



Fuel Caching Protocol for National Parks in the Eastern Arctic

**Nunavut Field Unit
Parks Canada Agency
Iqaluit, NU
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**Parks
Canada**

**Parcs
Canada**

1.0 Introduction

- 1.1 For many years Parks Canada and its partner agencies have been storing fuel drums at various cache sites located within the national parks of the Nunavut Field Unit in support of various projects as well as regular and emergency operations.
- 1.2 Due to the remoteness of these protected areas, the storage of fuel at caches within the Nunavut Field Unit is necessary for the continuance of park management programs and operations led by this Agency and our partners.
- 1.3 At present there are no regulations related to the storage of fuel drums in small quantities in wilderness areas. In response, Parks Canada is addressing these issues through the implementation of the current Fuel Caching Protocol for the National Parks in the Nunavut Field Unit.
- 1.4 The protocol will provide Parks Canada, partner agencies, and air charter operators who provide support with instructions to follow when planning projects and/or operations that require fuel caching on national park lands.
- 1.5 It will promote best practices in fuel management such as inventory control, secondary containment, and spill response capacity. This document is intended to be a working document that will grow and evolve over time ensuring the protection of the ecological and cultural integrity of our national parks as well as contributing to the safe use and enjoyment of these national treasures by visitors for generations to come.

2.0 Scope

- 2.1 This document applies to the storage of fuel drums on lands administered by Parks Canada in the Nunavut Field Unit, and supplements any applicable requirements for fuel stored on lands administered under other jurisdictions.
- 2.2 The protocol identifies the minimum standards that will be required in order to cache fuel within the national parks and landmark of the Nunavut Field Unit.



Figure 1. *Regional Map of the National Parks and Landmark in the Nunavut Field Unit*

3.0 Goals

- 3.1 To protect the ecological and cultural integrity of the national parks and landmark in the Nunavut Field Unit.
- 3.2 To support Parks Canada's operational objectives and the operations of management partners.
- 3.3 To limit visual impairment of the landscape in support of visitor experience.
- 3.4 To meet the permitting, regulatory and legal requirements.

4.0 Objectives

- 4.1 To improve inventory capacity and control the storage of fuel in the national parks and landmark
- 4.2 To prevent the deterioration of drums due to handling, age and corrosion.
- 4.3 To prevent or minimize ecological and environmental impacts of the fuel caches stored within Parks Canada lands.
- 4.4 To ensure that equipment is available at all fuel cache sites and clear protocols are in place for fuel containment and spill response.
- 4.5 To minimize visual impairment and refuse at fuel cache locations.

5.0 Constraints

- 5.1 Prior to the creation of the National Parks, of various research stations and old mines were in operation or abandoned, it is not possible to identify the location of all the possible locations of the fuel caches prior to the creation of the Parks.
- 5.2 Due to the immense size and remoteness of the National Parks in the Nunavut Field Unit, it is not possible to know if all fuel caches are known or have been identified within this document.
- 5.3 In addition due to the extreme remoteness, it may be difficult to inspect and confirm if all fuel caches are compliant with the protocol.

6.0 Fuel Cache Locations in the National Parks of the Nunavut Field Unit

- 6.1 Various other government and non-government organizations that have presence within the National Park since its inception, all owners of the fuel caches are responsible to comply with this protocol.
- 6.2 Appendix 2 contains a list of fuel caches known to Parks Canada within the Nunavut Field Unit Parks.
- 6.3 New fuel caches or newly discovered fuel caches within the National Parks administered by the Nunavut Field Unit shall be added to the known cache list and must within 1 field season, comply with the requirements of this protocol.

7.0 General Protocols for Fuel Caching

- 7.1 Authorization:
- 7.1.1 Written authorization from the Field Unit Superintendent or his/her designate is required before any party can cache new fuel on lands administered by Parks Canada in the Nunavut Field Unit. The process for acquiring this authorization is detailed in Section 8.0.
 - 7.1.2 All pre-existing fuel caches or changes to the quantity or location of the fuel caches must be confirmed or acknowledged by the Field Unit Superintendent or his/her designate.
 - 7.1.3 Fuel drums must be cached at the designated areas listed in or appended to this protocol, or as authorized by the Field Unit Superintendent.
 - 7.1.4 All fuel drums stored in a national park or landmark are subject to the general protocols herein.
 - 7.1.5 All cached fuel drums must be removed by the end of the period of occupancy by the indicated date on the authorization.
 - 7.1.6 Parks Canada reserves the right to remove non-compliant fuel caches or fuel caches exceeding the authorized period of occupancy at the cost of the owner of the fuel caches.
 - 7.1.7 The Field Unit Superintendent may charge the responsible owner of the fuel cache under the Parks Canada Act for any non-compliance of the protocol.
- 7.2 Fuel Drum Delivery:
- 7.2.1 Avoid rough handling of fuel drums.
 - 7.2.2 Delivery of fuel drums will include visual inspection of the bottom and top seam and bung for signs of leakage upon placement at each fuel cache location.
 - 7.2.3 Delivery of fuel drums will include placement of drums in appropriate containers acting as a secondary containment.
 - 7.2.4 Fuel drums stored in berm-style secondary containment units must be stored upright and not stacked. Stacking is permitted if barrels are palletized.
- 7.3 Fuel Drum Cache:
- 7.3.1 All fuel must be stored in new or reconditioned drums that are not damaged, rusted, or leaking.
 - 7.3.2 Fuel drums must have a functional bung.
 - 7.3.3 All caches must be located at least 100 metres above the high water mark of any water body including ephemeral drainages.
 - 7.3.4 All drums must bear a Workplace Hazardous Materials Information System (WHMIS) label and product identifier label.
 - 7.3.5 All fuel drums must be clearly marked with:
 - Year placed at the cache site, and
 - Responsible department or agency.
 - Each Barrel should be serialized with a unique identifier

- 7.3.6 The markings on the barrel as indicated in 7.3.5 must remain visible and legible at all times that the fuel cache is in use or operation.
- 7.3.7 Removal of empty drums should be an operational priority of the owner of the barrels. This will limit the size of the cache and hence the potential for environmental impact.

7.4 Spill Kit

- 7.4.1 Each fuel cache will have a spill kit.
- 7.4.2 At minimum the spill kit shall be contained within a 55 gallon blue high density polyethylene drum and be composed of the following:
 - 100 x Sorbent Pads (17"x19") 12oz
 - 4 x Sorbent Socks (96"x 3")
 - 12 x Sorbent Socks (48"x 3")
 - 20 x Hand Wipes
 - 6 x Disposal Bags with ties
 - 1 x 20lb Granular All Purpose Absorbent
 - 1 x Knife
 - 1 x Duct Tape
 - 3 x Dust Masks
 - 2 x prs. Green Nitrile Gloves
 - 2 x prs. Goggles
 - 2 x prs. Disposable Coveralls
 - 1 x Instruction Sheet
 - 1 x Plug-n-Dyke drum calking (dry)
 - 1 x Shovel
 - 2 x Tarpaulins
- 7.4.3 Where the spill kits are non-compliant or non-existent, Parks Canada will provide the spill kit at the cost of the fuel cache owner.

7.5 Secondary Containment:

- 7.5.1 All cached fuel drums must be stored in portable secondary containment units with impermeable hydrocarbon catchment basin to contain spilled fuel.
- 7.5.2 The secondary containment system must be of sufficient thickness and toughness to be able to tolerate the wear and tear of moving barrels into and out of the containment system.
- 7.5.3 Any damage to the secondary containment system must be immediately repaired or replaced. Otherwise any material leaking from the secondary containment system will be considered an unauthorized discharge. Unauthorized discharges will be reported to the appropriate authorities.
- 7.5.4 It is the responsibility of the owner or responsible party of the fuel cache to clean up any spills from the secondary containment.
- 7.5.5 Due to the remote nature of the sites, these units must be convenient to transport in an aircraft class capable of landing at these sites (generally a helicopter or twin otter-type aircraft).
- 7.5.6 The secondary containment unit must be capable of containing a volume of spilled fuel 10% greater than the capacity of the total volume placed herein (e.g. if the total fuel contained is 2000 litre, the secondary containment unit must be capable of containing a spill of 2200 litres).
- 7.5.7 Note that the fuel containment capacity requirements of any unit will be subject to the discretion of the Superintendent or his/her designate and may change depending on factors such as quantity of fuel to be cached in the unit and type of containment unit employed.
- 7.5.8 As these sites are sometimes not visited for up to nine months, the containment unit should be weatherproofed to keep water and snow out of the containment area using a system that can easily be accessed and secured by fuel cache users and requires limited upkeep.
- 7.5.9 Fuel drums stored in berm-style secondary containment units must be stored upright and not stacked. Stacking is permitted if barrels are palletized.
- 7.5.10 It is the responsibility of the owner of the fuel caches to ensure that any discharge from the secondary containment meets the territorial discharge criteria.
- 7.5.11 The owner of the fuel cache will take all necessary action to clean up and prevent unauthorized discharge of fuel or contaminated melt water from the secondary containment.
- 7.5.12 Secondary containment units must not be locked.

7.6 Inventory:

- 7.6.1 At the end of each summer field season (mid-September), groups storing fuel will be required to provide Parks Canada with an updated fuel drum inventory for cache site(s) by fuel type and year placed at

the site, indicating the number of full, partial, and empty drums remaining.

7.6.2 Complete the Fuel Cache Inventory Form (Appendix 3) and send it to the appropriate Park Manager listed in section 10.0.

7.7 Non-Compliance:

7.7.1 Failure to comply with general protocols herein will result in fuel drum removal initiated by Parks Canada at the cost of the owner or the responsible organization that owns the fuel cache.

7.7.2 Parks Canada reserves the right to clean up and remediate any soil impacted by the fuel caches at the cost of the owner or the responsible organization that owns the fuel cache.

7.7.3 Parks Canada will report any unauthorized discharge to the appropriate authorities.

7.7.4 The Field Unit Superintendent may charge the responsible owner of the fuel cache under the Parks Canada Act for any non-compliance of the protocol.

7.7.5 The responsible owner may also be charged by other government agencies or departments for any breach of Federal or Territorial regulations.

8.0 Authorization Process for Caching Fuel in the National Parks of the Nunavut Field Unit

8.1 Allow for a minimum of 90 days from date of written request to approval of the fuel cache.

8.2 The requests will be reviewed and upon approval, a written authorization will be issued by the Superintendent or his/her designate, which will permit placement of fuel on lands administered by Parks Canada subject to the general protocols outlined in this document.

8.3 Additional terms and conditions may be applied at the discretion of the Superintendent or their designate.

9.0 Spill Prevention and Emergency Spill Response

- 9.1 The most likely time where a spill would occur is during the transferring or movement of the fuel or the fuel containers. During this period operators and personnel are to take extra precaution to ensure no spills occur.
- 9.2 Spill prevention:
- 9.2.1 One of the easiest way to prevent spills is to transfer the fuel within a secondary containment.
- 9.2.2 Ensure both containers are within a secondary containment system (though not necessary that both containers are in the same secondary containment system).
- 9.2.3 Prior to the start of the fuel transfer, ensure that the spill kit is located nearby. In addition, it may be a best practice to have it open and some absorbent pads on the ground or under the fuel containers.
- 9.2.4 Prevent overfilling or over flowing the fuel during transfer.
- 9.2.5 When moving fuel containers, ensure that all lids and caps are closed tightly and that the closing mechanism is properly seated.
- 9.3 In Event of a Spill Occurring
- 9.3.1 If the spill occurred due to a damaged drum being moved then proceed with the following steps:
- Maneuver drum so damage is on top to reduce leaking.
 - If possible, put the damaged drum inside the secondary containment.
 - Drums may be patched by using the Plug-n-Dyke provided in spill kit.
 - Mark damaged drums immediately so contents are not re-used.
 - Remove drums from site as soon as possible. The removal of damaged drums is an operational priority.
 - If the drum cannot be removed until the following season, ensure that the drum does not release any further product by keeping the damaged area is on top, the hole is plugged and that the drum is not able to take on more volume due to water/snow infiltration.
 - If none of the above is possible due to multiple holes in the drum, placing the damaged drum in an overpack or a salvage drum may be necessary.
 - Follow steps listed in section 9.3.2 for cleaning up the spill on ground.
- 9.3.2 General Steps to Spill Response
- Turn off any pump or any operating equipment nearby.
 - Move all fuel containers into a sound secondary containment system.
 - Orient the fuel containers to limit any additional spill. If possible close all openings to fuel containers.
 - Reduce as much cross contamination of fuel to any other material as quickly as possible.
 - Use booms and absorbent pad as required to soak up as much free product as possible. Booms and absorbent pads contaminated with hydrocarbon should be considered flammable and should be properly disposed in an onsite incinerator capable of handling such material or properly packaged and shipped off site for proper disposal.
 - Clean up and gather any contaminated soil. Contaminated soils are to be containerized and may be disposed off site at an approved facility or if there is a landfarm on site, then use the landfarm as the disposal facility.

- Depending on quantity of soils impacted by the spill a clean up project with soil sampling maybe required. Contact the Park Manager prior to undertaking any soil excavations greater than 50kg.
- Regardless of volume spilled, once the spill has been controlled and cleaned up, report the spill to the Park Manager as soon as possible indicating location of spill, actions taken and approximate volume of spill and volume of contaminated soils.
- The owner of the fuel cache or the responsible party may be required to sample the soils and confirm all hydrocarbon contaminated soils have been removed. Note that there are protocols to follow for excavation of soils within a National Park.
- Park Managers are to escalate the spill response reporting as required by Parks Canada mandate and Environment Canada's regulations.
- Note it is a legal requirement to report any spill over 100L in Nunavut. The 24-hour spill report line is 867-920-8130.
- See Appendix 1 for the Nunavut Initial Spill Reporting Template.

10.0 Emergency Contact Information

Parks Canada, Auyuittuq Park Manager

Office: 867-473-2505

Cell: 867-473-4070

Parks Canada, Qausuittuq Park Manager

Office: 867-975-4794

Cell: 867-979-6054

Parks Canada, Quttinirpaaq Park Manager

Office: 867-975-4975

Cell: 867-634-5152

Parks Canada, Sirmilik Park Manager

Office: 867-899-8092

Cell: 867-899-8504

Parks Canada, Ukkusiksaalik Park Manager

Office: 867-462-4090

Cell: 867-462-4059

APPROVAL PAGE

Fuel Caching Protocol for National Parks in the Nunavut Field Unit

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Appendix 1: Nunavut Spill Report Forms

INITIAL SPILL REPORT

Spill #:

Reported By:				
Call Back Phone:				
Substance Spilled:				
Quantity:				
Location:				
Cause:				
Responsible Party/Spill Source:				
Contact name:				
Address:				
Phone:				
Date and Time of Occurrence:				
Current Spill Status:				
Hazards (circle one & give brief description):				
Fire Explosion Health Environment				
Lead Agency:				
Phone:				
Contact:				
Fax:				
Authority:				
Date/Time:				
Received by:		Report Date:		Time:



Appendix 2: List of Fuel Caches Within the Nunavut Field Unit

National Park Name	Owner of the Fuel Cache	Location (include GPS location where possible and area within Park)	Quantity of Barrels	In compliance with this Protocol (y/n)	Authorized Period of Occupancy (date)