose(s) between the barge and the OHF tank will be calculated and agreed upon by both parties.

6.5 Offloading Equipment from Barge for Transfer

The OHF Oil Transfer Supervisor and fuel transfer team will assist with offloading any equipment from the barge that is required to be shore-side for the transfer, under the direction of the fuel supplier supervisor.

6.6 Transfer Hose Placement

The transfer hose(s) follow a route from the barge pump manifold, through a containment trough between the barge and jetty, along the west side of the Roberts Bay jetty and follows the jetty road to the tank bay. To reach Tank #1 the line follows the edge of the bank and foot of the rocky outcrops to the tank. All hose couplings will be wired or strapped closed and each coupling will be positioned over a spill containment device lined by a layer of sorbent spill pads.

Any areas along the route that may cause chafing or pinching of the hose will be avoided, and any sharp rocks removed. If any point along the road route there is a requirement to restrict traffic while the transfer is occurring, appropriate delineation, signage and flag persons, if necessary, will be deployed. Any tripping hazards along the route will be removed.

The hose(s) route and placement will be inspected by the OHF Oil Transfer Supervisor and the fuel supplier supervisor representative. Hose test certification tags, or a valid hose certificate, confirming that the hose(s) have been satisfactorily inspected during the past 12 months, will be verified against each hose section.

6.7 Tank Preparation

The Agnico Eagle Oil Transfer Supervisor will ensure the fittings on the shore tank valves are compatible with the transfer hose fittings.

Agnico Eagle OHF personnel will connect the hose(s) to the correct nozzle on the OHF storage tank. A drip tray will be placed beneath the connection. *Note:* a pig launcher and pig catcher will be installed on the appropriate ends of the transfer hose.

All valves are to be closed/locked/blind-flanged, except the fuel transfer line.

The OHF storage tanks are grounded as per engineered drawings, and the fuel transfer hoses are integrally grounded. The fuel supplier pumping procedures include identified means to eliminate static to ensure the safety of the process.

6.8 Pre-booming of barges and/or vessels

Barges and/or vessels moored at the jetty integral to the fuel transfer will be protected by skirted boom and secured in such a manner as to trap any spill within the enclosure(s). Booming configurations are diagramed in Schedule 8b.

6.9 Verification of Transfer Area Preparedness

The Agnico Eagle OHF Oil Transfer Supervisor and fuel supplier supervisor will perform a walk-through of all final preparations prior to commencing the transfer.

The OHF facility area will be restricted from access by general traffic, including helicopter traffic.

6.10 Fuel Transfer

If both the OHF Oil Transfer Supervisor and fuel supplier supervisor are satisfied the transfer can begin, a broadcast will be made at the OHF to announce the commencement of the transfer.

The Oil Transfer Supervisor will instruct the shore tank valve to be opened. All valves will be confirmed to be open by performing radio verification between the relevant Fuel Transfer Team Members. Barge discharge will begin at a slow rate to allow checks along the transfer hose for leaks and to reduce build-up of static electricity.

The fuel supplier monitors the pumping pressure and increases the rate when conditions indicate it is appropriate to increase. Once increased in rate, the flow should remain constant to prevent surges. Pressure gauge readings or volume meter readings are regularly conveyed to the Oil Transfer Supervisor.

The Oil Transfer Supervisor will maintain a log of all activities associated with the fuel transfer, including commencement time of transfer, all personnel on shift, and irregularities or changes to established procedures.

Weather conditions and forecasts should be checked frequently and logged.

6.11 Hose, Tank and Valve Monitoring

Monitors will be in place at the OHF tank manifold, and line walkers will patrol the entire length of transfer hose(s) between the shore tank and jetty barge connection inspecting for leaks, blisters or any irregularities in the fuel transfer line. Each coupling and containment tray is to be routinely checked for evidence of leaks. The area around the jetty is to be inspected, including the transfer hose path, on the barge, the secondary containment trough and the water surface between the barge and jetty. Any sign of a fuel leak is to be reported immediately to the Oil Transfer Supervisor, and any serious leak will require the Monitor to initiate an EMERGENCY STOP TRANSFER.

The Tank Valve/Volume Monitor will report volume or meter readings routinely to the Oil Transfer Supervisor during the fuel transfer. Policy on the Hope Bay project under the *Hydrocarbon Management Plan* is to fill fuel tanks to safe-filling volumes no greater than 90%.

The Tank Valve Monitor is not permitted to leave the assigned areas unless a replacement is present.

6.12 Fuel Transfer Completion and Hose Disconnection

When the agreed fuel volume is transferred and the line pigged to displace the line pack to the tank all valves will be closed and secured. **Radio communications between supplier and OHF must be maintained at all times on the agreed-upon OHF radio frequency during this process until fully complete.** The hose sections will be disconnected over a containment device and hose ends capped and plugged.

At the completion of fuel transfer, all shore tanks and barge holds will be gauged (dipped), witnessed and documented on the appropriate transfer documentation.

6.13 Post-Transfer Activities

Any final documentation is verified and signed by the fuel supplier and Agnico Eagle representative. This may include additional Arctic Waters Oil Transfer Checklists (AWOT) or other documentation provided by the fuel supplier.

All equipment staged for the transfer will be returned for proper storage.

All hose coupling containment trays will be cleaned and stored and any spill pads in the tray recycled if clean, or sent to waste management if soiled.

The Spill Response sea cans will be secured, and the boat(s) will be recovered and thoroughly washed and flushed with fresh water.

The OHF Supervisor shall be responsible for completion and submission of the Post Oil Transfer Report, a copy of the form is included in Schedule 14.

7 ATTACHMENTS

7.1 Pre-Transfer Equipment Requirement Checklist

	Roberts Bay OHF Bulk Fuel Transfer Procedure
PRE-TRANSFER EQUIPMENT REQUIREMENT CHECKLIST	

Transfer Date: _____

	EQUIPMENT REQUIREMENTS	Checked	Date	Signature
Sea-Lift Command Centre	Paper, notebook, pens, pencils, whiteboard markers			
	Roberts Bay marine chart			
	Satellite phone,			
	TMAC administration contact numbers			
	Desk, chairs, table			
	Coffee Maker/Thermos/Cups			
	Water dispenser/glasses			
	Waste sorting receptacle(s)			
	Portable washcar			
General PPE and Supplies	TMAC & Marine VHF Base Radios			
	Two-way Radios and charger bank			
	Bear Kits, w/ non-flare deterrents			
	Airhorns			
	PFDs as needed			
	Pocket Card with Emergency Signals			
	Flashlights/Torches			
	Small tool kit w/wire snips			
Transfer Area Preparedness	Traffic Delineators			
	Light Plants			
	Signs "No Smoking", Restricted Area			
	Fire Extinguishers/ Suppression Units			
	Spill Kits, spill pad bales and rolls			
	Drip Trays for each hose connection			
	Wire/Straps for hose couplings			
Mobile Equip.	Marine Boat, motor, fuel tank			
	Marine Boat safety equipment kit			
	Boom Truck or crane			
	Vacuum Truck (stand-by)			
	Marine Emergency Spill Response Equipment Inventory – Sea Can # List			
	Copy of OPPP/OPEP			

Notes:

Edited; May, 2017

7.2 Assigned Roles and Responsibilities Schedule



Roberts Bay OHF
Bulk Fuel Transfer Procedure

ASSIGNED ROLES AND RESPONSIBILITIES SCHEDULE

TRANSFER DATE: _____

POSITION	RADIO CONTACT CHANNEL	SHIFT 1 (name) Time Start:	SHIFT 2 (name) Time Start:
OHF Oil Transfer Supervisor			
Fuel Supplier Supervisor			
Fuel Supplier Pump Man			
Valve/Tank Volume Monitor			
Line Walker			
Line Walker			
STAND-BY:			
Flag Person			
Boat Operator			
Vacuum Truck Operator			
Crane Operator			
Medic			

Notes: _____

OHF Bulk Fuel Transfer – F – 002 Rev. 1

7.3 Bulk Fuel Transfer Sequencing Checklist

	Roberts Bay OHF Bulk Fuel Transfer Procedure
BULK FUEL TRANSFER SEQUENCING CHECKLIST	

		TRANSFER DATE:	DATE COMPLETED	Signature
	TASK			
Sea-Lift Command Centre	Sea-Lift Command Centre Activated?			
	Radios and Chargers Supplied?			
	Administrative Supplies Available?			
	Bear Kits available?			
	PFDs available?			
	First Aid Kit available?			
	Flashlights/torches/headlamps available and working?			
	Marine Chart for Roberts Bay?			
	Satellite Phone available, with contact numbers?			
	Copies of OHF Bulk Fuel Transfer Procedure available?			
	Oil Pollution Emergency Plan (OPEP) on site?			
	Emergency Communications Signal Chart Posted?			
	Red flags available?			
	FLRA Cards on site?			
Pre-Transfer Area Preparedness	Coffee and water available?			
	Sanitary facilities arranged?			
	Transfer hose route delineated?			
	Light plants in place for night work?			
	Fire Suppression Equipment along hose route?			
	Spill Kits along hose route?			
	"No Smoking" Signage erected along route?			
	Tripping hazards, hose hazards removed?			
	Traffic restricted if required? Signage?			
	Fuel supplier barge and/or vessel boomed?			
Communications /Documentation	Marine Spill Response Equipment inventoried?			
	TMAC OT Supervisor/Fuel Supplier meeting conducted?			
	Two-way radio communications agreed on?			
	Two-way radio communications tested for all locations?			
	TMAC Hope Bay Emergency Procedures reviewed?			
	Emergency Communications agreed on?			
	Inter-company Org. chart contact info. verified?			
	Emergency roles identified?			
	Assigned Roles and Responsibilities Schedule completed?			
	Fuel Volume Agreed to?			
Fuel Verifications	AWOT Transfer Checklists being completed?			
	Pre-transfer fuel volume verifications completed?			
	Shore tank(s) dipped?			
	Barge tank(s) dipped?			
	Fuel temperature recorded?			
	Hose volume calculated?			
Mobile Equip.	No water contamination detected?			
	Marine Boat launched?			
	Safety equipment and fuel in boat?			
	Vacuum truck on stand-by?			
	Crane Operator available?			
	Equipment removed from barge as needed?			

OHF Bulk Fuel Transfer Procedure – F – 003 Rev. 1

	Roberts Bay OHF Bulk Fuel Transfer Procedure
BULK FUEL TRANSFER SEQUENCING CHECKLIST	

Transfer Hose Placement and connection	Hose follows established route?		
	All chafing or pinch points eliminated?		
	Containment tray available under each coupling?		
	Containment trays lined with sorbent pads?		
	Couplings wired closed?		
	Each hose section has a test certification tag? or		
	Hose test certification w/i last 12 months? (retain copy of testing)		
	Hose connects correctly to OHF storage tank manifold?		
	Pig catcher installed in line?		
	All other valves closed and locked?		
Fuel Transfer	All areas well lit?		
	Containment trough between barge and jetty?		
	Final walkthrough completed with TMAC/Fuel Supplier?		
	All roles present for shift?		
	Crew meeting conducted?		
	Emergency stop communication signals reviewed?		
	All roles in position?		
	Announcement to commence transfer broadcast at OHF?		
	Helipad notified to keep all heli operations clear of OHF area?		
	Shore tank valve opened?		
	Pumping start time documented?		
	Line walkers confirm no leaks?		
	Tank Valve Monitor confirms no leaks?		
	Log Maintained by Oil Transfer Supervisor?		
	Pumping stop time recorded?		
Transfer Completion	All valves closed?		
	Pig removed?		
	Hoses disconnected over containment, capped, rolled up?		
	Shore and barge tanks dipped and recorded?		
	Fuel temperatures measured and recorded?		
	All final documentation is signed off?		
	All equipment returned for proper storage?		
No spills or leaks detected?			

Notes:



8 APPROVAL RECORD

NAME	POSITION	DATE	REV #	NOTES

Schedule 2a. Photos of Facility



Photograph 1



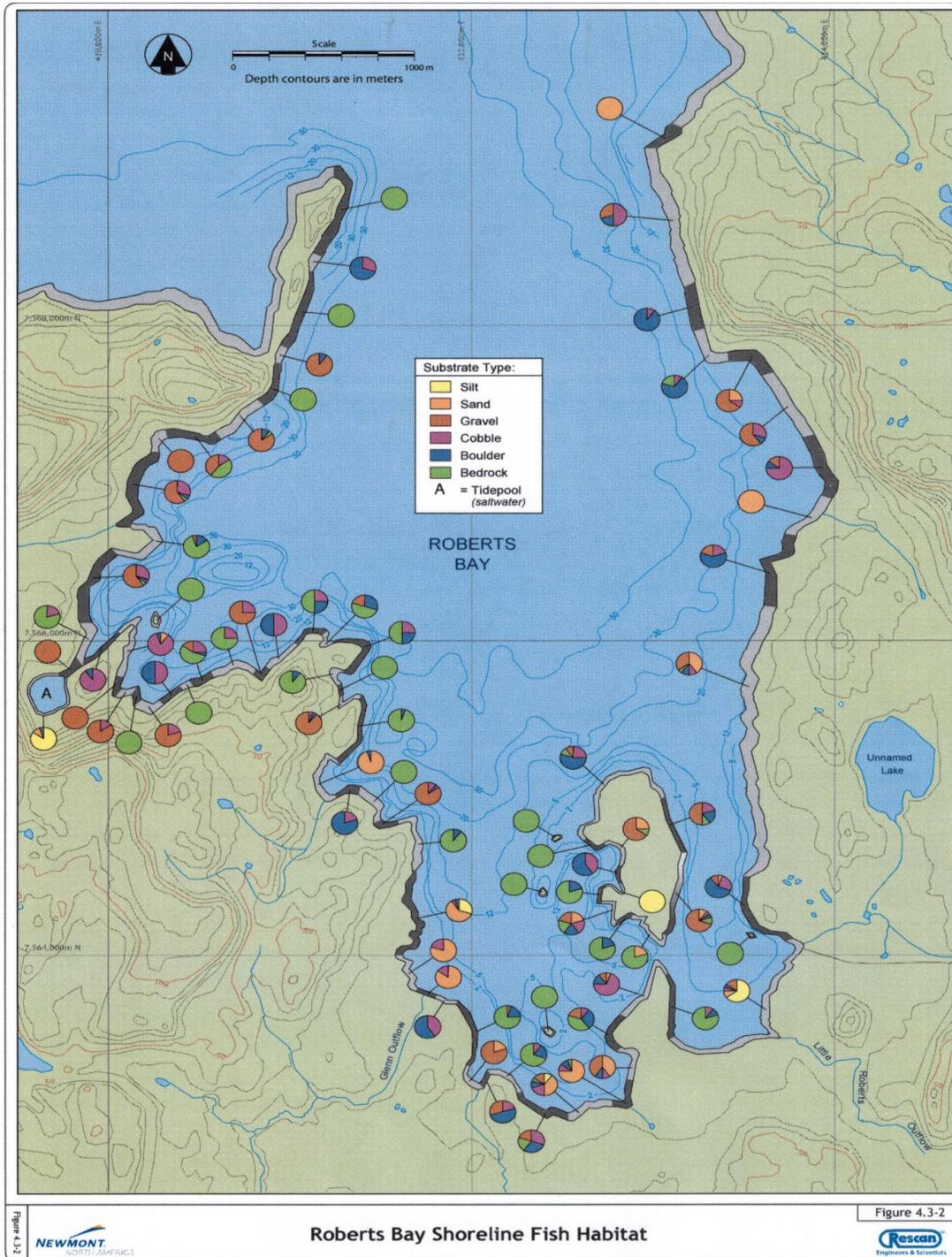
Jetty Photograph 2



Photograph 3

Aerial view looking to the north at operation areas. The jetty tank farm is to the left and the 5 million litre tank #1 to the right.

Schedule 2b. Roberts Bay Shoreline Types & Fish Habitats



Schedule 2c. Aerial of Roberts Bay Sensitive Areas and Artificial Fish Habitat



2d. Artificial Fish Habitat



☆ = Artificial fish habitat

Schedule 3. TMAC OHF Declaration**OIL HANDLING FACILITY DECLARATION**

Pursuant to paragraph 168(1) of the *Canada Shipping Act 2001, I*, **TMAC Resources Inc.**, declare that to comply with the *Response Organizations and Oil Handling Facilities Regulations*, respecting the circumstances in which operators of oil handling facilities shall report discharges of pollutants, the manner of making the reports and the persons to whom the reports shall be made; all the information contained in the submission is true and complete to the best of my ability and accurately reflect our interpretation of the regulations.

The person(s) listed below are authorized to implement the oil pollution emergency plan.

Chris McMahon / Scott Pye, Hope Bay, Nunavut, site phone 867 988 6882 Ext. 131

chris.mcmahon@tmacresources.com scott.pye@tmacresources.com

Doug Brown / Ken Cook, Hope Bay, Nunavut, site phone 867 988 6882 Ext. 138

doug.brown@tmacresources.com ken.cook@tmacresources.com

Kyle Conway / Sarah Warnock Hope Bay, Nunavut, site phone 867 988 6882 Ext. 102

enviro@tmacresources.com



(Signed by the operator of the oil handling Facility or its representative)

July 17, 2020

Date

Calum Semple
Executive Vice President, Operations
TMAC Resources Inc.
M 416-558-5057
O 647-480-3117
calum.semple@tmacresources.com

Schedule 4. Hope Bay Heavy Equipment List

Hope Bay Site Heavy Equipment List
as at: May 19th, 2020

Equipment	Description
AD001	SURFACE MAINTENANCE GENERAL
AD002	MINE MAINTENANCE GENERAL
AL002	PLATFORM CMAC ANFO LOADER
AL003	PLATFORM CMAC ANFO LOADER
AL004	GETMAN ANFO LOADER
AT001	STINGER LOADER IT28G CAT (REP - LD002-S)
AT002	HYD HAMMER ATTACHMENT STELCO SEL1500S
AV001	ALL-TERRAIN VEHICLE RIMPULL FLAT DECK
AV001-C	CRANE ON RIMPULL
AV002	ALL-TERRAIN VEHICLE SNO-CAT TUCKER TERRA
AV003	ALL-TERRAIN VEHICLE SNO-CAT BOMBARDIER
BO401	MACLEAN 928 BOLTER
BO402	MACLEAN 928 BOLTER
BO403	BOLTER PLATFORM CMAC-DHS
BO403-A	BOLTER ARM CMAC-DHS
BO404	BOLTER PLATFORM CMAC-DHS
BO404-A	BOLTER ARM CMAC-DHS
BO405	BOLTER PLATFORM CMAC-DHS
BO406	MACLEAN 928 BOLTER
BO407	ATLAS COPCO 235 BOLTER
BP001	BOLTER PENDANTS (ELECTRICAL)
BS001	BUS MERCEDES
BS002	BUS E450 FORD 2010 (14 PASSENGER)
BS003	BUS E450 FORD 2010 (24 PASSENGER)
BT802	BOOM TRUCK GETMAN
BU4-1	BUCKET 4.4 YARD ROCK BUCKET
BU4-2	BUCKET 4.4 YARD ROCK BUCKET
BU4-3	BUCKET 4.4 YARD ROCK BUCKET
BU6-1	BUCKET ROCK R1600 SCOOPS 6.3 YD
BU6-2	BUCKET ROCK R1600 SCOOPS 6.3 YD
BU6-3	BUCKET ROCK R1600 SCOOPS 6.3 YD

CK001	COMPACTOR (PACKER)
CK002	COMPACTOR (PORTABLE) ID PIC ATTACHED
CK003	COMPACTOR (PORTABLE)
CP001	COMPRESSOR INGERSOLL RAND (TRAILER UNIT)
CP003	COMPRESSOR INGERSOLL RAND
CP009	COMPRESSOR DEVILBISS (MAIN SHOP AIR)
CP010	COMPRESSOR GARDNER DENVER (SHOP BACKUP)
CR001	CRANE GROVE
CR002	CRANE LINKBELT
DR701	CMAC PLH LONGHOLE DRILL
DR702	CMAC LONGHOLE DRILL
DR703	CMAC LONGHOLE DRILL
DZ001	DOZER D6R CAT
DZ002	DOZER D8T CAT
EM003	FIRE TRUCK F550
EM036	AMBULANCE F350
EQ009	TELEHANDLER CATT11055 (GEOTECH)
EQ010	SKIDSTEER JOHN DEERE 319DT (GEOTECH)
EQ015	MINECAT 6475 (GEOTECH)
EX001	EXCAVATOR 325DL CAT
EX002	EXCAVATOR 308C CAT
EX003	EXCAVATOR 329 CAT
EX004	EXCAVATOR 349EL CAT
EX806	EXCAVATOR KUBOTA KX018-4
EXB01	EXB01 BUCKET ASSY
EXB02	EXB02 BUCKET ASSY
EXB03	EXB03 BUCKET ASSY
EXB05	EXB05 BUCKET ASSY
EXB07	EXB07 BUCKET ASSY
EXB08	EXB08 BUCKET ASSY
EXB10	EXB10 BUCKET ASSY 329F (EX003)
FL001	FORKLIFT 930 JCB ROUGH TERRAIN
FM001	FUSION MACHINE McELROY
FM002	FUSION MACHINE McELROY
GR003	GRADER 14M CAT
GR805	GRADER GETMAN 805 RDG-1504C
GS001	GENSET LUGGER TRAILER MOUNTED
GS003	GENSET LUGGER TRAILER MOUNTED



GS004	GENSET LUGGER TRAILER MOUNTED
GS005	GENSET KUBOTA (MOUNTED IN HV005 FUEL-TK)
GS010	GENSET CAT C18 (CPH BACKUP)
GS011	GENSET CAT C18 (CPH BACKUP)
GS013	GENSET CAT C27 (PARKED)
GS016	GENSET CAT SR4B (CPH BACKUP)
GS017	GENSET CAT C27 (CPH BACKUP)
GS025	GENSET KUBOTA (ROB BAY)
GS026	GENSET CAT (DORIS LAKE PRIMARY POWER)
GS027	GENSET KUBOTA (AIR STRIP BACKUP)
GS028	GENSET ISUZU (AIR STRIP)
GS029	GENSET CUMMINS (FIRE PUMP HOUSE)
GS049	GENSET ISUZU (WINDY)
GS050	GENSET CAT (IN STORAGE)
GS060	GENSET PERKINS (BOSTON)
GS061	GENSET PERKINS (BOSTON)
GS062	GENSET CUMMINS (BOSTON)
GS063	GENSET CUMMINS (BOSTON)
HB001	HOTBOX KUBOTA TRAILER MOUNTED
HB002	HOTBOX ALLMAND TRAILER MOUNTED
HT001	HAUL TRUCK 725 CAT
HT003	HAUL TRUCK 740B CAT
HT004	HAUL TRUCK 740B CAT
HT301	HAUL TRUCK AD30 CAT
HT302	HAUL TRUCK AD30 CAT
HT303	HAUL TRUCK AD30 CAT
HT304	HAUL TRUCK AD30 CAT
HT305	HAUL TRUCK AD30 CAT
HT306	HAUL TRUCK AD45 CAT
HV001	HWY TRUCK WINCH TRUCK
HV002	HWY TRUCK KENWORTH NON POTABLE TRUCK
HV003	HWY TRUCK KENWORTH FUEL TRUCK
HV004	HWY TRUCK STERLING FUEL TRUCK
HV005	HWY TRUCK PETERBUILT LUBE TRUCK
HV006	HWY TRUCK PETERBUILT ROLL OFF TRUCK
HV007	HWY TRUCK KENWORTH FLAT DECK TRUCK
HV008	HWY TRUCK PETERBUILT POTABLE WATER TRUCK
HV009	CEMENT TRUCK REIMER



HV010	CEMENT TRUCK KENWORTH
HV011	CEMENT TRUCK KENWORTH
HV012	CEMENT TRUCK KENWORTH
HV013	SHUNT TRUCK KALMAR-SINGLE AXLE
HV014	SHUNT TRUCK CAPACITY-TANDEM
HV015	HWY TRUCK KENWORTH JET FUEL
HV016	HWY TRUCK PORTABLE WASH TRUCK
JU201	ATLAS COPCO 282 BOOMER JUMBO
JU202	ATLAS COPCO 282 BOOMER JUMBO
JU203	ATLAS COPCO H104 BOOMER JUMBO
JU204	ATLAS COPCO H104 BOOMER JUMBO
JU205	ATLAS COPCO L2D BOOMER JUMBO
LD001	LOADER 930H CAT
LD001-F	FORKS LOADER 930H CAT
LD002	LOADER IT28G CAT
LD002-F	FORKS LOADER IT28G CAT
LD003	LOADER/BACK HOE 420F CAT
LD004	LOADER 930K CAT
LD008	LOADER 980H CAT
LD009	LOADER 988H CAT
LD009-F	FORKS LOADER 988H CAT
LD980-F	FORKS 980H LOADER CAT (NUNA)
LDB01	LDB01 BUCKET ASSY
LDB02	LDB02 BUCKET ASSY
LDB04	LDB04 BUCKET ASSY
LDB05	LDB05 BUCKET ASSY
LDB07	LDB07 BUCKET ASSY
LDB08	LDB08 BUCKET ASSY
LDB09	LDB09 BUCKET ASSY
LDB10	LDB10 BUCKET ASSY
LDB11	LDB11 BUCKET ASSY
LDB12	LDB12 BUCKET ASSY
LDB13	LDB13 BUCKET ASSY
LT002	LIGHT TOWER WACKER
LT003	LIGHT TOWER WACKER
LT005	LIGHT TOWER WACKER
LT006	LIGHT TOWER WACKER
LT007	LIGHT TOWER MAGNUM



LT008	LIGHT TOWER MAGNUM
LT009	LIGHT TOWER MAGNUM
LT011	LIGHT TOWER MAGNUM
LT013	LIGHT TOWER MAGNUM
LT014	LIGHT TOWER MAGNUM
LT015	LIGHT TOWER WACKER
LT016	LIGHT TOWER WACKER
LV001	LIGHT VEHICLE TRUCK 2008
LV003	LIGHT VEHICLE TRUCK 2008
LV007	LIGHT VEHICLE TRUCK 2010
LV008	LIGHT VEHICLE TRUCK 2010
LV010	LIGHT VEHICLE TRUCK 2005
LV012	LIGHT VEHICLE TRUCK 2011
LV013	LIGHT VEHICLE TRUCK 2011
LV014	LIGHT VEHICLE TRUCK 2011
LV015	LIGHT VEHICLE TRUCK 2010
LV016	LIGHT VEHICLE TRUCK 2011
LV017	LIGHT VEHICLE TRUCK 2011
LV020	LIGHT VEHICLE TRUCK 2011
LV024	LIGHT VEHICLE TRUCK 2011
LV026	LIGHT VEHICLE TRUCK 2011
LV027	LIGHT VEHICLE TRUCK 2011
LV028	LIGHT VEHICLE TRUCK 2011
LV028-C	CRANE 5T MOUNTED ON LV028 SERVICE TRUCK
LV030	LIGHT VEHICLE TRUCK 2010
LV031	LIGHT VEHICLE TRUCK 2010
LV032	LIGHT VEHICLE TRUCK 2010
LV034	LIGHT VEHICLE TRUCK 2010
LV035	LIGHT VEHICLE TRUCK 2005
LV037	LIGHT VEHICLE TRUCK 2011
LV038	LIGHT VEHICLE TRUCK 2011
LV043	LIGHT VEHICLE TRUCK 2010
LV980-C	CRANE MOUNTED ON NUNA LV980 PICKUP
MB100	MANBASKET
MC803	MAN CARRIER A64 GETMAN
ML002	MANLIFT S80 GENIE
ML004	MANLIFT Z6034 GENIE
ML005	MANLIFT S60 GENIE



ML006	MANLIFT S65 GENIE
ML007	MANLIFT S65 GENIE
ML010	MANLIFT GENIE
ML011	MANLIFT S85 GENIE
PH001	PORTABLE HOIST ROTARY
PH002	PORTABLE HOIST ROTARY
PH003	PORTABLE HOIST ROTARY
PH004	PORTABLE HOIST ROTARY
PH005	PORTABLE HOIST ROTARY
PH006	PORTABLE HOIST ROTARY
PH007	PORTABLE HOIST ROTARY
PH008	PORTABLE HOIST ROTARY
PH009	PORTABLE HOIST ROTARY (YELLOW)
PH010	PORTABLE HOIST ROTARY (YELLOW)
PH011	PORTABLE HOIST ROTARY (YELLOW)
PH012	PORTABLE HOIST ROTARY (YELLOW)
PH810	GETMAN A64 PALLET HANDLER (FUEL)
PU001	PUMP (WATER) GODWIN
PU002	PUMP (WATER) GODWIN
PU003	PUMP (WATER) GODWIN
PU004	PUMP (WATER) GODWIN
PU005	PUMP (WATER) GODWIN
PU008	PUMP (CEMENT) PUTZ
PW001	PRESSURE WASHER PORTABLE
RC101	RAISE CLIMBER ABI-5-AA ARKBRO(ALIMAK)
RC101-B	BASKET RAISE CLIMBER ABI-5-AA ARKBRO
RC101-G	PINION GEARS (6) RAISE CLIMBER ARKBRO
RC102	ALICAB SINGLE DRIVE 1101
RS001	REACH STACKER TEREX
RS002	REACH STACKER HYSTER
SC501	SCOOP R1300 CAT
SC502	SCOOP R1300 CAT
SC502-F	FORKS SCOOP R1300 CAT
SC502-S	STINGER SCOOP R1300 CAT
SC503	SCOOP R1600 CAT
SC504	SCOOP ST-2G ATLAS COPCO
SC505	SCOOP R1300 CAT
SC506	SCOOP R1600 CAT



SC507	SCOOP R1600 CAT
SC508	SCOOP ST-2G ATLAS COPCO
SC509	SCOOP R1600 CAT
SC510	SCOOP R1300 CAT
SC511	SCOOP R1300G CAT
SC512	SCOOP R1700 CAT
SL001	SCISSOR LIFT SJ3220 SKYJACK
SL002	SCISSOR LIFT SJ3220 SKYJACK
SL003	SCISSOR LIFT GS5390 GENIE
SL004	SCISSOR LIFT GS2632 GENIE
SL801	SCISSOR LIFT A64 GETMAN
SL807	SCISSOR LIFT A64 GETMAN
SL808	SCISSOR LIFT WALDON SLX 6100
SM001	SNOW MACHINE POLARIS
SM002	SNOW MACHINE POLARIS
SM003	SNOW MACHINE POLARIS
SM004	SNOW MACHINE POLARIS
SM005	SNOW MACHINE SKI DOO
SM006	SNOW MACHINE SKI DOO
SM007	SNOW MACHINE SKI DOO
SM008	SNOW MACHINE SKI DOO
SS001	SKIDSTEER S70 BOBCAT (MILL)
SS002	SKIDSTEER S70 BOBCAT (MILL)
SS004	SKIDSTEER 257 CAT
SS004-F	FORKS SKIDSTEER 257 CAT
SS005	SKIDSTEER 272H CAT
SS005-F	FORKS SKIDSTEER 272H CAT
SS005-S	FORKLIFT JIB - SKIDSTEER 4500-KG
SS005-S2	FORKLIFT JIB - SKIDSTEER 1000-KG
SS007	SKIDSTEER 287C CAT
SS007-F	FORKS SKIDSTEER 287C CAT
TH002	TELEHANDLER G1055 JLG
TH002-F	FORKS TELEHANDLER G1055 JLG
TH003	TELEHANDLER TL943 CAT
TH003-F	FORKS TELEHANDLER TL943 CAT
TH005	TELEHANDLER TL1255 CAT
TH005-F	FORKS TELEHANDLER TL1255 CAT
TH005-F2	FORKS TELEHANDLER TL1255 CAT



TH804	TELEHANDLER TL943 CAT
TH804-F	FORKS TELEHANDLER TL943 CAT
TH809	TELEHANDLER JLG
TH809-B	BASKET TELEHANDLER JLG
TR002	TRAILER 100 TON LOWBOY
TR003	TRAILER AIR RIDE 53' STEP DK 40' FLAT DK
TR008	TRAILER SCISSOR DROP DECK LIVE ROLL
TR010	TRAILER 46' ENCLOSED
TR011	TRAILER 48' ENCLOSED
TR012	TRAILER DEICING WITH MAN LIFT
UDS-AL100	AL67 COMPONENTS REBUILD SHOP
UDS-JL100	JACKLEG COMPONENTS REBUILD SHOP
UDS-LG100	LEGS AIR LIFT COMPONENTS REBUILD SHOP
UDS-PU100	WILDEN PUMPS UG REBUILD SHOP
UDS-PU200	NOMAD PUMPS UG REBUILD SHOP
UDS-PU300	PSP300 PUMPS UG REBUILD SHOP
UDS-PU400	H2R PUMPS UG REBUILD SHOP
UDS-SP100	SCREEN PUSHERS COMPONENTS REBUILD SHOP
UDS-ST100	STOPERS COMPONENTS REBUILD SHOP
UTC-DR001	AVO11D765E DRIFTER 1838HD
UTC-DR002	AVO12D1780E DRIFTER 1838HD
UTC-DR003	AVO12D113E DRIFTER 1838HD
UTC-DR004	AVO12D118E DRIFTER 1838HD
UTC-DR005	AVO10D1300E DRIFTER 1838HD
UTC-DR006	AVO12D026E DRIFTER 1838HD
UTC-DR007	AVO11D718E DRIFTER 1838HD
UTC-DR008	AVO11D1164E DRIFTER 1838HD
UTC-DR009	AVO11D1319E DRIFTER 1838HD
UTC-DR010	AVO11D756E DRIFTER 1838HD
UTC-DR011	AVO11D760E DRIFTER 1838HD
UTC-DR012	H050A06281/0934 DRIFTER HC50
UTC-DR013	H050A01144/1171 DRIFTER HC50
UTC-DR014	H050A00013 DRIFTER HC50
UTC-DR015	H050A00571 DRIFTER HC50
UTC-DR016	H050A00029/0718 DRIFTER HC50



UTC-DR017	HC02001674N DRIFTER HC20
UTC-DR018	HC020B00236 DRIFTER HC20
UTC-DR019	HC020B00165 DRIFTER HC20
UTC-DR020	H109A159788/0412 DRIFTER HC109
UTC-DR021	H109A00702/1179 DRIFTER HC109
UTC-DR022	H109A158042/0395 DRIFTER HC109
UTC-DR023	H109A00725/1176 DRIFTER HC109
UTC-DR024	PHQJ210 DRIFTER S36IR
UTC-DR025	PHQJ210 DRIFTER S36IR
UTC-DR026	167858/0476 DRIFTER HC50
UTC-DR027	H025A00735/1201 DRIFTER HC20
UTC-DR028	AV008D168E DRIFTER 1838HD
UTC-DR029	AV007D1649E DRIFTER 1838HD
UTC-DR030	HC109151062/0356 DRIFTER HC109
UTC-DR031	AV007D1931A DRIFTER 1132
UTC-DR032	AV010D1013A DRIFTER 1132
UTC-DR033	H109151062/0356 DRILL HC109 HOUR ENTRY
UTC-DR034	H050A1236 DRIFTER HC50
UTC-DR035	HC50167854/0479 DRIFTER HC50
UTC-SPARES	UG-COMPONENTS SPARES (PARKING LOT)
UV001	UTILITY VEHICLE X1100C KUBOTA
UV002	UTILITY VEHICLE X1100C KUBOTA
UV003	UTILITY VEHICLE X1100C KUBOTA
UV004	UTILITY VEHICLE X1100C KUBOTA
UV005	UTILITY VEHICLE X1100C KUBOTA
UV006	UTILITY VEHICLE X1100C KUBOTA
UV007	UTILITY VEHICLE X1100C KUBOTA
UV008	UTILITY VEHICLE X1100C KUBOTA
UV009	UTILITY VEHICLE X1100C KUBOTA
UV010	UTILITY VEHICLE X1100C KUBOTA (BOSTON)
UV011	UTILITY VEHICLE X1100C KUBOTA
UV904	UTILITY VEHICLE KUBOTA RTV
UV906	UTILITY VEHICLE KUBOTA RTV
UV907	UTILITY VEHICLE KUBOTA RTV
UV909	UTILITY VEHICLE KUBOTA RTV
UV910	UTILITY VEHICLE KUBOTA RTV
UV911	UTILITY VEHICLE KUBOTA RTV-X1140
UV912	UTILITY VEHICLE KUBOTA RTV-X1140



UV913	UTILITY VEHICLE KUBOTA (DECOMMISSIONED)
UV914	UTILITY VEHICLE KUBOTA RTV-X1140
UV915	UTILITY VEHICLE KUBOTA RTV-X1140
UV916	UTILITY VEHICLE KUBOTA RTV-X1140
UV917	UTILITY VEHICLE KUBOTA RTV-X1140
UV918	UTILITY VEHICLE UT99D SERVICE TRUCK
UV919	UTILITY VEHICLE UT99D MECHANIC TRUCK
UV920	UTILITY VEHICLE UT99D PERSONEL TRUCK
WC001	BOAT 18' ALUM QUEENSBORO MARINE (WC012)
WC002	BOAT 16' RUBBER RAFT
WC003	BOAT 14' RUBBER RAFT
WC004	BOAT 14' RUBBER RAFT
WC005	BOAT 14' ALUM LUND
WC006	BOAT 14' ALUM LUND
WC007	BOAT 14' ALUM SSV1420 LUND
WC008	BOAT 14' ALUM SSV1420 LUND
WC009	BOAT 14' ALUM SSV1420 LUND
WC010	BOAT 16' ALUM STARCRAFT
WC011	OUTBOARD MOTOR 30-HP YAMAHA PROP
WC012	OUTBOARD MOTOR 115-HP YAMAHA PROP WC001
WC013	OUTBOARD MOTOR 80-HP YAMAHA JET (SPARE)
WC014	OUTBOARD MOTOR 25-HP YAMAHA JET
WC015	OUTBOARD MOTOR 15-HP YAMAHA
WC016	OUTBOARD MOTOR 15-HP YAMAHA
WC017	OUTBOARD MOTOR 15-HP YAMAHA
WC018	OUTBOARD MOTOR 15-HP YAMAHA
WC019	OUTBOARD MOTOR 15-HP YAMAHA
WC020	OUTBOARD MOTOR 15-HP YAMAHA
WC021	BOAT 16' ALUM LUND
WC022	BOAT SPILL RESPONSE 1H33751
WD002	WELDER LINCOLN TRAILER MOUNTED
WD003	WELDER MILLER TRUCK MOUNTED (LV028)
WD004	WELDER MILLER SKID MOUNTED
WD005	WELDER MILLER TRAILER MOUNTED
WD006	WELDER MILLER TRAILER MOUNTED



Schedule 5. Hope Bay Spill Response Equipment Inventory

Essentially the same as the 2019 Inventory

Being provided separately as the 2020 Inventory will not be completed until after the draft OPPP/OPEP is submitted for approval.

A full sized 2020 Inventory will be in the Command Post at the time of the Fuel Transfer. A copy of that edition will be available, upon request.

Explanation of Column Headers	
"C. & number". Container identification	Number on Orange Label
"B.1" - Anchor box (anchors over 40 Lbs)	
"T & number: Item in the Tote Indicated	Note: Tote will be in container indicated by column
"BO" = Boat = Landing Craft Type (Penner)	
MDSRC Boat and contents on MDSRC Inventory	
"Y" = In stock but not specifically counted	
"M/T" = Empty	
Container Contents - General	
C. 1 Boom, Yellow Containment, c/w Tow Line, Tow Bridle, Paravane & Trailing Line.	
C. 2 Boom, Red Containment, c/w Tow Line, Tow Bridle, Paravane & Trailing Line.	
C. 3 Boom Support Equipment - Anchors, incl. Shore Pins, Bridles, Buoys, Chains, Sledge Hammers, Shackles, Carabineers & Firemans Snaps	

C. 4 Skimmer, Powerpack, Pumps, Hoses, Tanks & Fittings (camlock adapters, "O" ring seals, ball valves etc	
C. 5 Absorbents & Absorbents - Booms, Granular, Pads, Pom Poms, Rolls	
C. 6	
C. 7	
C. 8	
C. 9	
C. 10	
B.1 = Heavy anchor box (anchors over 40 lb) Stored outside containers. Sloped lid.	
"T & number" indicates the item is in the numbered tote within the container indicated by column.	
ITEM	
ANCHORS, BUOYS, CHAINS	DESCRIPTION
& FLOATS (PARAVANES)	
ANCHORS	
	70 LB Danforth c/w 10' x 1/2" chain & shackle
	44 lb (20 kg) Claw (Bruce), c/w shackles & 10' x 1/2" chain
	44 lb (20 kg) Plough, c/w shackles & 15' x 3/8" chain

	43 lb Danforth c/w 10' x 3/8" chain & shackle
	22 lb Danforth c/w 10' x 3/8" chain & shackle
	17 lb Danforth c/w 10' x 3/8" chain & shackle
	17 lb Danforth c/w 10' x 3/8" shackle but no chain
	8 lb Grapnel c/w anchor line
	36" Sea Anchor (Drogue/Drift Anchor)
ANCHOR ASSEMBLIES	
	c/w 25 lb Danforth Anchor, 10' chain, 50' & 60' 10' ropes plus red buoy and anchor marker white buoy and rope
ANCHOR PINS, SHORE	
	3' Straight, Steel
	3' Delta Wing (See remarks column)
BUOYS	
	Red, c/w shackle

	Red (A-3 size) c/w carabineer
	White, c/w shackle
	Fender type, 15" x 4", shackle one end. "Taylor" made. + two on end of boom strings
CHAIN, SPARES	
	50' x 3/8"
	16' x 3/8"
	6' x 3/8"
HULL MAGNET C/W FLOAT (Green) LINE 7 SNAP	
PARAVANE FLOAT	
	Boom tow, c/w Dble Tow Bridle & ASTM connector
ITEM	
HOPE BAY BOAT	DESCRIPTION
Equipment listed under "BOAT" is not counted in the rest of the inventory	
	18' Queensboro Marine, Aluminum, Landing Craft type

	Locker at steering position contains tools kit & lubes
	80 HP, Yamaha 4 Cycle Outboard Jet Drive. Manual in Tool Kit.
	Trailer, Highliner
HOPE BAY BOAT ACCESSORIES	
	Air Horn
	Anchor, c/w chain & line
	Battery, Spare 12V in box
	Bailer
	Boat Pole
	Chart of Roberts Bay, Plasticized
	Core, Pull c/w toggle
	Davit, Electric, Removable c/w cable
	Fenders (Rubber Tires)
	File
	Fire Extinguisher, 20lb, ABC
	First Aid Kit (Marine)
	Flares, Marine
	CIL Exp. 2012
	CIL Orion Exp. 2013
	Sky Rocket

	Fluid, Hydraulic (ATP)
	Fluid, Steering
	Grease, Bearing, Tube
	Hammer, Claw
	Heaving Line c/w Life Ring
	Key, in ignition
	Key, Yamaha "721"
	Knife, Utility
	Lantern, 6V
	Life Vests
	Navigation Light
	Ropes
	1 x 10' Thimble each end
	1 x 25' line
	Pliers, Adjustable 8"
	Pliers, Needlenose
	Pliers c/w wire cutters 9.5"
	Plug, Bilge
	Spark Plugs
	Stickers Card for Electrical Switch Identification
	Stirrup Belt (Swimmer Rescue Tool)
	Tool Box, Red, Metal, "Beach"
	Tow Post
ITEM	Wrench, Adjustable 12"
BOOMS, BRIDLES & CONNECTOR PINS	DESCRIPTION

BOOM	Total Length 1,528'	
10 x 50' yellow coloured = 500' in C.4		30" with ASTM Connectors
14 x 50' red coloured = 700' in C.9		Configured with 50' tow rope, double tow bridle, 500' of boom, 50' trailing line and white end float
		Configured with 50' tow rope, double tow bridle, 700' of boom, 50' trailing line and white end float
4 x 82' x 20" diameter, orange coloured = 328'		
		ShoreSaver Boom in 82' sections
		1 x Air inflation adapter
		1 x 15' Water loading hose (blue) c/w Munson adapter one end, Camlock other end
		1 x 20' Water suction hose (clear) c/w strainer one end, Camlock other end
		1 x 25' Blue discharge (lay-flat) hose c/w Camlock each end
		2 x Shoresaver Tow Bridles c/w 82' of line and white float. NOT ASTM Connectors
		1 x Stihl BR600 Backpack Style Blower with extention pipes c/w air inflation adapter
BOOM BOLT & NUT, Spares		

BOOM CONNECTOR, Spares	
	ASTM Connectors, with all fittings
	Pieces, ASTM Connectors
BOOM CONNECTOR PINS, Spares	
	c/w connector wire and plate
BRIDLES, TOW	
	Single, c/w shackle
	Double, c/w shackles
HULL MAGNETS, C/W FLOAT, LINE AND SNAP	
	Floats inflated
PARAVANE, BOOM TOW	
	c/w Double Bridle
FUEL, OIL, LUBES & ADDITVES	
ANTI-FREEZE	
	Gas Line 150 mL
DIESEL	
	5 gal. Jerry Can
ENGINE STARTING FLUID	
	211 Gr Aerosol
OIL	
	Hydraulic (Skimmer PowerPack)
	Lubrication, OW-30 1 L
ITEM	

HOSES & RELATED EQUIPMENT, INCLUDING SPARE CAMLOCKS	DESCRIPTION
See also Tanks & Related Equipment	
Note: C.8 & C.9 have not been inventoried	
KAMLOCK, SPARES	
In Rubbermade Tubs	Does not include installed Kamlocks
	Tubs marked as to contents
2" Female Adapter	
3" Female Adapter	
4" Female Adapter	
2" Male Adapter	
3" Male Adapter	
4" Male Adapter	
2" Female Coupler	
3" Female Coupler	
4" Female Coupler	
2" Male Coupler	
3" Male Coupler	
4" Male Coupler	
Caps, Hose x 1.5"	

Caps, Hose x 2"	
Caps, Hose x 3"	
Caps, Hose x 4"	
Elbow, 90, x 4"	
	Female/Female Kamlocks
Locking Pins, Spares	
Plugs, Hose x 1.5"	
Plugs, Hose x 2"	
Plugs, Hose x 3"	
Plugs, Hose x 4"	
O-Ring Gaskets x 2"	
O-Ring Gaskets x 3"	
O-Ring Gaskets x 4"	
Spool Adapter x 2"	
Spool Adapter x 3"	Double Male
Spool Adapter x 4"	Double Male
	Double Male
Spool Coupler x 2"	
Spool Coupler x 3"	Double Female
Spool Coupler x 4"	Double Female
	Double Female
ITEM	

FIRE NOZZLE	DESCRIPTION
	c/w Kamlock adapter
FOOT VALVES	
	2" c/w Kamlock
HOSES, TRANSFER	
	2" x 100' c/w Kamlocks and one with ball valve one end
(These could be used as either Discharge or Suction Hoses)	2" x 10' c/w Kamlocks
	3" x 25' c/w Kamlocks
	4" c/w Kamlocks
MANIFOLD, TEE	
	3" Fittings
REDUCTING COUPLERS x ADAPTERS	
	1.5" x 2"
	2" x 3"
	2" x 4"
	3" male/2" Male Reducer/Adapter
SUCTION SCREEN	
	2" c/w Kamlock
	3" c/w Kamlock
	4" c/w Kamlock
SWAGES (Adapters)	
	1 1/2" - 2" c/w Kamlocks
	2" - 3" c/w Kamlocks
	2" - 4" c/w Kamlocks

	3" - 4" c/w Kamlocks
VALVES, BRASS	
	2" Ball
	3" Ball
	4" Ball
ICE EQUIPMENT	
For Clothing (Chain Saw Chaps, Winter Boots etc see "Safety Equipment, Personnel" or "Miscellaneous"	
See "Chippers, Ice" in Miscellaneous	
ITEM	
MISCELLANEOUS	DESCRIPTION
ALLEN KEY	
	Set
BOX, WOODEN, LIDDED	
	Heavy anchoe (>40 lb) storage box
BOX, WOODEN, UNLIDDED	
	20" cube
BOX, WOODEN, UNLIDDED	
	4' Cube. Contains Buoys
BRUSH	
	Floor, Long handled
CARIBINEERS -5 gallon pail 3/4 full	

CHART, NAVIGATION, LARGE	
	Roberts Bay. Laminated. Command Post wall.
CHIPPER, ICE	
CLIPBOARDS	
COME ALONG 3/4 TON	
	C/W chain and lever
CONTAINER, RUBBERMAIND, WITH LID	
CORD	
	Sash on reel
CRATE, PLASTIC SMALL	
	Milk type
DECONTAMINATION KIT	
	Brushes
	Trays (Collapsible)
	Detergent, 20L pail
	Tarpaulin, 20' x 30'
	Scissors, Rounded Tips
DELINEATORS	
	ORANGE
DRUM, 45 gal, steel	
	45 Gal. c/w removable lid

DRUM, 45 gal, steel	
	45 Gal. No lid
EMERGENCY RESPONSE GUIDE 2008	
FILES (Rasps etc)	
	Flat
	Various, c/w handles
FLAGS, HAND	
	On sticks
FIREMENS SNAPS	
	Spares
ITEM	
FUNNELS	DESCRIPTION
	Small
	Medium
	Large
GARBAGE BAGS	
	Box 100 (opened and being used)
GARBAGE CAN	
	c/w lid
GROUNDING CABLE	
	On red metal reel, c/w clamps
	On reel, no clamps
HAMMER	

	Claw
	Mawl 4 lb
	Sledge 10 lb
	Sledge 12 lb
HATCHET	
HOOK, SAFETIED	
	c/w short 4 link chain
JERRY CAN, RED	
KNIFE	
	Utility, c/w spare blades
	Utility, no spare blades
LABELS	
LADDER, BOARDING, BOAT	
	3 step
LANTERNS	
	Hand, c/w 6V batteries
LANTERN BATTERIES, 6V, SPARES	
LEVEL, SPIRIT	
	48"
MARKERS, PERMANENT	
MATTOCKS	

MEGA BAGS	
	Lined, Self standing type. Heli transportable c/w slings attached.
MEGAPHONE	
PADLOCKS	
	Programmable, combination type. Installed on containers and anchor box
PACKLOCK, KEYED	
PAILS	
	Galv. 2.5 gal, aluminum
	Plastic, 25L
ITEM	
PAINT, AEROSOL	DESCRIPTION
	Blue
	Orange
	White
	Green
PAINT STICKS	
	Yellow
PICKS	
	See Mattocks
PLASTIC, SHEETING	
	36' x 60' x 3mm in a Roll

PLIERS	
	Regular
	Needlenose
PLYWOOD	
	3/4" x 8' x 4'
PROPANE TORCH C/W NOZZLE	
PROPANE TORCH KIT	
	c/w storage case, flame spreader, 1 utility flame tip spare. Spark striker.
PRY BAR	
	5'
QUICK LINKS	
	Spares
RAKES	
	Long Handles
RANGEFINDER	
	Bushnell 450, Laser, in Black Pelican Case
RIVETER, POP	
	c/w box of rivets of various sizes
SAW, HAND	
SCREWDRIVER	
	Flat Blade, Large
	Multi tip
SHACKLES	

	Spares; Various sizes
SHOVELS	
	"D" Grip, Scoop, Aluminum
	"D" Grip, Scoop, Steel
	Aluminum, Long Handled
SIGN CONTAINER NUMBER, SPARES	
SPILL KIT, DRUM, YELLOW	
	Inventory sheet inside each
SQUEEGEE	
	Long Handled
ITEM	
TAPE	DESCRIPTION
	CAUTION
	DANGER
	DUCT
	ELECTRICAL (ROLLS)
	FLAGGING (ROLLS)
	PACKING (ROLL)
	TEFLON (ROLLS) - pipe tape
TAPE MEASURE	
	5m 16"
	9m 30'
	100m 330'
TARPAULINS	

TIES, CABLE, NYLON (Zap Straps)	
	Bags, Assorted Colours
TIE-DOWNS	
	Various types in containers. Not counted
TIN SNIPS	
TOOL BOX, PLASTIC, BLACK & YELLOW	
	Large
TOOL BOX, PLASTIC, BLACK	
	Small
TRAYS, DRIP, COLLAPSIBLE	
	36" x 36" x 4"
	48" x 48" x 4"
TUBS, RUBBERMAID c/w Lid	
WD-40 LUBRICANT	
	Aerosol can
WHEELBARROW	
	Blue, metal
WIRE	
	Mechanics (roll)
WIRE BRUSH	
WIRE CUTTERS	
WIRE MESH	

	Roll, Large mesh 100"
WIRE FLAGS	
	Bundles. 100 per bundle, Red
WRATCHET STRAP	
WRENCH, ADJUSTABLE	
	8"
	10"
	12"
	PIPE - 12"
	18"
	24"
ITEM	
PUMPS	DESCRIPTION
DIESEL & GASOLINE PUMPS ARE KAMLOCKED	
	See Also "Skimmer"
DIESEL	
	3" Yanmar Mod. 83A1-L100EEX SER. 107921 Gormann Rupp pump
DIAPHRAM, MANUAL, 1 1/2"	
	c/w hose and fittings
GASOLINE	

	2" Subaru Engine with Gorman Rupp pump approved for flammable liquids. C/W lifting cage
ROPES & ROPE REELS	
ROPES (Identified by length with coloured collar on each end or in middle (cinch) if a 10', lashing or spare rope)	
	Totals below not to be relied upon as manyd employed Aug 2012 and others scavenged from various locations and placed in stock.
Ropes of 50', 60', 75' & 100' stored on rope reels	
Lashings/Light Lines, Black, Assorted Lengths 10' x 15' most with loop on one end. (Yellow or narrow white cinch).	
	Stored in drum
10' Yellow, thimble each end. (Gray cinch)	
	Stored in drum
50' Yellow, 1/2" poly, thimble each end. (Black collar)	
	Plus 4 attached to boom strings
60' Yellow, 1/2" poly, thimble each end. (Green collar)	
75' Yellow, 3/4" poly, thimble each end. (Blue collar)	
100' Green, 3/4" poly, loop one end thimble the other. (Orange collar)	

Ropes - Spares; Not part of the above. Different diameters and lengths. To be used as needed. (White cinch)	
REELS	
	Plastic
	Wood
SAFETY EQUIPMENT - GENERAL	
AIR HORN	
EYE WASH STATION	
EYE WASH SOLUTION	
	900 mL Bottle
FIRST AID KIT (NWT #2)	
	Expired April 2013
FIRE EXTINGUISHER	
	20lb ABC N2 Refillable
N2 FIRE EXTINGUISHER BRACKET	
	N2 Type
WINDSOCK	
	Sock
	Extension Pole(2 Piece)
ITEM	
SAFETY EQUIPMENT - PERSONNEL	DESCRIPTION

BOOTIES	
	Tyvec boot covers (box)
CHIN STRAPS	
	On hard hats
COVERALLS, DISPOSABLE, TYVEC	
	Size XL
	Size XXL
EARPLUGS	
	Box
GLASSES	
	Safety
GOGGLES	
	Chemical
GLOVES	
	Monkey Grip
	Leather/Canvas
	Nitrile, "Sol Vex", Pr
	Nitrile, Nitri-Gard, Pr
	Nitrile, Stretchy, Blue, Box
HARDHATS	
	c/w chin straps
	No chin strap
INSECT REPELLANT	
	"Deep Woods Off", Aerosol
LIFEVESTS	

	Size Large
	Size XL
	Universal
RESPIRATORS	
	Half Maks c/w 2 org. vap. Carts.
SAFETY HARNESS	
	Parachute type
SUITS, CHEMICAL	
	Size XL
	Size 2XL
SUITS, SURVIVAL	
	Size Med
	Size Lrg
	Size XI
	Size 2xl
SUNSCREEN	
	Tubes
VESTS, SAFETY, C/W REFLECTIVE TAPE	
	Size Large
	Size 2XL
	Size 3XL
WADERS C/W SUSPENDERS	
	Chest, c/w steel toes and shanks
	Size 10
	Size 11

ITEM	Size 12
SKIMMERS	DESCRIPTION
MULTI-HEAD (Tri-Skimmer)	
	Queensboro Model QME 25 c/w Kamlock
	Powerpack Yanmar Diesel Mod. L100V6CA1T1AA on wheeled cart
	Pump-Casappa ACT003 Hydraulic
	Disc Insert for QME 25. c/w disc scraper panel
	Drum Insert for QME 25 (Installed) c/w scraper
	Brush Insert. c/w brush comb
SORBENTS	
Totals unreliable as many deployed and used Aug 2012	
BOOMS, Oil Only (White)	
	Sorbent, Bags of 4
BOOMS, Universal (Gray/blue)	
	Sorbent, Bags of 4
GRANULAR	
	Corn Cob

	Peat Moss
PADS	
	100 Bale, Oil Only (White)
	100 Bale, Universal (Gray)
	100 able, Universal (Green)
PUTTY, SPILL (Plug 'n Dike)	
	Jar, for drum and tank leaks
ROLLS	
	Sorbent, Oil only
SORBENT SCRAPS (Spaghetti)	
	Bag
RAG	
ITEM	Bag
TANKS & RELATED EQUIPMENT	DESCRIPTION
TERRA-TANK	
	Pillow type, 5000 L
TERRA-TANK FITTING	
	Sets
TERRA-TANK BERM	
	c/w 42L brackets
TERRA REPAIR KIT AND MANUAL	
	Marked. In black plastic tool box
TOTE TANK, INSULATED	
	Tote # T.1
	Tote # T.2

	Tote # T.3
	Tote # T.4
TOTE TANK BALL VALVE ASSEMBLIES	
	Plastic
BERM, UNIDENTIFIED, BLACK	
	Capacity?

Schedule 7. OHF Oil Pollution Response Program – Exercise Plan

TRAINING PLAN

The exercise plan is an integral part of the OHF’s emergency program. The primary goal of the exercise plan is to evaluate the components of the emergency program, the capabilities of OHF response staff and the training program. Exercises are a tool to ensure the knowledge, skills and ability of the personnel engaged in the response activities are understood and can be tested in a controlled environment. Exercises are divided into four categories: internal alert, external alert, operational and table-top (management).

The scenario used for training and exercise purposes will be custom designed to present different challenges that may be encountered at the OHF and/or during the annual summer fuel delivery.

All aspects of the emergency plan must be exercised within the prescribed frequency.

Table of Exercises

TYPE OF EXERCISE	DESCRIPTION	FREQUENCY
<p>Internal alert: Verify the ability to contact, in a reasonable time, response staff identified in the OHF’s emergency plan</p>	<ul style="list-style-type: none"> ▪ Notification to Agnico Eagle Site management ▪ Activation of Agnico Eagle Emergency Response Team (ERT) 	<p>Once a year</p>
<p>External alert: Verify the ability to contact OHF authorities, company management, governments and other organizations identified in the OHF’s emergency plan as soon as possible after the discovery of an incident.</p>	<ul style="list-style-type: none"> ▪ External notification systems – simulate an emergency call out to government agencies Assembly and Activation of contractors – both on and off-site 	<p>Once a year</p>
<p>Operational exercise: Verify the ability of the OHF response team to contain/recover a spill, using all response equipment described in the emergency plan within time standards.</p>	<ul style="list-style-type: none"> ▪ Shut down procedures ▪ Source control ▪ Mobilize ERT/contractors ▪ Deployment of equipment ▪ Containment and recovery activities ▪ Site Safety Plan Development 	<p>Once a year</p>

<p>Table Top – Management exercise: Verify the OHF’s response management system by simulating an incident using a scenario with inputs from a Truth Unit. Simulation of deployment of equipment and activation of personnel. Test the communication, briefing, reporting and data and records collection and management techniques. Tabletop exercise completed January 22, 2020.</p>	<ul style="list-style-type: none"> ▪ Identification of the Incident Commander ▪ Establishment of the management team and command center ▪ Situational analysis ▪ Spill Trajectory ▪ Environmental assessment ▪ Site Security ▪ Equipment tracking ▪ Preparation of Incident Action Plan ▪ Public awareness/notification <p>Post incident de-briefing</p>	<p>Once every three (3) years</p>
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NOTE: All documentation related to exercises must be kept at the OHF for five years and copies made available for review by Transport Canada, upon request. Corrective measures should be identified after each exercise, and the OHF’s oil pollution emergency program be amended accordingly and submitted to Transport Canada.

Schedule 7a Generic Training Content Outline – Fuel Transfer

The listing below provides general headings of subjects covered in the pre-transfer formal classroom training provided for persons who may be involved in the Annual Fuel Transfer or in any related spill response.

- **Introduction**
- **Spill Prevention**
- **Initial Action/Safe Approach to a Spill**
- **Notifications (Internal & External)**
- **Response Management & Documentation** (Incident Command System - ICS)
- **Communications**
- **Material Properties**
- **Spill Behaviour & Fate**
- **Spill Site Safety**
- **Environmental Considerations**
- **Spill Response Strategies & Tactics**
- **Response Equipment**
- **Decontamination (Personnel & Equipment)**
- **Waste Management**
- **Aerial Support of Response**
- **Post Spill Procedures**
- **Fuel Transfer Procedures & Review**
 - **Review of the current OPPP/OPEP with job specific instruction relating to Fuel Transfer personnel, Response Management Team and Field Operations staff including procedures for the transition from normal transfer operations to spill response.**

For selected personnel, the above is followed by an equipment deployment exercise appropriate to conditions that may be encountered during the Fuel Transfer.

TABLE TOP SIMULATED INCIDENT

TRAINING CRITERIA

1) Establish Command Centre, Identification of Management Roles; Incident Commander and Incident Response Team Members

GOAL: Simulation of timely centralized assembly of effective Management and Incident Response Team, identification of individual roles and responsibilities, identification of “Person in Charge”, identification of alternates for each role, establishment of a functioning command post.

2) Test Communications and Contacts Identified in the OPEP

GOAL: To ensure that the OPEP document is effective as a guide and resource during an Oil Pollution Incident Response. Verify internal and external contact information is current and correct agencies/parties are identified. Ensure timeframes for notifications, reporting are observed.

3) Maintain Log of Events/Recordkeeping

GOAL: Document through, accurate, chronological records from incident inception of internal and external communications, equipment deployment and consumables usage, personnel assignments, through to a debriefing of the participants

4) Debrief of Event/Opportunities for Improvement

GOAL: Critical analysis of strengths and weaknesses of response with development of appropriate and documented corrective actions.

Schedule 7b. OHF Oil Pollution Response Program – Training Matrix

Name	Company	OPPP/OPEP Training - 2016	OPPP/OPEP Training - 2017	MDSRC Response Boat Orientation - 2017	ICS Training and Tabletop Exercise - 2018	OPPP/OPEP Training - 2018	Tank Valve Monitor & Line Walker - 2018	MDSRC Boat Orientation & Operation - 2018	OPPP/OPEP Training 2019
Kyle Aglukko	Fathom	X							
Michael Aleekkee	TMAC					X			
Kyle Algona	NUNA						X		
Bobby Alikamik	NUNA		X						
Annie Appatok	TMAC					X			
Emmanuel Ateh	TMAC						X		
Mitch Bernier	TMAC					X		X	X
Ron Bertrand	TMAC		X		X		X		

Name	Company	OPPP/OPEP Training - 2016	OPPP/OPEP Training - 2017	MDSRC Response Boat Orientation - 2017	ICS Training and Tabletop Exercise - 2018	OPPP/OPEP Training - 2018	Tank Valve Monitor & Line Walker - 2018	MDSRC Boat Orientation & Operation - 2018	OPPP/OPEP Training 2019
		X							
Denis Bourgeois	NUNA	X							
Cameron Britton	NUNA		X				X		
Doug Brown	TMAC				X		X		
John Brummer	Crowley	X							
Tad Crowie	TMAC				X				
Kyle Conway	TMAC			X	X				X
Todd Cooper	Tundra						X		
Gary Dominaux	Fathom	X							
Tim Edstrom	TMAC				Day 2		X		
Jordan Eylon	NUNA	X							
Noel Evalik	NUNA						X		
Keith Forsythe	TMAC			X					
Walter Francis	Fathom	X							
Nick Franks	NUNA	X							
Dan Gagnon	TMAC				X				
Larry Geeraert	TMAC		X		X				
Jeff Getz	TMAC			X			X		X
Jerome Girard	TMAC				X		X		X
Bryan Grimwood	TMAC			X					
Vaughan Hall	Fathom	X							
Glen Hillsden	TMAC	X							
Scott Hopkins	ITB/Fathom	X	X						X
Jeff Kadlun	NUNA						X		
Darcy Kanayok	TMAC	X							
Jim Koponen	NUNA	X							
Nathan Komamgent	TMAC		X						
Conley Koswan	TMAC	X							
Gibson Kzosone	NUNA						X		
Jason Landon	TMAC		X						
Scott Lessley	TMAC		X			X			X
Jacob Lindberg	NUNA	X							
Kevin Lindstrom	KBL					X			
Louis Lu	TMAC			X					
Jonathan MacDonald	NUNA						X		
Dedre Maksagak	TMAC						X		
R.C. Malberg	NUNA	X	X						

Name	Company	OPPP/OPEP Training - 2016	OPPP/OPEP Training - 2017	MDSRC Response Boat Orientation - 2017	ICS Training and Tabletop Exercise - 2018	OPPP/OPEP Training - 2018	Tank Valve Monitor & Line Walker - 2018	MDSRC Boat Orientation & Operation - 2018	OPPP/OPEP Training 2019
		X							
Mark Martins	NUNA	X							
Robert Miedena	TMAC						X		
Anthony Morris	Crowley	X							
Daniel Mwangura	Tundra						X		
David Neevercheak	NUNA		X						
Russell Nokšana	TMAC			X					
Floyd Ougshuun	Fathom	X							
Wallace Panaktalok	Fathom					X		X	X
Wendy Parkes	TMAC		X						
Lisa-Marie Picco	TMAC		X						
Ray Pighin	TMAC			X					
David Ridge	Crowley		X			X			
Fred Samson	Fathom	X	X					X	
Joseph Samson	Fathom					X			
Steve Shortridge	TMAC		X		X		X		
Jason Silverwood	TMAC						X		
John Stelzer	Crowley	X							
Lloyd Sturge	NUNA	X							
Bruce Taylor	TMAC					X			
Brad Towle	TMAC				X	X	X	X	
Hank Van Den Heuvel	NUNA						X		
Tracy Wanyama	AMS					X			
Sarah Warnock	TMAC	X	X		X				
Brian Whittleton	NUMA		X						
Shawn Wright	Tundra						X		

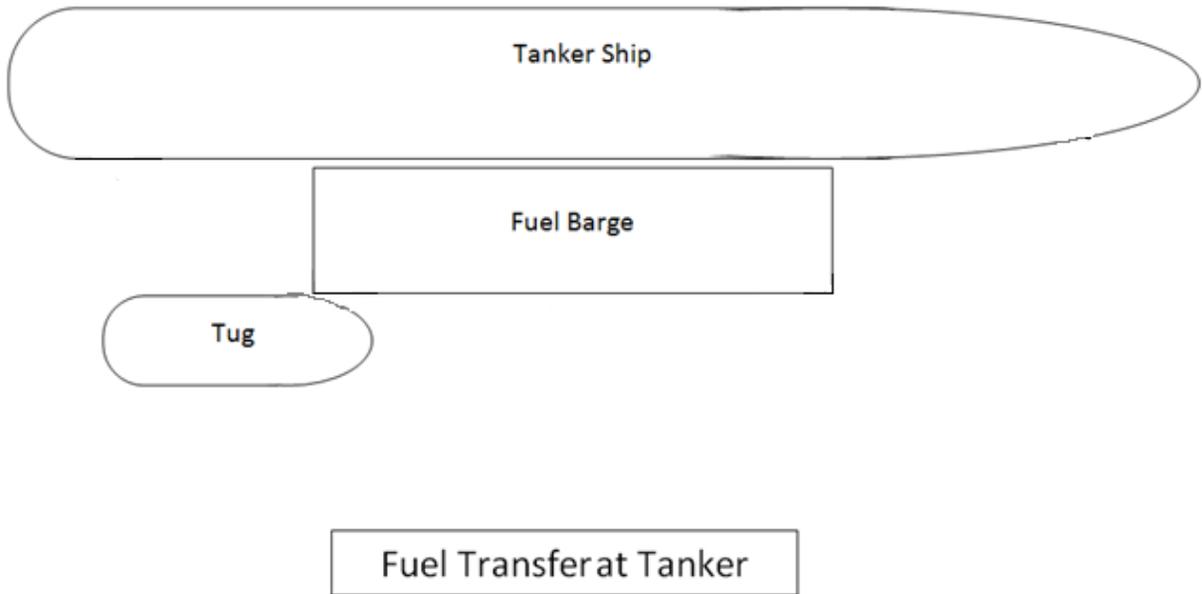
2020	<u>Transfer Details</u>
Total Volume of Fuel to be Transferred	+/- 15,000,000 Litres
Timing of Operation	__2 nd week of August 2020 commence discharging, complete discharge operation approximately 3 rd week of August 2020
Description of Operation	<ul style="list-style-type: none"> - 24/7 operation, 12-hour shifts, 30 minutes to change transfer team - Assume operation starting on 2nd week of August 2020. Tanker: TBD: Tugs: Fathom Wave and Barges: Deh Cho 1 and Deh Cho 2 at 2,000,000 Litres Capacity Each moored at the end of the jetty. Lightering from tanker anchored in Roberts Bay to the barge then transferring from the barge to the shore tanks by pipeline(s).
Transfer Events	- <u>Total</u> : 16 (8 Tanker to Barge and 8 Barge to Shore)
Transfer Rate	<ul style="list-style-type: none"> - <u>Average rate</u>: 250,000 litres per hour - <u>Maximum rate</u>: 300,000 litres per hour - Slow start and slow when nearing agreed fuel transfer level
Transfer Areas	<ul style="list-style-type: none"> - Barge secured to Tanker at Roberts Bay anchorage and Barge secured to Roberts Bay OHF Jetty - Spill containment boom deployed when Barge at the jetty (to be supplied by Fathom Marine) - Fathom Marine Spill Response Equipment –on each of the two Deh Cho class barges - Agnico Eagle Spill Response Equipment – on shore adjacent to jetty - Lighting plants at jetty, along transfer hose route and shore tanks (to be supplied by Agnico Eagle)
Transfer Components (emergency response equipment and safety equipment identified separately)	<p><u>Equipment for Transferring Fuel from Barge to Roberts Bay OHF Tank</u></p> <ul style="list-style-type: none"> - <u>Transfer pump</u>: 2 fixed in place transfer pumps aboard each Deh Cho Barge - <u>Fathom Marine to supply the following equipment</u>: - <u>Hoses</u>: 8 sections of 400’ and 4 sections of 200’ - 4” diameter, 6-ply hose with 4” female cam-lock fittings at upstream ends and 4” male cam-lock fitting at downstream ends; hoses annually tested to 225 psi and certified to 150 psi (certificate for each hose to be provided by Fathom Marine) - <u>Upstream adaptor</u>: 6” flange (with gasket) / twin 4” male cam-lock fittings / 4” ball valves with cam-locks for connection at tank manifold; - <u>Downstream adaptor</u>: Twin 4” male cam-lock fittings / 4” ball valves / 6” flange for connection at Investigator barge manifold; cam-lock fittings on 4” ball valve - <u>Rubber seals for cam-lock fittings</u> - <u>Plastic drip trays, spill pads and cam-lock straps</u> - <u>Compressor, pig launcher and catcher, and pig</u>: clean hose conduits before it is moved.
Transfer Team	<p>There will be two people designated for each position identified below in order to cover two 12-hour shifts per day throughout the operation</p> <p><u>Tanker to Barge Transfer Operation:</u></p> <ul style="list-style-type: none"> - <u>Onboard Supervisor</u>: Fathom Marine Captain and Chief Officer - <u>Documentation</u>: Fathom Marine Operations Supervisor and Ships Captain - <u>Bargemen</u>: Fathom Marine Certified Pumpman (pumps are on barge) - <u>Hose Monitors</u>: Fathom Marine Tug Crew <p><u>Barge to Shore Tank Transfer Operation:</u></p> <ul style="list-style-type: none"> - <u>Onboard Supervisor</u>: Fathom Marine Tug Captain and Chief Officer - <u>Documentation</u>: Fathom Marine Operations Supervisor and Agnico Eagle Oil Transfer Supervisor - <u>Bargemen</u>: Fathom Marine Certified Pumpman (pumps are on barge) - <u>Hose Monitors</u>: Agnico Eagle-supplied Line Walkers (2) - <u>Shore Tank Valve/Volume Monitor</u>: Agnico Eagle-supplied person - <u>Traffic Control</u>: 2 Agnico Eagle-supplied people, as required (barricades may be sufficient) - <u>Roberts Bay OHF Oil Transfer Supervisor</u>: Agnico Eagle-supplied person

<p>Personnel Qualifications and Training</p>	<ul style="list-style-type: none"> - Supervisor of Transfer Operations (Fathom Marine Bargemen) - Marine Spill Response Operations Course or equivalent course (Agnico Eagle OHF Supervisor) - Roberts Bay OHF-specific Spill Response Training Session; Fathom Marine personnel required to participate) - SVOPC/PCOC as needed - Hope Bay Spill Contingency Plan - Workplace Hazardous Materials Information System (WHMIS) - Preventative Boom Deployment - Emergency Response Training
<p>Key Approvals and Decisions</p>	<p>The following points imply consultation between Agnico Eagle and Fathom Marine</p> <ul style="list-style-type: none"> - Commencement of fuel transfer operation jointly initiated by Fathom Marine and Agnico Eagle - Volume of fuel to transfer in total and per transfer event agreed to by both parties - Sequence of barge tanks un-loading determined by: Fathom Marine Supervisor - Temporarily shut down operation due to adverse weather conditions decided by Agnico Eagle and Fathom Marine
<p>Pre-Transfer Briefing Meeting</p>	<p><u>Est. August 5th, 2020</u> (within 2 days prior to starting operation)</p> <ul style="list-style-type: none"> - Review fuel transfer procedures - Review fuel volume to be transferred during operation - Ensure clarity of roles and responsibilities, and designate specific tasks - Review warning signals (visual and otherwise) for emergency shutdown - Review safety procedures - Review readiness for commencement of fuel transfer operation and approve commencement of operation (each fuel transfer event is also to be approved)
<p>Primary Risks</p>	<p><u>Pump/fuel transfer conduit incident:</u> fitting at joint just downstream of pump ruptures spraying fuel on tanker/barge deck and into water</p> <p><u>Hose ruptures at fuel transfer area:</u> hose ruptures spraying fuel onto barge deck and/or into water</p> <p><u>Hose ruptures at fuel transfer area at barge/shore tanks:</u> hose ruptures spraying fuel onto barge deck and/or into water or onto land</p> <p><u>Gasket or rubber o-ring failure:</u> component fails leaking fuel through joint</p> <p><u>Barge tank failure:</u> large volume of fuel observed coming from leak in barge below water line from unknown damage; volume could be up to 214,210Litres</p> <p><u>Personnel slipping/tripping/falling:</u> person falls from tug or barge or from shore tank to ground</p>
<p>Key Fuel Spill Response Equipment and Resources</p>	<ul style="list-style-type: none"> - Vessel spill response equipment positioned on vessel deck would be used to pick up spilled fuel contained to deck - Skimmer and/or vacuum trucks would be used to pick up spilled fuel in water; absorbent material will also be used in water - Additional materials available on land

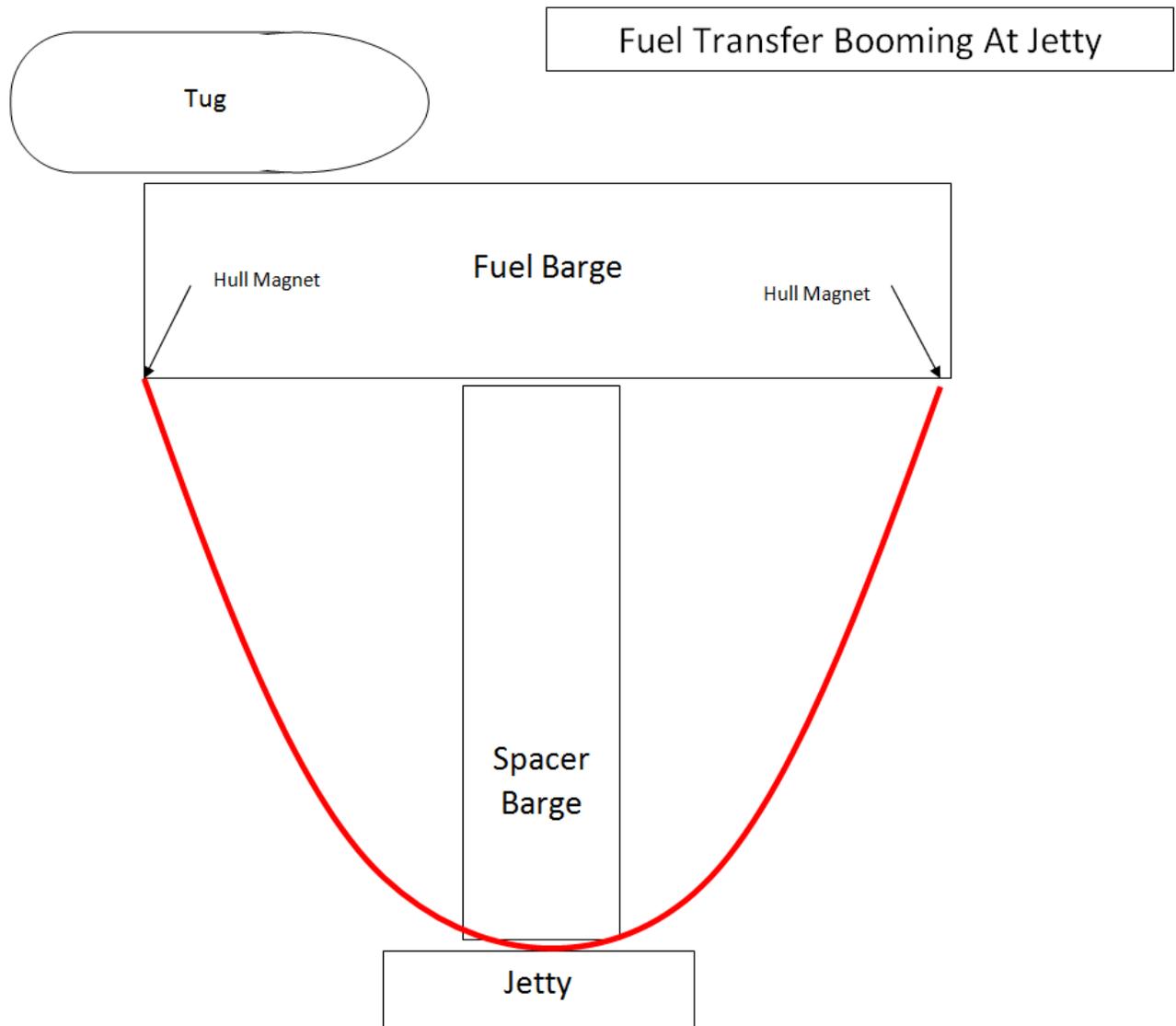
Schedule 8a. Inter-company Primary and Secondary Contacts

Organization	Name/Position	Contact Information
Agnico Eagle	Guy Dufour / Morgan Hjorth	P 819-759-3555 x4600102 guy.dufour@agnicoeagle.com P 819-759-3555 x4600123 morgan.hjorth@agnicoeagle.com
Crowley (CPD Alaska, LLC)	Walt Tague, Director Commercial Operations,	(907) 777-5563 Walt.Tague@Crowley.com
Crowley (CPD Alaska, LLC)	Captain David P Ridge Director Marine Operations Crowley Fuels LLC	P 907-777-5419 C 907-831-1237 F 907-777-5580 David.ridge@crowley.com
Fathom Marine Inc	Capt. Terry Camsell, Manager, Business Development,	(780) 235-2242 TerryC@fathommarine.ca
Fathom Marine Inc	Grant Locke, Manager, Operations	(604) 202-5889 GrantL@fathommarine.ca
Riverspill Response Canada Ltd	Ian Lambton	P. (604) 434-0994 C. (604) 317-0330 Riverspill@telus.net

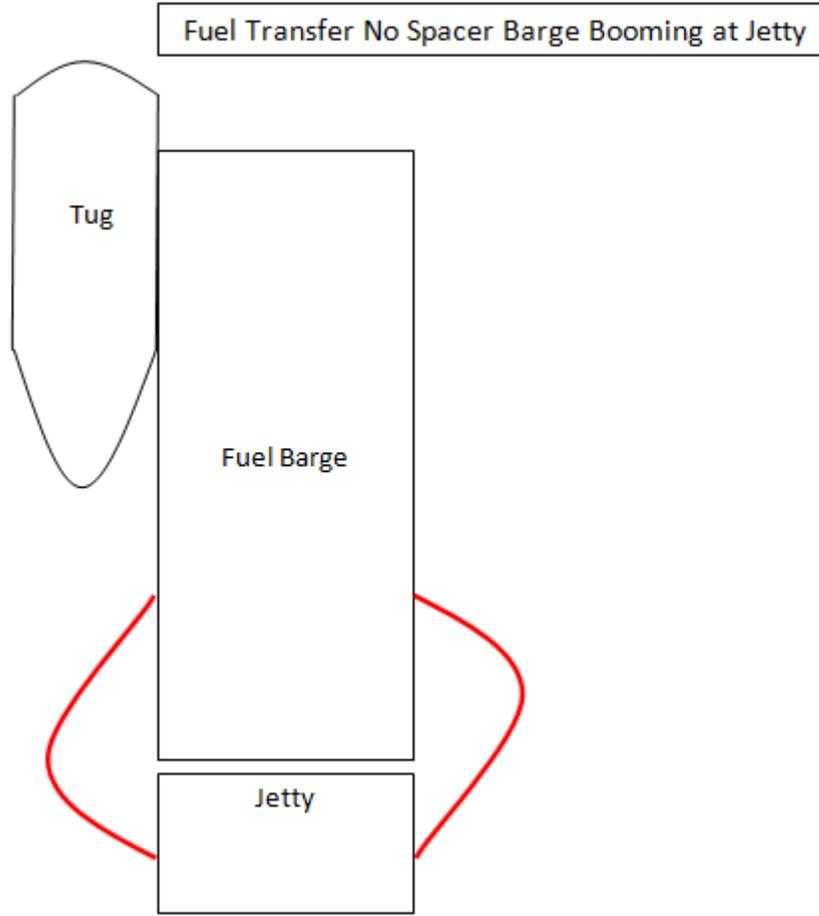
Schedule 8b. Jetty/Tanker Mooring/Booming Configurations



Pre-Booming not required unless requested by tanker Master or Fathom Marine SOTO/Agnico Eagle Oil Transfer Supervisor.



Intermediate seabed anchors may be deployed to hold boom in position.



Boom attached to Fuel Barge hull by magnets
Intermediate seabed anchors may be deployed to hold boom in position.

Schedule 8c. Transfer Vessels& Tanker Details + Response Equipment Lists

Fathom Wave



FATHOM WAVE

INFO

Fathom Wave

Shallow Draft Tug



REGISTRATION

Built	1974, Streepner Bros, Marine Transport Ltd.
Flag	Canada
Owner	Fathom Marine Inc.
Official Number	369113
Construction	Welded Steel
Port of Registry	Vancouver, BC

HULL

Length, registered	61' 5", 18.71m
Length, overall	63' 8", 19.40m
Breadth, registered	25' 1", 7.75m
Breadth, overall	26' 6", 8.08 m
Depth, registered	6' 10", 2.07m
Gross Tonnage	118.93
Net Tonnage	31.70

MACHINERY

Main Engines	2x Caterpillar 398
Horsepower	1700 Hp, 1268 Kw total
Reduction Gears	2x Caterpillar 7261
Reduction Ratio	2.89:1

PROPELLERS

Type	Kaplan
Maker	Osborne
Location	Aft
No. of Blades	3

A leading provider of innovative marine transportation and logistics services.



De Cho Barge Details



De Cho Barge (maximum capacity 2.2 million litres)



DEH CHO 1 PARTICULARS

Type of vessel:	Combination Oil and Deck Freight Barge
Cargo Class:	Class A1 without Deck Freight
Cargo Class:	Class B with Deck Freight
Official Number:	837381
IMO Number:	NA
Port of Registry:	Edmonton, AB
Owner:	Fathom Marine Inc.
Year Built:	2013
Builder:	Jiangsu Yangzijiang Shipbuilding Ltd.
Hull:	Double
Length Overall:	70.00m/ 229.7'
Breadth Moulded:	18.90m/ 62.0'
Depth Moulded:	3.40m/ 11.2'
Lightship Draft:	±0.638m/ 2.1'
Lightship Air Draft:	±2.762m/ 9.06'
Oil Tank Capacity River:	1200m ³
Oil Tank Capacity Full Load:	2000m ³
Gross Tonnage:	1161t
Net Registered Tonnage:	348t
River Load Draft:	1.525m/ 5.0'
River Load Air Draft:	1.875m/ 6.15'
Full Load Draft:	1.950m/ 6.4'
Full Load Air Draft:	1.450m/ 4.75'
Pumping System:	2 Diesel Driven Deck Pumps
Pumping Rate:	300m ³ /hr



FATHOM MARINE

DEH CHO 2 PARTICULARS

Type of vessel:	Combination Oil and Deck Freight Barge
Cargo Class:	Class A1 without Deck Freight
Cargo Class:	Class B with Deck Freight
Official Number:	837385
IMO Number:	NA
Port of Registry:	Edmonton, AB
Owner:	Fathom Marine Inc.
Year Built:	2013
Builder:	Jiangsu Yangzijiang Shipbuilding Ltd.
Hull:	Double
Length Overall:	70.00m/ 229.7'
Breadth Moulded:	18.90m/ 62.0'
Depth Moulded:	3.40m/ 11.2'
Lightship Draft:	±0.638m/ 2.1'
Lightship Air Draft:	±2.762m/ 9.06'
Oil Tank Capacity River:	1200m ³
Oil Tank Capacity Full Load:	2000m ³
Gross Tonnage:	1161t
Net Registered Tonnage:	348t
River Load Draft:	1.525m/ 5.0'
River Load Air Draft:	1.875m/ 6.15'
Full Load Draft:	1.950m/ 6.4'
Full Load Air Draft:	1.450m/ 4.75'
Pumping System:	2 Diesel Driven Deck Pumps
Pumping Rate:	300m ³ /hr

DehCho 1 Equipment List

Spill Equipment & Supplies	
Absorbent Boom (4"x10')	10
Absorbent Pads (100 count)	10
Open Headed Barrels	4
Pad Ringer (barrel mounted)	1
Aluminum Shovels	2
Aluminum Pitch Fork	2
Heavy Plastic Bags	200
Garbage Pails 100L	12
Skimmer Assembly and associated parts (Aqua-Guard RBS-15)	1
Spill Container 8'x10'	1

Deh Cho 2 Equipment List

Deh Cho 2 Equipment List 2017

Spill Equipment & Supplies	
Absorbent Boom (4"x10')	10
Absorbent Pads (100 count)	10
Open Headed Barrels	4
Pad Ringer (barrel mounted)	1
Aluminum Shovels	2
Aluminum Pitch Fork	2
Heavy Plastic Bags	200
Garbage Pails 100L	12
Skimmer Assembly and associated parts (Aqua-Guard RBS-15)	1
Spill Container 8'x10'	1

Other Fathom Marine Response Equipment

Spill Equipment & Supplies	
Spill Boom	2000 feet
Boom Towing Bridles	4
Absorbent Boom (4"x10')	30
Absorbent Pads (100 count)	36
Open Headed Barrels	12
Pad Ringer (barrel mounted)	3
Aluminum Shovels	9
Aluminum Pitch Fork	6
Heavy Plastic Bags	600
Anchor Assemblies	12
Garbage Pails 100L	12
Skimmer Assembly and associated parts (Aqua-Guard RBS-5 and RBS-1)	2
Spill Container 8'x20'	1
Miscellaneous	
Trailer Mounted Emergency Cargo Pump	1
Fuel Easy 1000L Flyable Transfer Bladders	3
40 Ton Rough Terrain Crane	1
20 Ton Rough Terrain Front End Loader	1
40' Workboat	1
Pigging System;	
Pigs	24
Compressor - for pigging system	1
Container for Pigging System and compressor 8'x10'	1
Container for Yard and Barge Gear 8'x20'	1

Fathom Marine 503 Spacer Barge Barge)



The FM 503 is a versatile ramp equipped deck barge. The barge was completely refurbished in 1998 adding a helicopter landing pad and new hydraulic bow ramp. The 503 has been utilized as a helicopter support barge, cable-laying vessel, and coastal equipment barge. She has generators and hydraulics on board as well as two large capacity pumps for the ballast system. The 503 is equipped as an oil spill response barge and has capacity to store 1500 M3 of recovered oil.

Registration:

Built: 1966, McKenzie Barge & Derrick Co.
 Re-Build: 1998, Island Tug & Barge
 Flag: Canada
 Owner: Fathom Marine Inc.
 Official Number: 327815
 IMO Number: 8646006
 GRT: 772
 NRT: 772
 Port of Registry: Vancouver, BC

Classification:

Transport Canada
 Deck Barge

Dimensions / Capacities:

Length, overall: 51.21 m
 Breadth, moulded: 14.63 m
 Depth, moulded: 3.28 m
 Deadweight 1200 Tonnes
 Lightship Disp.: 554 Tonnes
 Lightship draft: 0.75 m
 Lightship Air Draft: 11.5 m
 Full Load Disp.: 5190 Tonnes
 Full Load Draft: 2.5 m
 Full Load Air Draft: 9.75 m
 Ballast Tank Capacity: 1500 m3
 Ballast Tanks: 10

Pumps:

Type: 2 x Paramount Centrifugal
 Capacity: 70 m3 per hour each;
 140 m3 per hour total

Stripping:

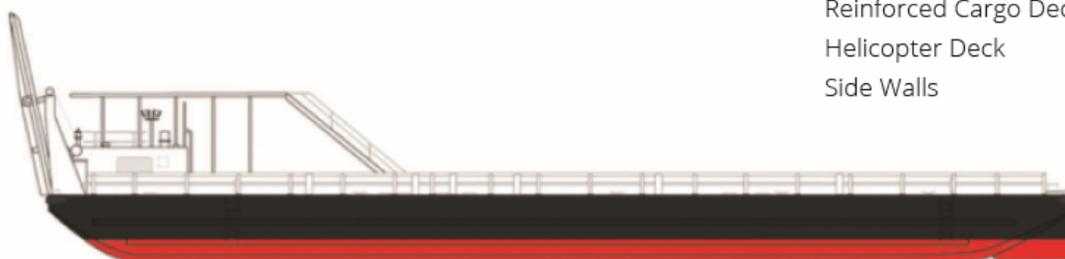
Type: 1 x Blackmere Sliding Vane
 Capacity: 10 m3 per hour

Main Machinery:

Hydraulic / Pump Set: 1 x Isuzu
 Gen / Pump Set: 1x Isuzu

Special Features:

- Bow Ramp
- Reinforced Cargo Deck
- Helicopter Deck
- Side Walls



Tanker “Clearocean Maria” (9655975)



Date updated:	Jun 02, 2020
Vessel's name (IMO number):	Clearocean Maria (9655975)
Vessel's previous name(s) and date(s) of change:	Alpine Maria (May 13, 2019)
Date delivered / Builder (where built):	Aug 22, 2014 / SPP Shipbuilding Co. Ltd.
Flag / Port of Registry:	Liberia / Monrovia
Call sign / MMSI:	D5FZ8 / 636016402
Vessel's contact details (satcom/fax/email etc.):	Tel: +870773272322
	Fax: 870783902166
	Email: clearoceanmaria@ishimafleet.com
Type of vessel (as described in Form A or Form B Q1.11 of the IOPPC):	Oil Tanker
Type of hull:	Double Hull

IMO: 9655975
Call Sign: D5FZ8
Flag: Liberia / Monrovia
AIS Vessel Type: Double Hull Tanker
Gross Tonnage: 29705
Deadweight: 49999 t
Length Overall x Breadth Extreme: 183m x 32.23m
Year Built: 2014
Status: Active

Schedule 8d.AWOT Checklists

Arctic Waters Oil Transfer (From TP 10783E)

Transfer Particulars

Vessel / Station Information			Location	
	Supplier	Recipient	Start Date	
Vessel / Station Name			Start Time	
Officer in Charge			Finish Date	
Title			Finish Time	
Operations				
Transfer Type:		Connection Type (eg. 2/4 bands):		
Total Length of Hose (ft):		Number of Hose Sections:		
Diameter (in): 4"		Test Pressure (PSI): 150		
Purge Method: Nitrogen / Air		Pig Used: Yes / No		
Boom deployed before transfer: Yes / No		If yes		
Work Boat used: Yes / No				
Hose Strain Relief System used: Yes / No				
Product Information		Weather Conditions		
Type	Quantity	Start Time	Finish Time	Ice:
				Wind Force (knots):
				Wind Direction:
				Sea State:
				Visibility:
				Light Conditions:
Communications				
Primary Method : Handheld VHF radio				
Backup Method :				
Language Used :English				

General Checklist for All Transfers

General Procedures	Check Yes	Supplier		Recipient		Comments
		Initial	Date	Initial	Date	
1. Pre-transfer P.A. Announcement made?						
2. All personnel involved are informed and adequately trained? A designated person in charge on duty at all times during the transfer operation?						
3. Language agreed to?						
4. All communications including Backup System tested?						
5. Is fire fighting equipment tested, available and are fire screens in place?						
6. Are all regulations for transfer understood and observed and "NO SMOKING, NAKED LIGHTS or FLAMES" signs posted?						
7. Are flashlights "intrinsically safe" and approved?						
8. Are window type A.C. units switched off?						
9. Are exterior doors and ports leading to main deck closed?						
10. Is equipment, tools & material required for transfer available at hand?						
11. Is containment equipment and absorbent material available?						
12. Has Transfer Emergency Shutdown been tested?						
13. Hoses to be used have been checked for:						
a) correct diameter & length to reach other station,						
b) chafing, cracks or other deformation						
c) damaged fittings,						
d) blanking of hoses						
e) continuity						

General Procedures	Check Yes	Supplier		Recipient		Comments
		Initial	Date	Initial	Date	
14. All repair work at either station stopped. (if dangerous for transfer)						
15. Inert gas system is fully operational (if fitted).						
16. Main transmitting aerials and radar scanners are used with due care.						
17. All craft alongside are authorized and following hazard warnings etc.						
18. Is hose test certificate or records available for inspection?						
19. Have weather and ice reports been determined?						
20. Are gas concentration accumulations in still air conditions monitored?						
21. Are all scupper plugs in place?						
22. Are main decks free of standing water?						
23. Were manifolds drained before removing blanks?						
24. Are pressure gauges ready and in place?						
25. All sea valves on cargo systems closed?						
26. Are drip cans and trays in place, and empty?						
27. Is lighting adequate for all transfer requirements?						
28. Is mooring watch being monitored?						
29. Are spill reporting procedures understood?						
30. Are all tank vents free of blockage?						
31. Have Pressure/Vacuum Relief (PVR) valves been checked?						
32. Has a post-transfer PA announcement been made?						
33. Are International signals being displayed? (If required)						

General Procedures	Check Yes	Supplier		Recipient		Comments
		Initial	Date	Initial	Date	
34. Has a written procedure and the sequence of the transfer been agreed upon?						
35. Is there a clear understanding of the watch and shift arrangement?						
36. Will there be sufficient personnel available at all times to monitor the transfer operation, tend cargo hose and mooring lines and take appropriate action in an emergency?						

Arctic Waters Oil Transfer

Checklist for Ship to Ship Transfers

Ship to Ship Procedure	Check Yes	Supplier		Recipient		Comments
		Initial	Date	Initial	Date	
1. Has the General Checklist for All Transfers been completed?						
2. Are the primary and secondary fenders in place?						
3. a) have the tanks, pipeline and valves been set to accept transfer? b) Are the first tank(s) and valves open?						
4. Are all other tank valves closed and set for normal operation?						
5. Are valves not being used, shut and blanked on the manifold?						
6. Are the transfer hoses adequately supported & properly connected						
7. Are all connections checked for leaks?						
8. Are regular checks of the water around vessels for evidence of leakage, being made?						
9. Are regular checks on the hose pressure being made to ensure that the recommended pressure is not exceeded?						
10. Are tank monitoring / sounding / ullage measurement procedures in place?						
11. Will the transfer be shut down if the vessel movement becomes excessive?						
12. Are vessel's engines on standby?						

Arctic Waters Oil Transfer

Checklist for Ship to Shore Transfers

Ship to Shore Procedure	Check Yes	Supplier		Recipient		Comments
		Initial	Date	Initial	Date	
1. Has the General Checklist for All Transfers been completed?						
2. Are all vehicles outside the agreed safe distance?						
3. Are the emergency towing wires in place? (Barges)						
4. Is the vessel ready to move under its own power immediately?						
5. Has a hose drainage plan been agreed upon?						
6. Has the hose string been checked to working pressure?						
7. Is a work boat deployed to check the hose frequently for leaks during transfer?						
8. Are all transfer associated valves and tanks closed after transfer?						
9. Have hoses been purged prior to their return to the vessel?						
10. Are hoses and other transfer equipment properly stowed?						
11. Will the transfer be shut down if the vessel movement becomes excessive?						
12. Are vessel's engines on standby?						

Arctic Waters Oil Transfer

Checklist for Barge Transfers

Barge Procedures	Check Yes	Supplier		Recipient		Comments
		Initial	Date	Initial	Date	
1. Has the General Checklist for All Transfers been completed?						
2. Is the discharge pump as close as possible to suction pipe of the discharge tank?						
3. Check hard line hose between pump and tank (if fitted)?						
4. Check couplings on discharge between pump and recipient?						
5. Do not exceed the following: a) maximum list (P & S) b) maximum trim (FWD & AFT)						
6. Are barge tank diagrams and pipe schematics available?						
7. Are fenders between the barge and other vessel?						
8. Is barge equipment bonded to barge structure?						
9. Are fire screens installed in ullage openings?						
10. Are all valves closed and hoses stowed after completion of transfer						

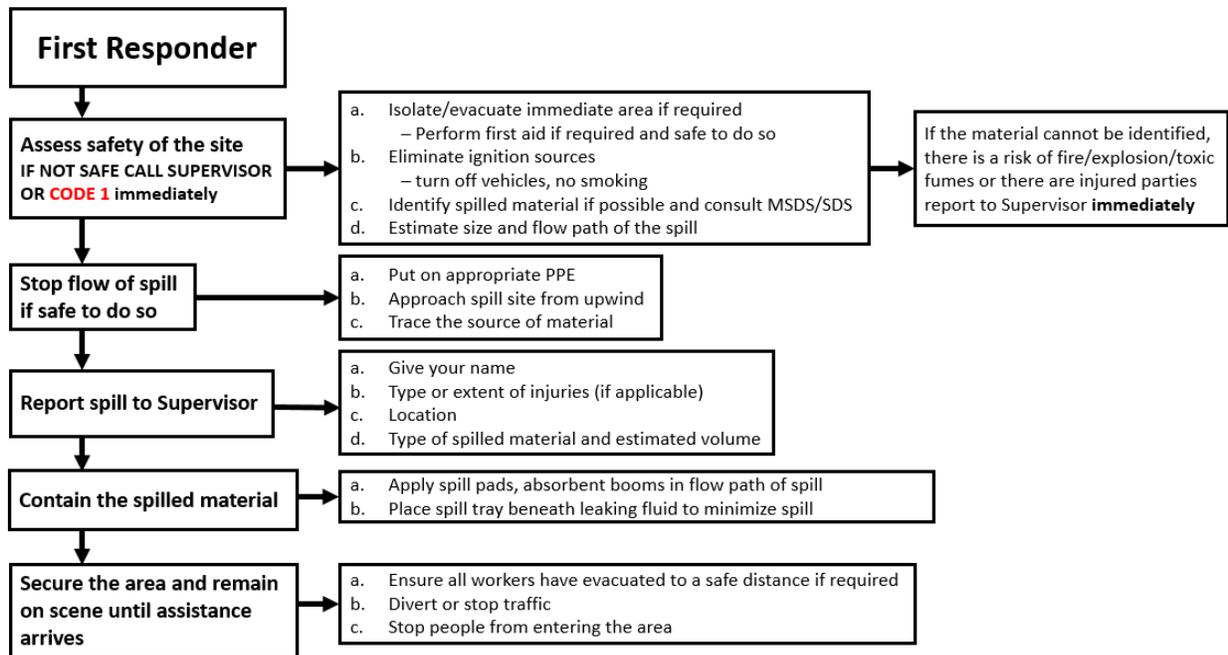
Schedule 9. Annual Fuel Transfer Risk Register Review– 2020

2020 Fuel Transfer Risk Assessment for TMAC Resources Inc.

Hope Bay, Nunavut								May 1, 2020								
ID	Date Risk Assessment Conducted	Location	Hazard/Risk	Potential Outcome	Likelihood of Occurrence	Consequence	Risk Level	CURRENT CONTROLS					Likelihood of Occurrence	Consequence	Risk Level	Improvement expectation 2020
								Elimination	Substitution	Engineering	Admin	PPE				
4	01-May-19	Roberts Bay	Fuel Transfer personnel exposed to spill during transfer	Personal Injury, Environmental Stakeholder Impact	3 (Possible)	3 (Moderate)	(13) Medium				Personnel will not perform outside activity if dangerous spillage on site occurs	1 (Minor)	2 (Minor)	(3) Low		
5	01-May-19	Roberts Bay	Fuel transfer operations	Increased Incident Potential	3 (Possible)	5 (Extreme)	(22) Critical				Contractor to complete TMAC "Response to spill" packages before start of operations	2 (Moderate)	3 (Moderate)	(9) Medium		
6	01-May-19	Roberts Bay	Barge Positioning & Jetty	Fire/Explosion	2 (Moderate)	3 (Moderate)	(6) Medium			Installation of mats at Jetty Trough installation	1 (Minor)	4 (Major)	(16) Medium			
7	01-May-19	Roberts Bay	Installation blast mat	Spill/Fire	1 (Minor)	3 (Moderate)	(3) Medium				THA for blast mat installation	1 (Minor)	3 (Moderate)	(3) Medium		
8	01-May-19	Roberts Bay	Securing blast mats	Fire	1 (Minor)	3 (Moderate)	(3) Medium				THA for blast mat installation. Toolbox discussion	1 (Minor)	3 (Moderate)	(3) Medium		
9	01-May-19	Roberts Bay	Barge Positioning & Jetty	Damage/Spill/Incident	2 (Moderate)	3 (Moderate)	(6) Medium				GPS points of the underwater fish habitat to be taken. OPS Team/TMAC to be provided with this information	1 (Minor)	4 (Major)	(16) Medium		
10	01-May-19	Roberts Bay	Barge Positioning & Jetty	Increased Incident Potential	2 (Moderate)	3 (Moderate)	(6) Medium			Identify mooring points for fuel discharge plan	Review and revision of TMAC Bulk Fuel Transfer Procedure	1 (Minor)	3 (Moderate)	(3) Medium		
11	01-May-19	Roberts Bay	Barge Positioning & Jetty	Spill/Fire	2 (Moderate)	4 (Major)	(14) High			Flag mats to be anchored to jetty on barge box to prevent damage from rocks	TMAC/OPS Team to provide SOP for safe docking/Consultation with captain before docking procedure takes place	1 (Minor)	4 (Major)	(16) Medium		
12	01-May-19	Roberts Bay	Barge Positioning & Jetty	Process Loss/Productivity	3 (Possible)	2 (Minor)	(3) Medium				Barge will not be docked at jetty unless Captain determines it is safe to do so	1 (Minor)	2 (Minor)	(3) Low		

2020 Fuel Transfer Risk Assessment for TMAC Resources Inc.

Hope Bay, Nunavut								May 1, 2020								
ID	Date Risk Assessment Conducted	Location	Hazard/Risk	Potential Outcome	Likelihood of Occurrence	Consequence	Risk Level	CURRENT CONTROLS					Likelihood of Occurrence	Consequence	Risk Level	Improvement expectation 2020
								Elimination	Substitution	Engineering	Admin	PPE				
13	11-May-19	Roberts Bay	Pre-Op - Beam Positioning	Increased Incident Potential	3 (Possible)	3 (Moderate)	(9) Medium				Have NTCL to provide additional beam resources if required	Review and revision of TMAC Bulk Fuel Transfer Procedure for Jetty work and vessel operations	2 (Moderate)	3 (Moderate)	(9) Medium	
14	11-May-19	Roberts Bay	Pre-Op - Beam Positioning	Spill	3 (Possible)	4 (Major)	(12) High				Avoid of Equipment completed by system, Lumberlan Ave 5,2014	Review and revision of TMAC Bulk Fuel Transfer Procedure. Addition of craft and equipment by NTCL as needed	2 (Moderate)	3 (Moderate)	(9) Medium	
15	11-May-19	Roberts Bay	Pre-Op - Beam Positioning	Increased Incident Potential	2 (Moderate)	3 (Moderate)	(6) Medium				Transfer to reach, pumps will not proceed	Review and revision of TMAC Bulk Fuel Transfer Procedure	1 (Minor)	2 (Minor)	(3) Low	
16	11-May-19	Roberts Bay	Pre-Op - Beam Positioning	Out of hour/Spill	2 (Moderate)	3 (Moderate)	(6) Medium				Eliminate the use of all other beam except the Panner		1 (Minor)	3 (Moderate)	(3) Medium	
17	11-May-19	Roberts Bay	Pump connections to jetty	Spill	3 (Possible)	3 (Moderate)	(9) Medium				Review and revision of TMAC Bulk Fuel Transfer Procedure, Contractor SOP for pump discharge, Fuel Transfer Contractor to provide pump connections	Review and revision of TMAC Bulk Fuel Transfer Procedure, Contractor SOP for pump discharge	2 (Moderate)	3 (Moderate)	(9) Medium	
18	11-May-19	Roberts Bay	Hard Connections Tank	Spill	2 (Moderate)	3 (Moderate)	(6) Medium				Review and revision of TMAC Bulk Fuel Transfer Procedure, Contractor SOP for tank discharge	Review and revision of TMAC Bulk Fuel Transfer Procedure/Obtain copy of TMAC/OPS SOP for Bulk Fuel operations will be trained in ER procedure, Quaternary will monitor for spills for the duration of the transfer, Site out of hour and spill site will be made available for review and revision of TMAC Bulk Fuel Transfer Procedure, contractor have	2 (Moderate)	2 (Minor)	(3) Low	
19	11-May-19	Roberts Bay	(Over Load) Transferring Fuel	Spill	3 (Possible)	3 (Moderate)	(9) Medium				"Note" Fuel to Tank line, fuel will be kept at start. Control Fuel has Static Disrupter included	Review and revision of TMAC Bulk Fuel Transfer Procedure, Contractor SOP for Bulk Fuel operations will be trained in ER procedure, Quaternary will monitor for spills for the duration of the transfer, Site out of hour and spill site will be made available for review and revision of TMAC Bulk Fuel Transfer Procedure, contractor have	2 (Moderate)	3 (Moderate)	(9) Medium	
20	11-May-19	Roberts Bay	Fuel offload	Process Loss/Productivity	3 (Possible)	3 (Moderate)	(9) Medium				All equipment connected to be used together. Operations will provide site map with work area highlighted on the bottom of tray for each operation. Personnel to monitor work area in station	Review and revision of TMAC Bulk Fuel Transfer Procedure, Contractor SOP for Bulk Fuel operations will be trained in ER procedure, Quaternary will monitor for spills for the duration of the transfer, Site out of hour and spill site will be made available for review and revision of TMAC Bulk Fuel Transfer Procedure, contractor have	2 (Moderate)	3 (Moderate)	(9) Medium	
21	11-May-19	Roberts Bay	Fuel offload	Unsafe/Ineffective response	3 (Possible)	3 (Moderate)	(9) Medium				Review and revision of TMAC Bulk Fuel Transfer Procedure, Contractor SOP for Bulk Fuel operations will be trained in ER procedure, Quaternary will monitor for spills for the duration of the transfer, Site out of hour and spill site will be made available for review and revision of TMAC Bulk Fuel Transfer Procedure, contractor have	TMAC/OPS will supply additional pump - Site additional pump, additional pump, additional pump	2 (Moderate)	3 (Moderate)	(9) Medium	
22	11-May-19	Roberts Bay	Communication	Unsafe/Ineffective response	3 (Possible)	3 (Moderate)	(9) Medium				Review, Flagging Training (read and test)	Review and revision of TMAC Bulk Fuel Transfer Procedure, Contractor SOP for Bulk Fuel operations will be trained in ER procedure, Quaternary will monitor for spills for the duration of the transfer, Site out of hour and spill site will be made available for review and revision of TMAC Bulk Fuel Transfer Procedure, contractor have	2 (Moderate)	3 (Moderate)	(9) Medium	



Schedule 11. SDS for Jet Fuel & the Lubricity Additive

JXTG Nippon Oil & Energy Corporation

Product Name: ENEOS Kerosine NO.1

Revised on: 20 June, 2019

Safety Data Sheet**1. Product and Company Identification**

Product Name	ENEOS Kerosine NO.1 Its major uses are found in kerosene stoves, kerosene heaters for bathtubs, fuel burners (kerosene powered), and other machineries that use kerosene.
Company Name	JXTG Nippon Oil & Energy Corporation
Address	JXTG Nippon Oil & Energy Corporation 1-2, Otemachi 1-chome, Chiyoda-ku, Tokyo 100-8162 Japan
Contact	+81-(0)3-6257-7185 +81-(0)3-6213-3486 Overseas Products Trading Group
Telephone number	
Fax number	
Emergency contact	
Reference Number	01102

2. Summary of Hazard Identification

Characteristics of hazardous material.

GHS Classification

Flammable liquid:	Category 3 (symbol: "Flame", signal word: "Danger").
Acute toxicity (oral):	Not classified (no symbol, no signal word).
Acute toxicity (skin):	Not classified (no symbol, no signal word).
Acute toxicity (inhalation-gas):	Outside of classification (no symbol, no signal word).
Acute toxicity (inhalation-vapour);	Classification not possible (no symbol, no signal word).
Acute toxicity (inhalation-dust/mist):	Not classified (no symbol, no signal word).
Skin corrosion/irritation:	Category 2 (symbol: "Exclamation Mark", signal word: "Warning").
Serious eye damage/eye irritation:	Not classified (no symbol, no signal word).

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Product Name: ENEOS Kerosine NO.1
Revised on: 20 June, 2019

Respiratory sensitization:	Classification not possible (no symbol, no signal word).
Skin sensitization:	Classification not possible (no symbol, no signal word).
Germ cell mutagenicity:	Not classified (no symbol, no signal word).
Carcinogenicity:	Category 2 (symbol: "Health Hazard", signal word: "Warning").
Reproductive toxicity:	Classification not possible (no symbol, no signal word).
Specific target organ toxicity, single exposure:	Category 3 [respiratory tract irritation and narcotic effect]; (symbol: "Exclamation Mark", signal word: "Warning").
Specific target organ toxicity, repeated exposure:	Classification not possible (no symbol, no signal word).
Aspiration hazard:	Category 1 (symbol: "Health Hazard", signal word: "Danger").
Hazardous to the aquatic environment, acute hazard:	Classification not possible (no symbol, no signal word).
Hazardous to the aquatic environment, long-term hazard:	Classification not possible (no symbol, no signal word).
Hazardous to ozone layer	Classification not possible (no symbol, no signal word).

GHS Label element

Pictogram



Signal word: Danger.

Hazard statements:
 Flammable liquid and vapour.
 Causes skin irritation.
 Suspected of causing cancer.
 May cause respiratory irritation, drowsiness or dizziness.
 May be fatal if swallowed and enters airways.

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JXTG Nippon Oil & Energy Corporation

Product Name: ENEOS Kerosine NO.1
Revised on: 20 June, 2019

Precautionary Statements:**"Preventive Measures"**

- Use only for kerosine burning appliance
- Do not use mixture with other petroleum products (may cause accidents and engine failure).
- Do not handle until all safety precautions (i.e. SDS) have been read and understood.
- Keep container tightly closed.
- Keep away from heat/sparks/open flames/hot objects. Do not heat up. - No smoking.
- Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools.
- Take precautionary measures against static discharge. Earth when shifting into other containers.
- Never siphon by mouth.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Use only outdoors or in a well-ventilated area. Avoid breathing mist/vapours.
- Wash hands thoroughly after handling.
- Do not pressurize empty containers (may cause rupture).
- Do not weld, heat up, drill or cut containers (may cause explosion or ignition by residue). Do not handle containers in violent manners such as, falling, dropping or jolting.
- Avoid release to the environment.

"Response"

- **IN CASE OF FIRE:** Use powder extinguishers to extinguish a fire.
- **IF SPILLED:** Wipe out spillage immediately.
- **IF ON SKIN (OR HAIR):** Take off immediately all contaminated clothing. Wash skin with large amount of water using soap. Contaminated clothing must be laundered before reuse.
- **IF SKIN IRRITATION OCCURS:** Get medical advice/attention.
- **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
- **IF EXPOSED OR CONCERNED, WHEN FEEL UNWELL:** Get medical advice/attention.
- **IF INHALED:** Remove person to fresh air and keep comfortable for

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JXTO Nippon Oil & Energy Corporation

Product Name: ENEOS Kerosine NO.1
Revised on: 20 June, 2019

breathing.

•**IF SWALLOWED:** Immediately call a poison center doctor. Do not induce vomiting.

"Storage"

•Store locked up in a cool and well-ventilated place away from direct sunlight.

"Disposal"

•Dispose preferably to a recognized collector. The competence of the collector should be established beforehand.

3. Composition and Information on Ingredients

Substance or Mixture:	Substance.
Chemical or common name:	Petroleum hydrocarbon
Synonym:	Kerosine (Petroleum hydrocarbons)
Constituent and contents:	Petroleum hydrocarbons of mostly C8~C16 and additives. Not possible to define.
Chemical characteristics: (chemical formulae)	
CAS No.	8008 – 20 – 6, 64741 – 77 – 1, 64742 – 81 – 0
UN No.	1223

4. First-Aid Measures

Inhalation:	<ol style="list-style-type: none"> 1. Remove casualty to fresh air and keep at rest in a position comfortable for breathing. Cover with blanket to keep warm and rest in a quiet surrounding. Seek immediate medical advice and attention. 2. If breathing has stopped or breathing is weak, loosen clothing, secure airways, and apply artificial respiration.
Skin (or, hair) contact:	<ul style="list-style-type: none"> • Remove immediately all contaminated clothing. Wash skin with large amount of water using soap. Contaminated clothing must be laundered before reuse.

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Product Name: ENEOS Kerosine NO.1
Revised on: 20 June, 2019

Eye contact:	<ul style="list-style-type: none"> * Rinse cautiously with clean water for several minutes. Remove contact lenses, if present and easy to do, and continue rinsing. After rinsing for a minimum of 15 minutes, seek medical advice and attention.
Ingestion:	<ul style="list-style-type: none"> * Without inducing vomiting, call a doctor for treatment. If mouth has been dirtied, clean with water.
Most important indication of immediate and delayed symptoms:	<ul style="list-style-type: none"> * If swallowed, may irritate mucous membrane of stomach, induce vomiting, cause stomach pain, diarrhea, and etc. In doing so, vomit may enter into lungs, cause internal bleeding within lung tissues, and induce pulmonary edema and chemical pneumonia.
Protection of individuals who undertake measures in an emergency:	<ul style="list-style-type: none"> * Useful information not available at time of this issue.
Special notes to doctors:	<ul style="list-style-type: none"> * Useful information not available at time of this issue.

5. Fire Fighting Measures

Appropriate extinguishing media:	<ol style="list-style-type: none"> 1. Effective to use concentrated strong liquid in mist and powder forms, carbon dioxide and foam. 2. Use powder and carbon dioxide extinguishers at initial stages of fire. 3. Effective to use foam to shutdown the air in a large-scale fire.
Inappropriate extinguishing media:	<ul style="list-style-type: none"> * May endanger and enlarge fire in event of use of column of water (such as, projection of water from fire-fighting hose).
Specific hazards with regard to fire-fighting:	<ol style="list-style-type: none"> 1. Upon contact with hot metal plate or a leak from fuel pipe, vapour so released is susceptible to catch fire and may result in combustion or explosion. 2. Generates smoke, carbon monoxide, sulfuric acid gas and etc. during combustion.
Fire fighting instructions:	<ol style="list-style-type: none"> 1. Water the surrounding equipment to cool them down. 2. Cordon off the affected place and its vicinity to all, except the concerned parties.

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Product Name: ENEOS Kerosine NO.1

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- Protection of individuals who extinguish fire:
- * Ensure to wear protective equipment and approach from windward. If contact with skin is expected, ensure to wear impervious protective equipment and gloves.

6. Accidental Release Measures

- Personal precautions, protective equipment and emergency procedures:
- * Prepare fire-fighting equipment and materials. Wear protective clothing before engaging in fire fighting.
- Environmental precautions:
1. Prevent spillage into sewage, river and etc., and take measures to prevent a secondary disaster and environmental pollution.
 2. In event of spillage in the sea, extend oil fences to prevent diffusion, and sop up with absorbent materials. In event of using chemicals and/or detergents, they must satisfy the technical standards as set by the Ministry of Land, Infrastructure and Transport.
- Methods and materials for recovery, neutralization, containment and cleaning:
1. Promptly remove all ignition sources and stop leakages.
 2. Remove people from danger zone. Cordon off the danger zone and its vicinity by running a caution rope, and prevent entry of people.
 3. In a small leakage, absorb and recover by use of soil, sand, sawdust and waste clothes.
 4. In a large leakage, enclose it with sand bank and stop outflow. Cover liquid surface with foam, and recover liquid into containers.
 5. In event of a leakage inside a building, open windows and doors to sufficiently ventilate the area.
- Preventive measures against secondary disaster:
1. Promptly notify concerned authorities with objective to plan preventive measures and diffusion after the leakage.
 2. Promptly remove potential ignition sources nearby, and prepare fire extinguishers.
 3. Prevent leakage into sewers, rivers and etc., and take

JXTG Nippon Oil & Energy Corporation

Product Name: ENEOS Kerosine NO.1
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measures to prevent secondary disaster and environmental pollution.

7. Handling and Storage**Handling:****Technical measures:**

1. In event of a need to handle this material over the allocated volume, ensure to execute the process in refineries, storage points and warehouses that are approved to have met requisite standards as set by the laws.
2. Keep away from heat, sparks, open flames, hot objects and etc., and avoid, whenever possible, a generation of vapour. No smoking.
3. Take measures against static discharge. Ensure to wear clothing and shoes made of conductive materials.
4. NEVER suck up (siphoning) this material by mouth.
5. Wear personal protective equipment if there exists a chance of getting contact with skin or enter into eye.
6. Do not handle containers in violent manners; such as, falling, dropping, or jolting.

Precautions:

- * In event a work has to be processed in a building, make sure to apply sufficient ventilation.
- * Install explosion-proof type ventilation equipment.

Safe handling precautions:

- * Avoid contact with halogens, strong acids, alkali and oxidizing materials.

Storage:**Safe storage conditions:**

1. Store in a cool and well-ventilated place, away from direct sunlight.
2. Keep containers tightly closed and lock up storage area.
3. Label and display as dangerous material and store.
4. Avoid heat, sparks, open flame and static accumulation.

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- | | |
|-------------------------------------|--|
| Appropriate technical precautions: | • All electrical appliances used in storage area shall be explosion-proof types, and they all must be earthed. |
| Precautions: | • Avoid contact and storage in same place with halogens, strong acids, alkali and oxidizing materials. |
| Safe container packaging materials: | 1. Do not pressurize empty containers. May cause rupture.
2. Do not weld, heat up, drill or cut containers. May ignite the residue and cause explosion. |

8. Exposure Controls and Personal Protection

- | | |
|---------------------------------|--|
| Equipment: | • Install explosion-proof type ventilations for any work that has to be carried out in a building.
• Install eye shower and body shower near the work site. |
| Standard concentration control: | • Not specified for kerosine. |
| Allowable concentration: | ACGIH [®] (2018 version)
(Kerosene/Jet Fuels, as total hydrocarbon vapour)
Time weighted average(TWA); 200 mg/m ³ |
| Protective equipment: | |
| Respiratory protection: | • Use respiratory equipment appropriately in response to the circumstances. |
| Hand protection: | • Use oil-proof protective hand gloves appropriately in response to the circumstances. |
| Eye protection: | • Use safety glasses with side protection appropriately in response to the circumstances. |
| Skin and body protection: | • Use protective clothing appropriately in response to the circumstances. |
| Special precautions: | • Useful information not available at time of this issue. |

9. Physical and Chemical Properties

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Product Name: ENEOS Kerosine NO.1
Revised on: 20 June, 2019

Physical state and shape:	Liquid
Colour:	Colourless and transparent
Odour:	Subtly oily smell.
pH:	No data available.
Melting point/freezing point:	- 40 °C or less.
Boiling points, initial boiling point and boiling range:	140 to 310 °C.
Flash point:	40 to 75 °C (TAG)
Upper/lower flammability or explosive limits:	Lower limit: 1 vol. % (estimate) Upper limit: 7 vol. % (estimate)
Vapour pressure:	Below 0.35 kPa (37.8 °C)
Vapour density:	4 to 5 (air = 1)
Density:	0.76 to 0.83 g/cm ³ (15°C)
Solubility:	Not soluble in water.
Partition coefficient: n-octanol/water,	No data available.
Spontaneous ignition temp.:	About 240 °C
Decomposition temperature:	No data available.
Other data	
Volatility:	No data available
Initial boiling point:	140 to 195 °C

10. Stability and Reactivity

Chemical Stability:	• Stable if stored and kept in dark place at normal temperature.
Hazard reactivity:	• Avoid contact with strong oxidizing agent.
Conditions to avoid:	• Avoid static discharge, jolting and vibration.
Materials to avoid:	• Useful information not available at time of this issue.
Dangerous substances to mix or contact with:	• Care should be taken to avoid contact with halogens, strong acids, alkalis, and oxidizing materials.
Hazardous decomposition products:	• Generates smoke, carbon monoxide, sulfurous acid gas, and etc, during combustion.
Others:	• Useful information not available at time of this issue.

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JXTC Nippon Oil & Energy Corporation

Product Name: ENEOS Kerosine NO.1

Revised on: 20 June, 2019

11. Toxicological Information

Acute toxicity:	<ul style="list-style-type: none"> • Oral: LD50 test on rats exposed to jet propulsion fuel (JP-5) indicated a value >48000mg/kg ^{b)}, GLP test on rats could not prove death under oral administration of a straight run kerosine at 5000 mg/kg. ^{c)} • Skin: GLP test on rabbit could not prove death under oral administration of straight run kerosine at 2000mg/kg. ^{c)} • Inhalation (vapour): No data available.
Skin corrosion/irritation:	<ul style="list-style-type: none"> • Recognized irritation effect by skin (humans) contact. ^{b,d,e,f)}
Serious eye damage/eye irritation:	<ul style="list-style-type: none"> • Does not irritate the eye. ^{f)} • Draize test (GLP test) on rabbit could not recognize irritation effect. ^{e)}
Respiratory or skin sensitization:	<ul style="list-style-type: none"> • Respiratory: No data available. • Skin: Buehler test (GLP test) on guinea pig could not recognize sensitization effect. ^{g)}
Germ cell mutagenicity:	<ul style="list-style-type: none"> • A positive result^{b)} exists on jet fuel A in a chromosome aberration test using rats bone marrow cells, under the somatic in vivo mutagen test conditions, but negative results exist on kerosine. ^{b,c,d)} Negative results are found on diesel No.1 fuel in a micronucleus test using mouse bone marrow^{e)}, and, further, on kerosine and jet fuel in a rodent dominant lethal mutation test. ^{d)}
Carcinogenicity:	<ul style="list-style-type: none"> • IARC 45 (1989) classified Jet fuel (kerosine, 8008-20-6) and Distillate (light) fuel oils into Group 3 ^{b)}, but ACGIH (2001) classified Kerosine/Jet fuels into A3. ^{d)}
Reproductive toxicity:	<ul style="list-style-type: none"> • Data^{b,d,g)} exist that do not recognize reproductive toxicity on pregnant rats administered with subject material, but its effect on mother beasts being unknown, a question remains open as to whether or not administered volume (below saturation concentration that can be calculated from vapour pressure) was appropriate.
Specific target organ toxicity, single exposure:	<ul style="list-style-type: none"> • Recognized restraint in central nervous system and dizziness in human under the exposure. ^{b,d,f)} • Recognized respiratory tract irritation in mouse under the exposure. ^{d)}

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Specific target organ toxicity, repeated exposure: •No data available.
Aspiration toxicity: •Causes chemical pneumonia to human by accidental inhalation. ^{b,e)}

12. Ecological Information

Toxicity: •Unknown.
Persistence and degradability: •Unknown.
Bioaccumulative potential: •Unknown.
Mobility in soil: •Unknown.
Hazardous to ozone layer: •No information

13. Disposal Considerations

1. In event of burning this material, ensure to carryout work in safe place with guards in position, and select a method that would not cause any harm or damage to others during combustion or explosion. Or, follow the advice of the local municipal bodies.
2. In event of disposing this material, it shall be classified as a "special management industrial waste (waste oil)". As such, disposal process must follow related governing laws and regulations (Waste Disposal and Public Cleaning Law and Fire Service Law). Consign work to the special industrial-waste disposal collector for disposal.
3. Abide by other laws and regulations that are applicable.

14. Transportation Information

International restriction:
UN number: • 1223
Name of articles: • Kerosine (Kerosene or paraffin oil)
UN classification: • Class 3 (Flammable Liquid)

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Product Name: ENEOS Kerosine NO.1
Revised on: 20 June, 2019

- Container grade: * III
Ocean pollution material: * Subject to governing restrictions.
Domestic restriction (Land) * Comply with applicable laws and regulations.

15. Regulatory Information**National Laws and Regulations:**

Workplace Safety and Health Act & Workplace Safety and Health Regulations

16. Other Information**Reference**

- a) ACGIH Threshold limit values and biological exposure indices. (2018)
- b) IARC Monographs on the evaluation of carcinogenic risks to humans. Vol.45 (1989)
- c) IUCLID (2000)
- d) ACGIH Documentation 7th (2001)
- e) EHC 20 (1982)
- f) Patty 4th (1994)
- g) NTP TR310 (1986)

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Safety Data Sheet

OLI-9104.x

1. Product and company identification

Product name : OLI-9104.x
Material uses : Petrochemical industry: Fuel additive.
Internal code : IFS0089
System code : IFS0089
Supplier : Innospec Fuel Specialties LLC
 8310 South Valley Highway
 Suite 350
 Englewood
 CO, 80112
 USA
Information contact : 1-800-441-9547
e-mail address of person responsible for this SDS : sdsinfo@innospecinc.com
NON-emergency enquiries : corporatecommunications@innospecinc.com

Emergency telephone number

In USA, Canada and North America, 24 hour / 7 day emergency information for our product is provided by the CHEMTREC® Emergency Call Center based in the USA

Country information	: Emergency telephone number
USA, Canada, Puerto Rico, Virgin Islands	: +1 800 424 9300
In case of difficulties, or for ships at sea	: +1 703 527 3887

In Europe, Middle East, Africa, Asia Pacific and South America 24 hour / 7 day emergency response for our products is provided by the NCEC CARECHEM 24 global network



The main regional centres are listed here in Section 1.

Other local contact numbers for specific language support in Asia Pacific are listed in Section 16

Country information	Emergency telephone number	Location
South America (all countries)	: +1 215 207 0061	Philadelphia USA
Brazil	: +55 11 3197 5891	Brazil
Mexico	: +52 555 004 8763	Mexico
Europe (all countries) Middle East, Africa (French, Portuguese, English)	: +44 (0) 1235 239 670	London, UK
Middle East, Africa (Arabic, French, English)	: +44 (0) 1235 239 671	Lebanon
Asia Pacific (all countries except China)	: +65 3158 1074	Singapore
China	: +86 10 5100 3039	Beijing China

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Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 ASPIRATION HAZARD - Category 1
GHS label elements	
Hazard pictograms	: 
Signal word	: Danger
Hazard statements	: H226 - Flammable liquid and vapor. H319 - Causes serious eye irritation. H315 - Causes skin irritation. H351 - Suspected of causing cancer. H304 - May be fatal if swallowed and enters airways.
Precautionary statements	
Prevention	: P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P264 - Wash hands thoroughly after handling.
Response	: P308 + P313 - IF EXPOSED OR CONCERNED: Get medical attention. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. P332 + P313 - If skin irritation occurs: Get medical attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
Storage	: P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

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Section 2. Hazards identification

Target organs : Contains material which causes damage to the following organs: blood, kidneys, liver, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.
Contains material which may cause damage to the following organs: lungs, the nervous system.

See toxicological information (Section 11)

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Solvent naphtha (petroleum), light arom.	30 - 60	64742-95-6
1,2,4-trimethylbenzene	15 - 30	95-63-6
Benzene, ethylenated, residues, distn. lights	0.99 - 4.99	178535-25-6
Solvent naphtha (petroleum), heavy arom.	0.99 - 4.99	64742-94-5
triethylbenzene	0.99 - 4.99	25340-18-5
Kerosine (petroleum)	0.99 - 4.99	8008-20-6
cumene	0.99 - 4.99	98-82-8
Xylene	0.99 - 4.99	1330-20-7
naphthalene	0.09 - 0.99	91-20-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Additional information

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Remove dentures if any. Wash out mouth with water. Stop if the exposed person feels sick as vomiting may be dangerous. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention.

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Section 4. First aid measures

immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- Ingestion** : May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.
- Specific hazards arising from the chemical** : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Flash point** : Closed cup: 48.889°C (120°F)

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Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
1,2,4-trimethylbenzene	<p>ACGIH TLV (United States, 4/2014). TWA: 25 ppm, 0 times per shift, 8 hours. TWA: 123 mg/m³, 0 times per shift, 8 hours.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 25 ppm, 0 times per shift, 8 hours. TWA: 125 mg/m³, 0 times per shift, 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 25 ppm, 0 times per shift, 10 hours. TWA: 125 mg/m³, 0 times per shift, 10 hours.</p>
Kerosine (petroleum)	<p>NIOSH REL (United States, 10/2013). TWA: 100 mg/m³ 10 hours.</p> <p>ACGIH TLV (United States, 3/2015). Absorbed through skin. TWA: 200 mg/m³, (as total hydrocarbon vapor) 8 hours.</p>
cumene	<p>OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. TWA: 50 ppm, 0 times per shift, 8 hours. TWA: 245 mg/m³, 0 times per shift, 8 hours.</p> <p>NIOSH REL (United States, 10/2013). Absorbed through skin. TWA: 50 ppm, 0 times per shift, 10 hours. TWA: 245 mg/m³, 0 times per shift, 10 hours.</p> <p>ACGIH TLV (United States, 4/2014). TWA: 50 ppm, 0 times per shift, 8 hours.</p> <p>OSHA PEL (United States, 2/2013). Absorbed through skin. TWA: 50 ppm, 0 times per shift, 8 hours. TWA: 245 mg/m³, 0 times per shift, 8 hours.</p>
Xylene	<p>ACGIH TLV (United States, 3/2016). TWA: 100 ppm, 0 times per shift, 8 hours. TWA: 434 mg/m³, 0 times per shift, 8 hours. STEL: 150 ppm, 0 times per shift, 15 minutes. STEL: 651 mg/m³, 0 times per shift, 15 minutes.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 100 ppm, 0 times per shift, 8 hours. TWA: 435 mg/m³, 0 times per shift, 8 hours. STEL: 150 ppm, 0 times per shift, 15 minutes. STEL: 655 mg/m³, 0 times per shift, 15 minutes.</p> <p>OSHA PEL (United States, 6/2016). TWA: 100 ppm, 0 times per shift, 8 hours. TWA: 435 mg/m³, 0 times per shift, 8 hours.</p>
naphthalene	<p>ACGIH TLV (United States, 3/2015). Absorbed through skin.</p>

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Section 8. Exposure controls/personal protection

TWA: 10 ppm, 0 times per shift, 8 hours.
 TWA: 52 mg/m³, 0 times per shift, 8 hours.
OSHA PEL 1989 (United States, 3/1989).
 TWA: 10 ppm, 0 times per shift, 8 hours.
 TWA: 50 mg/m³, 0 times per shift, 8 hours.
 STEL: 15 ppm, 0 times per shift, 15 minutes.
 STEL: 75 mg/m³, 0 times per shift, 15 minutes.
NIOSH REL (United States, 10/2013).
 TWA: 10 ppm, 0 times per shift, 10 hours.
 TWA: 50 mg/m³, 0 times per shift, 10 hours.
 STEL: 15 ppm, 0 times per shift, 15 minutes.
 STEL: 75 mg/m³, 0 times per shift, 15 minutes.
OSHA PEL (United States, 2/2013).
 TWA: 10 ppm, 0 times per shift, 8 hours.
 TWA: 50 mg/m³, 0 times per shift, 8 hours.

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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Section 8. Exposure controls/personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Clear. Amber. [Light]

Odor : Aromatic.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : Lowest known value: 138.85°C (281.9°F) (xylene). Weighted average: 172.9°C (343.2°F)

Flash point : Closed cup: 48.889°C (120°F)

Evaporation rate : Highest known value: 0.77 (xylene) Weighted average: 0.29 compared with butyl acetate

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Greatest known range: Lower: 0.6% Upper: 7% (Solvent naphtha (petroleum), heavy arom.)

Vapor pressure : Highest known value: 0.7 to 0.9 kPa (5 to 6.6 mm Hg) (at 20°C) (xylene). Weighted average: 0.27 kPa (2.03 mm Hg) (at 20°C)

Vapor density : Highest known value: 5.5 (Air = 1) (Benzene, ethylenated, residues, distn. lights). Weighted average: 4.46 (Air = 1)

Specific gravity : 0.929 [ASTM D 4052]

Density : 7.73 lbs/gal

Solubility : Insoluble in the following materials: cold water, hot water.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Lowest known value: 228.85°C (443.9°F) (Kerosine (petroleum)).

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C (104°F)): 0.06 cm²/s (6 cSt)

Aerosol product

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Species	Result	Dose
Solvent naphtha (petroleum), light arom.	-	Rat	LD50 Oral	8400 mg/kg -
Solvent naphtha (petroleum), heavy arom.	-	Rat	LC50 Inhalation Vapor	>590 mg/ 4 hours m ³
-	-	Rabbit	LD50 Dermal	>2 mL/kg -
-	-	Rabbit	LD50 Dermal	2000 mg/kg -
-	-	Rat	LDLo Oral	5 mL/kg -
Kerosine (petroleum)	-	Rabbit	LD50 Dermal	>2000 mg/ kg -
-	-	Rat	LD50 Oral	15 g/kg -
cumene	-	Rat	LC50 Inhalation Vapor	39000 mg/ 4 hours m ³
-	-	Rat	LD50 Oral	1400 mg/kg -
Xylene	-	Rabbit	LD50 Dermal	4320 mg/kg -
-	-	Rat	LD50 Oral	4300 mg/kg -
naphthalene	-	Rat	LC50 Inhalation Vapor	>340 mg/ 1 hours m ³
-	-	Rabbit	LD50 Dermal	>2000 mg/ kg -
-	-	Rat	LD50 Dermal	>2500 mg/ kg -
-	-	Rat	LD50 Oral	490 mg/kg -

Potential chronic health effects

Not available.

Irritation/Corrosion

Product/ingredient name	Test	Species	Result
Solvent naphtha (petroleum), light arom.	-	Rabbit	Eyes - Mild irritant -
Solvent naphtha (petroleum), heavy arom.	-	Rabbit	Skin - Mild irritant -
-	-	Mammal - species unspecified	Eyes - Mild irritant -
Kerosine (petroleum)	-	Rabbit	Skin - Moderate irritant -
-	-	Rabbit	Skin - Severe irritant -
cumene	-	Rabbit	Eyes - Mild irritant -
-	-	Rabbit	Eyes - Mild irritant -
-	-	Rabbit	Skin - Mild irritant -
-	-	Rabbit	Skin - Moderate irritant -
Xylene	-	Rabbit	Eyes - Severe irritant -
-	-	Rat	Skin - Mild irritant -
-	-	Rabbit	Skin - Moderate irritant -

Sensitization

Not available.

Mutagenicity

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Section 11. Toxicological information

Not available.

Carcinogenicity**Classification**

Product/ingredient name	OSHA	IARC	NTP
cumene	-	2B	Reasonably anticipated to be a human carcinogen.
Xylene	-	3	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
1,2,4-trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
Solvent naphtha (petroleum), heavy arom.	Category 3	Not applicable.	Narcotic effects
cumene	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Name	Result
Solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1
Benzene, ethylenated, residues, distn. lights	ASPIRATION HAZARD - Category 1
Solvent naphtha (petroleum), heavy arom.	ASPIRATION HAZARD - Category 1
triethylbenzene	ASPIRATION HAZARD - Category 1
Kerosine (petroleum)	ASPIRATION HAZARD - Category 1
cumene	ASPIRATION HAZARD - Category 1
Xylene	ASPIRATION HAZARD - Category 1

Section 12. Ecological information**Toxicity**

Product/ingredient name	Result	Species	Exposure
1,2,4-trimethylbenzene	Acute LC50 7.72 mg/l	Fish	96 hours
Benzene, ethylenated, residues, distn. lights	Acute EC50 8.2 mg/l (growth rate) Fresh water	Algae	72 hours
	Acute EC50 1.3 mg/l Fresh water	Daphnia	48 hours
			WAF
Solvent naphtha (petroleum), heavy arom.	Acute EC50 1 to 3 mg/l	Algae	72 hours
	Acute EC50 3 to 10 mg/l	Daphnia	48 hours
	Acute LC50 2 to 5 mg/l	Fish	96 hours
cumene	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours

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Section 12. Ecological information

Xylene naphthalene	Acute EC50 10.6 mg/l	Daphnia	48 hours
	Acute LC50 2.7 mg/l	Fish	96 hours
	Acute LC50 3.3 mg/l	Fish	96 hours
	Acute EC50 1.96 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 1.6 mg/l	Fish	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Benzene, ethylenated, residues, distn. lights	-	-	Not readily
Solvent naphtha (petroleum), heavy arom.	-	-	Inherent
Xylene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Solvent naphtha (petroleum), light arom.	-	10 to 2500	high
1,2,4-trimethylbenzene	4.09	275	low
Solvent naphtha (petroleum), heavy arom.	-	<100	low
cumene	3.66	94.69	low
Xylene	3.12 to 3.2	8.1 to 25.9	low
naphthalene	3.3	>100	low

Section 13. Disposal considerations

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	NA1993	UN1993	UN1993
			Flammable liquid, n.o.s. (Solvent naphtha (petroleum), light arom., 1,2,4-trimethylbenzene)

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Section 14. Transport information			
UN proper shipping name	Combustible liquid, n.o.s. (Solvent naphtha (petroleum), light arom., 1,2, 4-trimethylbenzene). Marine pollutant (Solvent naphtha (petroleum), light arom., 1,2, 4-trimethylbenzene)	FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light arom., 1,2, 4-trimethylbenzene). Marine pollutant (Solvent naphtha (petroleum), light arom., 1,2, 4-trimethylbenzene)	
Transport hazard class(es)	Combustible liquid. 	3 	3 
Packing group	III	III	III
Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	<p>Non-bulk packages (less than or equal to 119 gal) of combustible liquids, that are marine pollutants, are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by vessel.</p> <p>This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.</p> <p>Reportable quantity 9674.9 lbs / 4392.4 kg [1249 gal / 4728.1 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p> <p>Limited quantity Yes.</p> <p>Packaging instruction Passenger aircraft Quantity limitation: 60 L</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p>Emergency schedules (EmS) F-E, _S-E_</p> <p>Special provisions 223, 274, 855</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p> <p>Passenger and Cargo Aircraft Quantity limitation: 60 L Packaging instructions: 355 Cargo Aircraft Only Quantity limitation: 220 L Packaging instructions: 366 Limited Quantities - Passenger Aircraft Quantity limitation: 10 L Packaging instructions: Y344</p> <p>Special provisions A3</p>
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Section 14. Transport information

	Cargo aircraft Quantity limitation: 220 L <u>Special provisions</u> 148, IB3, T1, TP1		
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Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b):** All components are listed or exempted.
Clean Water Act (CWA) 307: toluene; naphthalene; ethylbenzene; chloromethane

Clean Air Act Section 112 : Listed

(b) Hazardous Air Pollutants (HAPs)

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
sulphuric acid	0 - 0.09	Yes.	1000	66.3	1000	66.3
sulphur dioxide	0 - 0.09	Yes.	500	-	500	-

SARA 304 RQ : 47917578 lbs / 21754580.4 kg [6186170.2 gal / 23417201.7 L]

SARA 311/312

Classification : Fire hazard
 Immediate (acute) health hazard
 Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Solvent naphtha (petroleum), light arom.	30 - 60	Yes.	No.	No.	Yes.	No.
1,2,4-trimethylbenzene	15 - 30	Yes.	No.	No.	Yes.	No.
Benzene, ethylenated, residues, distn. lights	0.99 - 4.99	No.	No.	No.	Yes.	No.
Solvent naphtha (petroleum), heavy arom.	0.99 - 4.99	Yes.	No.	No.	Yes.	No.
triethylbenzene	0.99 - 4.99	Yes.	No.	No.	No.	No.
Kerosine (petroleum)	0.99 - 4.99	Yes.	No.	No.	Yes.	No.
cumene	0.99 - 4.99	Yes.	No.	No.	Yes.	Yes.
Xylene	0.99 - 4.99	Yes.	No.	No.	Yes.	No.

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Section 15. Regulatory information

naphthalene	0.09 - 0.99	No.	No.	No.	Yes.	Yes.
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SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	1,2,4-trimethylbenzene	95-83-6	15 - 30
	cumene	98-82-8	0.99 - 4.99
	xylene	1330-20-7	0.99 - 4.99
	naphthalene	91-20-3	0.09 - 0.99
Supplier notification	1,2,4-trimethylbenzene	95-83-6	15 - 30
	cumene	98-82-8	0.99 - 4.99
	xylene	1330-20-7	0.99 - 4.99
	naphthalene	91-20-3	0.09 - 0.99

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: CUMENE; PSEUDOCUMENE; XYLENE; KEROSENE
- New York** : The following components are listed: Cumene; Benzene, 1-methylethyl-; Naphthalene; Xylene (mixed)
- New Jersey** : The following components are listed: CUMENE; BENZENE, (1-METHYLETHYL)-; NAPHTHALENE; MOTH FLAKES; PSEUDOCUMENE; 1,2,4-TRIMETHYL BENZENE; XYLENES; BENZENE, DIMETHYL-; KEROSENE; FUEL OIL #1
- Pennsylvania** : The following components are listed: BENZENE, (1-METHYLETHYL)-; NAPHTHALENE; PSEUDOCUMENE; BENZENE, DIMETHYL-; KEROSENE (PETROLEUM)
- California Prop. 65** : **WARNING:** This product contains a chemical known to the State of California to cause cancer.
WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level	Contains : % or ppm
cumene	Yes.	No.	No.	No.	0.99 - 4.99
naphthalene	Yes.	No.	Yes.	No.	0.09 - 0.99
methanol	No.	Yes.	No.	23000 µg/day (ingestion) 47000 µg/day (inhalation)	<10ppm
ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.	<10ppm
toluene	No.	Yes.	No.	7000 µg/day (ingestion) 13000 µg/day (inhalation)	<10ppm
sulfuric acid	Yes.	No.	No.	No.	<10ppm
sulphur dioxide	No.	Yes.	No.	Yes.	<1ppm
chloromethane	No.	Yes.	No.	No.	<1ppm

International lists

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Section 15. Regulatory information

National inventory

Australia inventory (AICS)

: All components are listed or exempted.

Canada inventory

: All components are listed or exempted.

China inventory (IECSC)

: All components are listed or exempted.

Europe inventory

: At least one component is not listed in EINECS but all such components are listed in ELINCS.
Please contact your supplier for information on the inventory status of this material.

Japan inventory (ENCS)

: **Japan inventory (ENCS):** Not determined.

Japan inventory (ISHL): Not determined.

New Zealand Inventory of Chemicals (NZIoC)

: All components are listed or exempted.

Philippines inventory (PICCS)

: At least one component is not listed.

Korea inventory (KECI)

: Not determined.

Taiwan inventory (TCSI)

: All components are listed or exempted.

United States inventory (TSCA 8b)

: All components are listed or exempted.

Our REACH (pre-) registrations DO NOT cover the following:

1. The manufacture of these products by our company outside the EU unless covered by the Only Representative provisions, and

2. The importation of these products into Europe by other companies. Re-importation by other companies is not covered by our (pre-) registrations

Customers and other third parties importing and/or re-importing our products into Europe will need either:

- Their own (pre-) registration for substances contained in the imported product, or constituent monomers (imported above 1 tonne per year and >2% by weight) in the case of imported polymers, or

- In the case of importation only, to make use of the "Only Representative" provisions, if available.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	2
Flammability	2
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

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Section 16. Other information

Date of printing	: 2017-09-07
Date of issue/Date of revision	: 2017-09-07
Date of previous issue	: 2017-09-07
Version	: 1.1
Key to abbreviations	: ATE - Acute Toxicity Estimate BCF - Bioconcentration Factor GHS - Globally Harmonized System of Classification and Labelling of Chemicals IATA - International Air Transport Association IBC - Intermediate Bulk Container IMDG - International Maritime Dangerous Goods LogPow - logarithm of the octanol/water partition coefficient MARPOL - International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" - marine pollution) UN - United Nations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Date of issue/Date of revision	: 2017-09-07
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Schedule 12. Oil Pollution Incident Reporting Form

Roberts Bay OHF	
Oil Pollution Incident Reporting Form	
	
IMMEDIATE NOTIFICATION (OR AS SOON AS PRACTICABLE) OF ANY DISCHARGE OR ANTICIPATED DISCHARGE OF OIL TO:	
NOTIFICATION COMPLETED BY: X _____	
Regional Canadian Coast Guard Station	1-800-265-0237
Transport Canada, Marine Safety and Security Pollution Prevention Officer	1-888-463-0521
Government of Nunavut 24 Hour Spill Report Line	1-867-920-8130
Nunavut Water Board INAC Inspector	1-867-669-2438
KIA Senior Hope Bay Project Officer	1-867-982-3310
Date:	
Time:	
ROBERTS BAY OHF FACILITY INFORMATION	
Oil Handling Facility Site Location	Roberts Bay, Melleville Sound, 120 kilometers southwest of Cambridge Bay, Nunavut Territory
Oil Handling Facility Jetty Roberts Bay	106° 37' 35.33" W 68° 10' 31.37" N 13W 4325 27 E 7563318N
Oil Handling Facility Level	Level 2 Maximum Transfer Rate this project 300,000 litres per hour
Supplier Vessel Identity i.e.: owner, vessel name, call sign, contact name	
Supplier Vessel Contact Information	Phone: Email: Other:
Name of Person Responsible for Implementing and Coordinating Roberts Bay OHF OPEP	
Contact information for Person Responsible for Implementing and Coordinating Roberts Bay OHF OPEP	Phone: Email:
INCIDENT PARTICULARS	
Time and location of the discharge or estimated time and location of the anticipated discharge	
The nature of the discharge or anticipated discharge, including the type of oil and an estimate of the quantity of oil involved	
Description of the response actions i.e.. include ability to contain/transfer/recover	
On-Scene Conditions i.e.. sea state, wind direction, visibility, hours of daylight, movement of discharge, estimated surface area of spill	
Forward a copy of this written report and any supplementary information to: Transport Canada, Marine Safety and Security (Prairie and Northern Region) pmvb@tc.gc.ca Toll-free: 1-888-463-0521 Direct Number Regional Headquarters Winnipeg: 204-983-3152	
Amended May, 2017	

Schedule 13. Birds and Oil – CWS Response Guidance Plan

CWS Response Plan Guidance
Draft June 2012

Birds and Oil - CWS Response Plan Guidance

In all circumstances where a polluter is identified the burden of cleanup and response lies with the polluter. However, responsibility for government overview of a response to an oil spill depends on the source of the spill. The identified **lead agency** has responsibility to monitor an oil spill response and to take control if an appropriate response is not undertaken by a polluter or their agent.

Lead agency responsibilities lie with:

- **Environment Canada**
 - For spills and incidents on federal lands and from federal vessels
 - Potentially for land-based incidents in waters frequented by fish
 - May take lead if environment is not being protected by other leads, Cabinet Directive 1973
- **Canadian Coast Guard**
 - For spills from ships
 - All spills of unknown sources in marine environment
- **Provincial Department of Environment**
 - For spills from land-based sources
- **Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) and Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB)**
 - For spills related to offshore oil and gas exploration and production
- **Transport Canada**
 - To investigate ship source and mystery spills in the marine environment

The Canadian Wildlife Service has the responsibility for licensing activities which involve the handling or disturbance of birds, and of providing advice and often direction to other agencies, responders and the polluter during oil spill incidents.

1. Hazing¹

Purpose: Prevent birds from coming in contact with oil

Options:

- Hazing by helicopter
- Hazing by FRC or other watercraft
- Release of scare devices (e.g. Breco Buoys, Phoenix Wailer)
- Use of hazing sound makers: propane cannons, whizzers, bangers, pyrotechnic devices etc.

Scare devices have a limited range of influence and likely are not a viable option with a large slick. Use of Breco Buoys and Phoenix Wailers can be used but we consider them to be largely ineffective in the situation of a large slick. Logistically, helicopter hazing would be difficult unless it was possible for a helicopter to remain on a platform offshore overnight. Hazing by FRC or other vessels would be ideal.

¹ There are several scare techniques which may be effective and do not require a permit, however a permit under the Migratory Bird Regulations **is required** for the use of aircraft or firearms (defined as capable of emitting at projectile at more than 495 feet per second). Propane cannons, blank pistols or pyrotechnical pistols firing crackers shells with **less than 495fps are legal without a permit**. Most scare tactics are relatively short lived in terms of effectiveness as birds acclimatize to the disturbance so scare techniques should be alternated to be effective.

Short-term focused hazing by the most expedient means should be attempted to move the birds away from the slick, if logistical conditions permit. Vessels at the site should have the ability to use sound makers (propane canons, pyrotechnic devices) to disperse birds in local areas. Such equipment should be deployed immediately to these ships with trained personnel to operate them. The vessels on site should be tasked to actively search and monitor for congregations of birds which could be vulnerable to oiling. If such groups are found then attempts should be made to disperse the birds away from the oil.

2. Disperse oil

Purpose: Prevent birds from contacting oil by getting oil off the surface of the water as soon as possible.

Options:

- Dispersants
- Mechanical dispersal with FRCs or other vessels
- Natural dispersal by environmental conditions

For small spills, mechanical dispersal would be the preferred method.

3. Bird Collection²

Purpose: Implement a humane response to oiled birds as required by Environment Canada's National Policy on Oiled Birds and Oiled Species At Risk (<http://www.ec.gc.ca/ee-ue/default.asp?lang=En&n=A4DD63E4-1>)

Options:

- The only option would be a ship-based effort to detect and collect dead and live oiled birds, both within the slick and adjacent to it.

All vessels in or near the slick should understand the need to collect birds. All vessels should have dip-nets, large plastic collecting bags to hold dead birds, and cloth bags or cardboard boxes in which to hold live oiled birds. Efforts should be made to retrieve live oiled birds to ensure they are dealt with humanely.

4. Wildlife monitoring

Purpose: Determine potential impact of spill

Options:

- Ship-based surveys for oiled and unoiled wildlife
- Aerial surveys for oiled and unoiled wildlife. Will require structured surveys (e.g. strip or transect surveys of spill area)
- Placement of CWS staff on vessels and aircraft

² Only those individuals authorized to do so (nominee on an existing federal salvage permit) can be involved with the collection of migratory birds.

Dedicated ship-based bird surveys should be initiated immediately. Ideally arrangements should be made to have a CWS observer on vessels or flights. In addition trained seabird observers need to be placed on all vessels monitoring a slick. This should continue until the slick is dispersed.

5. Beached Bird Surveys

Purpose: Determine impact of spill on wildlife and retrieve any live oiled wildlife on beaches.

Options:

- Conduct daily beached bird surveys during the incident and until one week after slick has been removed or dissipated.

CWS or other government officials (CCG, Enforcement Officers) will oversee the collection of dead and live oiled birds³ as instructed in CWS' protocol for collecting birds during an oil spill response. This would only be required in circumstances where a large number of birds are potentially oiled or if the spill occurs in a sensitive area.

6. Drift Blocks

Purpose: Drift blocks may be deployed in slick to provide an estimate of bird mortality.

Options:

- Release from vessel
- Release from aircraft

The deployment of drift blocks would only be expected if there was a large spill and blocks should be released as soon as possible after a spill (CWS should be consulted to determine protocol for drift block deployment and tracking). The polluter or their agent would be expected to ensure drift blocks are tracked and collected as appropriate.

7. Live oiled bird response

Purpose: Implement a humane response to oiled birds as required by Environment Canada's National Policy On Oiled Birds And Oiled Species At Risk

Options:

- Rehabilitation
- Euthanization

CWS will be consulted to determine the appropriate response and treatment strategies which may include cleaning and rehabilitation or euthanization. CWS policy specifically requires that species at risk or other species of concern be rehabilitated.

³ Only those individuals authorized to do so (nominee on an existing federal salvage permit) can be involved with the collection of migratory birds.

Schedule 14 Post Oil Transfer ReportTransport Canada
Marine Safety & SecurityTransports Canada
Sécurité et sûreté Maritime**Post Oil Transfer Report****Facility**

Name	Location	
Operator	Latitude & Longitude	Nautical Chart #

Transfer

Date Started (yyyy-mm-dd)	Maximum Transfer Rate		m ³ /h
Name of Vessel	Shipping Company		
Number of trained OHF staff on site during transfer:			
Transfer Hose			
Diameter: in	Length:	<input type="radio"/> m <input type="radio"/> ft	No. of Sections:
Product 1	Product 2		
Type:	Type:		
Quantity: litre	Quantity: litre		
Product 3	Product 4		
Type:	Type:		
Quantity: litre	Quantity: litre		
<input type="checkbox"/> Ship to Shore Checklist(s) Completed *	*Copies of each to be included with submission of this report to TCMSS		
<input type="checkbox"/> Annual Hose Test Certificate Verified *			
<input type="checkbox"/> Oil Pollution Emergency Plan On Site During Transfer			
<input type="checkbox"/> Spill Response Equipment Checked and Available During Transfer			

OHF Representative

Name

Signature

Date

Send completed report along with supporting documentation to:

tc.erpnr-ierpn.tc@tc.gc.ca

or

Marine Safety – Environmental Response
PO Box 8550, 344 Edmonton St
Winnipeg, MB, R3C 0P6

Schedule 15. NT/NU Spill Report Form



NT-NU SPILL REPORT
OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		REPORT NUMBER
	B OCCURRENCE DATE: MONTH – DAY – YEAR		OCCURRENCE TIME		
			<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE #		
C	LAND USE PERMIT NUMBER (IF APPLICABLE)		WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM THE NAMED LOCATION			REGION <input type="checkbox"/> NT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT	
E	LATITUDE DEGREES MINUTES SECONDS		LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION		
G	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION		
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS				
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE
REPORT LINE USE ONLY					
N	RECEIVED AT SPILL LINE BY	POSITION Station operator	EMPLOYER	LOCATION CALLED Yellowknife, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG/TCMSS <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> AANDC <input type="checkbox"/> NEB <input type="checkbox"/> OTHER: _____			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY	CONTACT NAME		CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					