6th Edition

BC Fuel Guidelines

A Summary of Industry Standards, BC Fire Code and Federal Transportation of Dangerous Goods Regulations that pertain to petroleum hydrocarbon dispensing, storage and transportation in remote areas of BC

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BC Fuel Guidelines

Introduction

The initial idea of developing a guideline for fuel handling, storage and transportation came in 1994 following a joint inspection of remote industrial operations along the north coast of British Columbia. Operation Managers at these remote sites were upgrading fuel facilities that were technically not in need of upgrading. In the same way, double walled truck box fuel tanks became a mandatory item at some operations, when the TDG Regulation does not require secondary containment for mobile fuel tanks. Despite the upgrades at some operations, other fuel facilities were using high volume gas powered water pumps to transfer fuel including gasoline. Dispensing hoses extended down embankments, though culverts and over docks that were not ULC approved or installed to the appropriate code. Fuel tanks designed to be stationary were mobile and expired mobile tanks were being used as stationary fuel facilities. The common problem was that the codes, standards and regulations were too confusing and cumbersome to understand especially with regards to the application at remote industrial operations.

The initial Fuel Guideline was written for the BC Ministry of Environment. However, it was the BC Ministry of Forests that requested the document to be completed and published. Since then, other Ministries and Companies have adopted the Fuel Guideline. This is now the 6th Edition in 20 years and the objective has not changed. The Fuel Guideline provides guidance on acceptable industry practice for managing fuel handling, storage and transportation at remote construction and industrial operations in British Columbia. It summarizes requirements of applicable Federal and Provincial statutes, industry codes of practice and recommendations relating to environmental protection, health and safety, and fire protection.

While this document refers to legal requirements, users should always reference the current legislation for accuracy and legal interpretation. The Fuel Guideline is not a legal document however, if implemented, it will assist your operation in meeting the test of 'Due Diligence".

Transportation of Dangerous Goods (TDG)

Transport Canada has outlined and proposed numerous updates to the *Transportation of Dangerous Goods Regulation* to ensure that the requirements for the design, manufacture and selection of portable tanks for the transportation of dangerous goods meet the current and international standards. The proposed updates will likely be adopted into law in 2014.

Transport Canada is aware of the challenges that remote industrial operations face when transporting fuel. A number of proposed changes reflect these challenges, however, Transport Canada still expects operators to apply for *Equivalent Level of Safety Permits* when moving fuel in non-spec tanks, stationary tanks or tanks that are not recognized in Canada.

Fire Code (BC and National)

The Office of the Fire Commissioner expects operators at remote work sites to use "good engineering practices" when storing, dispensing and managing temporary, permanent, mobile or stationary fuel facilities. The Fuel Guideline considers "good engineering practices" to be the industry standard. The industry standard is based on the Fire Code.

Environmental Codes

There are numerous codes and best management practices incorporated into the Fuel Guideline including the Environmental Code of Practice (Part 3) for Design and Installation of Aboveground Storage Tank Systems (2013). These codes are based on good engineering practices to manage and reduce risk to the environment.

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Executive Summary of 2014 Updates

Small Means of Containment (TDG Regs)

- Truck box fuel tanks ≤450L are still exempt.
- The new TP14850 standard will replace the CGSB 43.150 standard:
  - The new TP14850 standard references construction standards for jerricans and drums.
  - There are numerous inspection and testing requirements for reusing small containers.
  - Life span of these small means of containment is 60months (5years) from the date stamp on the container.

Large Means of Containment (TDG Regs)

- Truck box fuel tanks > 450L and <3000L must be constructed to CGSB 43.146 standard:
  - Inspections required every 60 months.
- The use of ULC/ORD-C142.13 tanks will once again be allowed for diesel:
  - Most of these tanks built to pre-2003 standard have likely been replaced with CGSB 43.146 tanks.
  - Inspection remains the same, every 60 months.
- The CSA Standard B626-09 (reaffirmed 2013) Portable Tank Specification TC44:
  - Minimum capacity 3000L
  - Inspections as per CSA B620 standard
- The CSA Standard B625-13 for portable tanks will be adopted into the updated TDG Regulations;
  - Until the new TDG Regulations are adopted into law, these tanks still require an *Equivalent Level of Safety Permit* issued by Transport Canada.
  - There are no criteria outlining dispensing requirements or restrictions (available at this time).
  - Different Inspections and Testing required every 2.5 yeas and 5 years.

Stationary Tanks designed to be relocated

- S601 Utility Tanks may be designed to allow for relocation as required by their intended service:
  - Fire Code requires Operators to follow “good engineering practices”.
  - The Fuel Guidelines does not reference the Fire Code as a Legal Requirement but as an Industry Standard.
  - These tanks are not mobile fuel tanks and must be emptied prior to moving.
  - An *Equivalent Level of Safety Permit* is still required to move stationary tanks on public roads.

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SMALL STATIONARY CONTAINERS (Less than 230 liters)
Drums, Jerricans, Pails, Canisters

■ Legal Requirements
☑ Industry Standards
⊡ Information

Section 1

TYPE	CONDITION, DESIGN & MAINTENANCE	STORING AND SECURING	DISPENSING	TRANSPORT	EMERGENCY PREPAREDNESS
Drums, Jerricans, Pails, Canisters (Less than 230L)	**Condition** ■ Containers must be in good condition – not damaged, rusting, or leaking ☑ Containers must be properly sealed and capped to prevent loss of product ☑ Replace used containers on a regular basis (plastic containers every 5 years) **Construction Standard** ■ Containers must be specifically designed for the product ⊡ Containers less than 30 liters are exempt from TDG requirements & are governed by Fire Code & WHMIS regulations ■ Small containers must be designed, manufactured to the following: • CAN/CGSB 43.150 standard • TP14850 standard will replace the CGSB 43.150 standard in 2014. There is a 6month transition period - once the new proposed TDG Regulations are adopted into law. **Inspections** ☑ Regularly inspect & remove containers that are leaking or have deteriorated	**General requirements** ☑ Store all containers to prevent spillage ☑ Helicopter fuel storage is usually left to the discretion of the pilot ☑ Do not store small fuel containers in Riparian Management areas without authorization **Securing** ■ Containers must be appropriately secured to prevent shifting, swaying, damage or escape from the vehicle ■ Tie down straps must have safe combined working load ratings *greater* than the secured load ■ Containers must be secured to prevent damage to container and accidental release of product **Labeling** ■ WHMIS labeling or appropriate Product Identification is required when storing hazardous products ■ TDG safety marks (labels or placards) must be visible if containers are stored within an enclosed unit ⊡ New jerrican containers are exempt from *additional* WHMIS label requirements IF content matches the product identifier on the container.	**General requirements** ☑ Dispense all flammable and combustible substances only from drums in an upright position ☑ Do not fill containers beyond their safe filling level *(approximate safe level – 90%)* ☑ Store the hose above the pump to avoid siphoning **Administration** ■ Maintain current MSDS in a location available to workers ☑ Keep an inventory of product stored on site	**Transport** ■ Drums must be properly arranged by: • Stacking in a vertical position • Separating with dunnage • Protecting through use of sides, sideboards, or stakes on the vehicle ■ Empty drums are exempt from TDG Regs Parts 2, 3, 4 & 7 provided the following: • Drum <10% residue • Transported for filling or reconditioning • If more than 10 drums then DANGER Placard is used on all four sides of transport vehicle • Document outlining: – Primary Class – "Residue Drums" – number of drums ■ If the combined capacity of multiple containers exceeds 2000 liters, then: • A Shipping Document as per TDG Regs. is required • The Operator must have TDG training and possess a valid Certificate • The load must have placards on all visible sides ☑ Maintain containers in an upright position and follow securing requirements **Labeling** ■ Any container over 30 liters must have appropriate safety marks including: • Label or Placard, • UN Number, • Shipping Name	**Spill Control and Cleanup** ■ Take precautions to prevent spills ☑ Industry Training Standards: • Fuel Management • Spill Response • TDG ☑ *Preventative* spill control measures are required for small containers maintained in storage areas ☑ *Additional* spill control measures may be required in high risk areas for caches (see risk assessment table) ☑ Maintain a spill kit of suitable size **Fire Control and Response** ☑ Maintain one BC-rated fire extinguisher of any size for normal dispensing of fuel

SMALL MOBILE CONTAINERS
Truck Box Fuel Tanks (≤ 450 liters)

■ Legal Requirements
☑ Industry Standards
▣ Information

Section 2

TYPE	*CONDITION, DESIGN, & MAINTENANCE*	*STORING AND SECURING*	*DISPENSING*	*TRANSPORT*	*EMERGENCY PREPAREDNESS*
SMALL MOBILE CONTAINERS (450 liters or less)	**Tank Condition** ■ Must be filled and capped so that under normal conditions there will be no leakage that would endanger public safety ■ Containers must be in good condition – not damaged, rusting, or leaking **Construction Standard** ■ **Diesel:** a spec or non-spec tank may be used. Tanks used for diesel and are 450L or less are exempt from being built to a specific (spec) standard ■ **Gasoline:** a spec tank is required and must be designed and constructed to a design standard specification and must bear a visible and legible safety mark of that standard. ■ Spec tanks marked with any of the following are acceptable: • TC57 Portable Tanks as per CAN/CGSB 43.146 (2002) • UN 31A and 31B IBC Portable Tanks as per CAN/CGSB 43.146 (2002) • ULC/ORD 142.13 (with a TC *Equivalency Permit no longer required*) **Inspections** ■ Spec tanks (listed above) carrying gasoline must be inspected by a TC Registered Facility every 60 months ■ Regularly inspect & remove containers that are leaking or have deteriorated	**General requirements** ■ Use a pressure relief cap that meets manufacturers design specifications ☑ Where practicable, do not store fuel in Riparian Management areas ☑ Protect the fuel tank to prevent wear or damage ☑ Maintain a record of inventory **Securing** ■ Containers must be appropriately secured to prevent shifting, swaying, damage or escape from the vehicle ■ Tie down straps must have safe combined working load ratings *greater* than the secured load ■ Containers must be secured to prevent damage to the container and accidental release of product **Labeling** ■ WHMIS labeling or appropriate Product Identification is required when storing hazardous products ■ TDG safety marks (Labels or Placards, UN Number & Shipping Name) must be visible from outside the truck	**General requirements** ■ Use an appropriate hose and nozzle (in accordance with ULC Standards) for dispensing fuel ■ Use dispensing pumps designed for the products being handled ☑ Do not fill containers beyond their safe filling level *(approximate safe level – 90%)* ☑ Hoses and nozzles must be maintained and not leak ☑ Operators must stay with the nozzle at all times while dispensing fuel ☑ Nozzles must be secured to prevent leaks and spills ☑ Do not dispense fuel within a Riparian Management area without authorization **Precautions** ■ Make sure there is suitable bonding between tank and truck box to prevent static charges (specifically for gasoline) ■ Maintain current MSDS in a location available to workers	**Transport** ■ If multiple tanks are carried on the vehicle and the combined capacity exceeds 2000 liters, then: • A shipping document must be completed for the goods hauled • The operator must have TDG training & possess a valid certificate • The load must be placarded on all sides **Labeling** ■ Any container over 30 liters must have appropriate safety marks including: • Label or placard, • UN number, • Shipping name ■ Spec plates must identify the following: • Container Type & Standard • Manufacturer & Date • Re-certification Date & TC Registered Facility	**Spill Control and Collision Protection** ■ Take precautions to prevent spills ☑ Training Requirements: • Spill Response • TDG • Fuel Management ☑ If a mobile tank is removed from the vehicle and placed on the ground, then additional Spill Control and Preventative Measures are required. ☑ Maintain a spill kit of suitable size ☑ Assess and manage the RISK **Fire Control and Response** ☑ Maintain one BC-rated fire extinguisher of a suitable size for normal dispensing of fuel

INTERMEDIATE BULK CONTAINERS
Truck Box Fuel Tanks (>450 liters to ≤3000 liters)

■ Legal Requirements
☑ Industry Standards
▣ Information

Section 3

TYPE	*CONDITION, DESIGN, & MAINTENANCE*	*STORING AND SECURING*	*DISPENSING*	*TRANSPORT*	*EMERGENCY PREPAREDNESS*
INTERMEDIATE BULK CONTAINERS (Greater than 450 liters to <3000L)	**Condition** ■ Must be filled and capped so that under normal conditions there will be no leakage that would endanger public safety ■ Containers must be in good condition – not damaged or leaking. **Construction Standard** ■ **All Tanks:** must be designed, constructed and/or tested to a design standard specification with visible specification ■ **Spec Tanks:** used for diesel and gas and may have any of the following markings: • UN 31A and 31B IBC Portable Tanks as per CAN/CGSB 43.146 (2002) • TC57 Portable Tanks as per CAN/CGSB 43.146 (2002) • ULC/ORD 142.13 (new: *no longer requires* a TC *Equivalency Permit*) ■ **Non-Spec Tanks:** used to transport diesel may no longer be used and must be removed from operation. **Inspections** ■ Non-spec diesel tanks (if used) require annual testing by a Transport Canada (TC) Registered Facility ■ All Spec tanks (listed above) must be inspected every 60 months (5 years) by a TC Registered Facility ☑ Regularly inspect & remove containers that are leaking or have deteriorated	**General requirements** ■ Use a pressure relief cap that meets manufacturers design specifications ☑ Do not leave vehicles carrying auxiliary fuel unattended in Riparian Management without authorization ☑ Place appropriate protection under the tank to prevent wear or damage to the tank **Securing** ■ Containers must be appropriately secured to prevent shifting, swaying, damage or escape from the vehicle ■ Containers must be secured to prevent damage to the container and accidental release of product ■ Tie down straps must have safe combined working load ratings *greater* than the secured load **Labeling** ■ WHMIS labeling or appropriate Product Identification is required when storing hazardous products ■ TDG safety marks (labels or placards, UN number, shipping name) must be visible on the tank or any enclosed storage unit	**General requirements** ■ Use an appropriate hose and nozzle (in accordance with ULC standards) for dispensing fuel ■ Use dispensing pumps designed for the products being handled ☑ Do not fill containers beyond their safe filling level *(approximate safe level – 90%)* ☑ Hoses and nozzles must be maintained and not leak ☑ Operators must stay with the nozzle at all times while dispensing fuel ☑ Nozzles must be secured to prevent leaks and spills ☑ Do not dispense fuel within a Riparian Management areas without authorization **Safety** ■ Make sure there is suitable bonding between tank and truck box to prevent static charges (only refers to gasoline) ■ Maintain current MSDS in a location available to workers	**Transport** ■ If multiple tanks are carried on the vehicle and the combined capacity exceeds 2000 liters, the following conditions apply: • A shipping document must be completed for the goods hauled • The operator must have a TDG training and possess a certificate • The load must be placarded on all visible sides **Labeling & Spec Plates** ■ Any container over 30 liters must have appropriate safety marks (label or placard, UN number, shipping name) ■ Spec plates must identify the following: • Container Type & Standard • Manufacturer & Date • Re-certification Date & TC Registered Facility	**Spill Control and Collision Protection** ☑ Take precautions to prevent spills ☑ Training Requirements: • Spill Response • TDG • Fuel Management ☑ *Preventative* spill control measures are required for all containers maintained in storage areas (see *Glossary* for definition) ☑ *Additional* spill control measures may be required in high risk areas (see risk assessment table) ☑ If tanks contain diesel or gasoline and are removed from the vehicle and placed on the ground, then additional spill control and preventative measures are required. ☑ Maintain a spill kit of suitable size ☑ Assess and Manage the RISK **Fire Control and Response** ☑ Maintain one 80-BC rated fire extinguisher for normal dispensing of fuel

LARGE PORTABLE TANKS
Fuel Trucks, Trailers & Portable Tanks (Volume > 3000 liters)

■ Legal Requirements
☑ Industry Standards
▣ Information

Section 4

TYPE	CONDITION, DESIGN & MAINTENANCE	STORING AND SECURING	DISPENSING	TRANSPORT	EMERGENCY PREPAREDNESS
LARGE PORTABLE TANKS (Greater than 3000 L)	**Tank Condition** ■ Must be filled and capped so that under normal conditions there will be no leakage that would endanger public safety ■ Containers must be in good condition – not damaged, rusting, or leaking **Construction Standard** ■ **All Tanks:** must be designed, constructed and/or tested to a design standard specification and must bear a visible and legible specification plate to that standard ■ TC44 Portable Tanks as per CSA B626-09 (re-2013) must be >3000L ■ UN Standardized Portable Tanks as per CSA B625-13 Standard (new) and still require *Equivalency Permit* ■ Fuel trucks must meet the following standard requirement: ○ CSA B620-03 Highway and Portable Tanks for TDG ○ Spec tank built after 2003 may transport **Diesel or Gasoline** ○ Inspected as per Table 7.1 of CSA B620-03 by a TC registered facility ▣ As of January 1, 2010 Non-Spec Tanks are no longer permitted. **Inspections – spec or non-spec tanks used to transport diesel fuel** ■ Inspect and document regular inspections as per B620 standard ■ Non-spec tanks require *Equivalent Level of Safety Permit* & Inspections as per *Permit*	**General requirements** ☑ Do not leave vehicles/ trailers carrying auxiliary fuel unattended in Riparian Management areas without authorized ☑ Fuel trucks will be located more than 6 meters from a building ☑ Fuel trucks will not be unduly exposed to accident or collision **Securing** ■ Fuel truck tanks must be integrally mounted to the unit **Labeling** ■ WHMIS labeling or appropriate Product Identification is required when storing hazardous products ▣ Product identification is an acceptable substitute for supplier or workplace labels and may be affixed to the sides of the tank compartments and piping	**General requirements** ■ Use an appropriate hose and nozzle (in accordance with ULC standards) for dispensing fuel ■ Use dispensing pumps designed for the products being handled ☑ Do not fill containers beyond their safe filling level *(approximate safe level – 90%)* ☑ Hoses and nozzles must be maintained and not leak ☑ Operators must stay with the nozzle at all times while dispensing fuel ☑ Store nozzle & hose in a safe manner to prevent damage and leaks (i.e. on a retractor, hose reel or coiled) ☑ Dispensing **gasoline** fuel directly from a fuel truck into the equipment is **NOT** permitted ☑ Do not dispense fuel within Riparian Management areas without authorization **Safety** ■ Ensure suitable bonding between fuel truck and stationary dispensing units to prevent static charges ■ Maintain current MSDS in a location available to workers	**Transport** ■ Fuel trucks and trailers used to transport products on public roads must meet Motor Vehicle requirements (i.e. GVW, brakes, lights, axles, etc) and TDG requirements (Placards & Documentation) ■ **TDG Tanks** with capacities exceeding 2000 liters, the following conditions apply: • A shipping document must be completed for the goods hauled or residue last contained • The operator must have a TDG training and possess a certificate • The load must be placarded on all four sides ■ *Equivalent Level of Safety Permit* is required to transport fuel trucks and trailers with empty non-spec tanks **Labeling** ■ Required Placards – on all four sides (TDG) ■ Product identification (WHMIS) & visible placards	**Spill Control and Collision Protection** ☑ Take precautions to prevent spills ☑ Training Requirements: • Spill Response • TDG • Fuel Management ☑ *Preventative* spill control measures are required for all containers maintained in storage areas (see *Glossary* for definition) ☑ *Additional* spill control measures may be required in high risk areas (see risk assessment table) ☑ Assess and Manage the RISK ☑ Maintain a spill kit of suitable size to contain fuel spills **Fire Control and Response** ☑ Maintain two 80-BC fire extinguishers with large portable tanks

LARGE STATIONARY CONTAINERS
Skid-Type Tanks Generally Greater than (>) 3000 liters

■ Legal Requirements
☑ Industry Standards
⊡ Information

Section 5

TYPE	CONDITION, DESIGN & MAINTENANCE	STORING AND SECURING	DISPENSING	TRANSPORT	EMERGENCY PREPAREDNESS
LARGE STATIONARY TANKS Generally Greater than (>) 3000L	**Tank Condition & Set-up** ☑ Stationary tanks are not designed as a mobile tank and therefore required to be emptied prior to moving ☑ Follow the BC Fire Code as a *guide* for fire and environmental safety as this is the Industry Standard that would most likely meet "good engineering practices" ☑ Must be filled and capped so that under normal conditions there will be no leakage that would endanger public safety ■ Containers must be in good condition – not damaged, rusting, or leaking **Construction Standard** ■ **All Tanks:** must be designed, constructed and/or tested to a design standard specification and must bear a visible and legible specification plate to that standard ■ CAN/ULC-S601 Utility Tanks are stationary tanks designed to be relocated. ■ All tanks & secondary containment must be constructed and maintained to conform to a ULC specification for stationary aboveground tanks (AST). ■ **Spec Tanks:** used for diesel or gas and will generally have one of the following markings: • ULC-S601 Utility Tanks • ULC-S602 AST Steel Tanks • ULC-S630 AST Vertical Tanks • ULC-S653 AST Steel Tanks • See Fire Code for full listing ⊡ As of January 1, 2010, Non-Spec Tanks are no longer permitted.	**General Requirements** ■ All tanks must have secondary 110% containment ■ Use a pressure relief cap that meets manufacturers design specifications ■ Store nozzle & hose in a safe manner to prevent damage and leaks (i.e. on a retractor, hose reel or coiled) ☑ Do not leave skid tank with fuel unattended in Riparian Management areas unless authorized ☑ Close and lock valves when the dispensing station will be left unattended for extended periods of time **Securing** ■ Tanks must be appropriately secured to prevent shifting, swaying, damage or escape ■ Tanks must be mounted to a fire-resistant cradle on the skid **Labeling** ■ WHMIS labeling or appropriate Product Identification is required when storing hazardous products ■ TDG safety marks (placards) must be visible on all four sides of the container when moving the skid tank	**General Requirements** ■ Use dispensing pumps designed for the products being handled ☑ Do not fill containers beyond their safe filling level *(approximate safe level – 90%)* ☑ Use an appropriate hose and nozzle (in accordance with ULC standards) for dispensing fuel ☑ Hoses and nozzles must be maintained and not leak ☑ Operators must stay with the nozzle at all times while dispensing fuel ☑ Nozzles must be secured to prevent leaks and spills ☑ Do not dispense fuel within a Riparian Management areas without authorization **Safety** ■ Make sure there is suitable bonding between tank and equipment to prevent static charges where applicable ■ Maintain current MSDS in a location available to workers	**General Requirements** ☑ All skid tanks must be moved empty (5% or less) **TDG Transport** ■ All skid tanks (with or without fuel) having a total capacity greater than 2000 liters must follow TDG Regulations when moving the skid tank • A shipping document must be completed for the fuel or residue • The hauler must have a TDG training and possess a certificate • The skid tank must be placarded on all four sides ■ All Skid-type tanks are considered stationary tanks (i.e. non-mobile tanks) and must: • Be emptied (5% or less) prior to moving • Require an *Equivalent Level of Safety Permit* for transporting	**Spill Control and Collision Protection** ■ Take precautions to prevent spills ☑ Training Requirements: • Spill Response • TDG • Fuel Management ☑ *Preventative* spill control measures are required for large tanks ☑ Assess and Manage the RISK ☑ When tanks are utilized in a fixed location for fuel dispensing, the following requirements apply: • Collision protection will be provided • *Additional* Spill control measures are required for high risk areas (i.e. anti-siphon, overflow alarms, spill box & shear valves) • Breakaway valves will be installed in the fuel hose when dispensing ☑ Maintain a spill kit of suitable size **Fire Control and Response** ☑ "No Smoking" signs must be in place where flammable products are dispensed (i.e. gasoline) ☑ Maintain two 80-BC rated fire extinguisher for normal dispensing of fuel

FUEL FACILITIES
Remote Construction/ Industrial Operations

■ Legal Requirements
☑ Industry Standards
⊡ Information

Section 6

TYPE	CONDITION, DESIGN, & MAINTENANCE	STORING AND SECURING	DISPENSING	TRANSPORT	EMERGENCY PREPAREDNESS
FUEL FACILITIES Remote Construction/ Industrial Operations	**General** ☑ Prior to installing a permanent aboveground fuel storage and dispensing facility: • Conduct a Risk Assessment • Follow the BC Fire Code as a *guide* for fire and environmental safety as this is the Industry Standard that would most likely meet "good engineering practices" ☑ Follow 2013 Environmental Code of Practice for AST **Construction Standard** ☑ All permanent aboveground storage tanks must be constructed in accordance with good engineering practice as outlined under ULC & CGSB Standards **Tank Condition** ☑ All tanks must be filled and capped so that under normal conditions there will be no leakage that would endanger public & worker safety ☑ Containers must be in good condition – not damaged, rusting, or leaking **Inspections** ☑ Daily inspections are required of all permanent aboveground storage tanks and its associated piping, pumps and hoses ☑ Maintain a record of inspection	**Storage** ☑ All permanent aboveground fuel storage tanks must be stored within a secondary containment ☑ Measures will be taken to ensure that the secondary containment does not fill with precipitation. Any accumulated precipitation within the secondary containment must not be contaminated from the fuel storage either by leaks, drips or spills ☑ Storage tanks will not be located closer than 4.5 meters horizontally from the normal high-water mark ☑ An expansion chamber is recommended for storage tanks with exposed piping ☑ Do not fill containers beyond their safe filling level *(approximate safe level – 90%)* **Securing** ☑ Permanent aboveground fuel storage tanks will be securely mounted in a cradle on a fire-resistant foundation ☑ Close and lock valves when the dispensing station will be left unattended for extended periods of time **Labeling** ■ WHMIS labels (supplier or workplace) are required on all storage tanks ⊡ Product identification is an acceptable substitute for supplier or workplace labels and may be affixed to the sides of the tank compartments and piping	**General requirements** ■ Dispensing pumps must be designed for the products being handled ☑ Solid piping coupled with short suitable lengths of flexible hose must be used between on-shore storage tanks and floating dispensing units ☑ Hoses must be stored off the ground when not in use (i.e. retractor, hose reel, hook system or equivalent) ☑ Manual or auto shut-off nozzles must be used when dispensing fuel ☑ Electrically operated solenoid valves (open only during dispensing) and anti-siphon valves are recommended ☑ Hoses and nozzles must be maintained in good repair and not leak ☑ Operators must stay with the nozzle <u>at all times</u> while dispensing fuel to avoid overfilling ☑ Nozzles must be secured to prevent leaks and spills **Safety** ■ Ensure suitable bonding between tank and equipment to prevent static charges ■ Maintain current MSDS in a location available to workers ■ Smoking is not permitted during dispensing operations	**General** ■ These aboveground storage tanks are not transported	**Spill Control and Collision Protection** ■ Take precautions to prevent spills ☑ Training Requirements: • Spill Response • Fuel Management ☑ *Preventative* spill control measures are required for large tanks ☑ Assess and Manage the RISK ☑ When tanks are utilized in a fixed location for fuel dispensing, the following requirements apply: • Collision protection will be provided • *Additional* Spill control measures are required for high risk areas (i.e. anti-siphon, overflow alarms, spill box & shear valves) • Breakaway valves will be installed in the dispensing fuel hose ☑ Maintain a spill kit of suitable size **Fire Control and Response** ■ "No Smoking" signs must be in place where flammable products are dispensed (i.e. gasoline) ☑ Maintain two 80-BC fire extinguishers ☑ Post fueling and response procedures at all storage & dispensing facilities

RISK ASSESSMENT PROCEDURE

For Land Based Fuel Storage Facilities or Caches

Risk Identification	**HIGH**	**MEDIUM**	**LOW**	**Assigned Numerical Value**
Numerical Value	**3**	**2**	**1**	
Environmental Factors				
Distance to nearest watercourse or water body	< 50m	50m-100m	> 100m	
Soil characteristics at or around the *Fuel Facility*	Porous or unknown	Semi-porous	Non-porous (i.e. clay/bedrock)	
Terrain slope at or around the *Fuel Facility*	> 6% slope	2%-6% slope	< 2% slope	
Operational Factors				
Site designation or description	High traffic access road (Main Line)	Low traffic access road (Side Spur)	No through traffic or access	
Duration of operation of the *Fuel Facility*	> 6 days	2-6 days	< 2 days	
Volume of fuel stored at the *Fuel Facility*	>4500L	500L-4500L	< 500L	
Number of times the *Fuel Facility* is accessed	> 12x per day	6-12x per day	< 6x per day	
Amount of traffic around the *Fuel Facility*	> 15 personnel on site	5-15 personnel on site	< 5 personnel on site	
Prevention & Preparedness Factors				
Distance to additional spill response cache or equipment	> 60 minutes	15-60 minutes	< 15 minutes	
Additional *Spill Control measures*	Tank with no *secondary containment*	Tank with *secondary containment*	Tank with secondary containment and additional spill controls (i.e. berms, sloped to a sump)	
Last known Spill Response Training	More than 2 years	Between 1-2 years	Within the last year	
Risk Value			**Add the Assigned Numerical Values:**	

CONTROL MEASURE RECOMMENDATIONS

Numerical Value	**Risk Ranking**	**Control Measures**
< 12	Low Risk	No additional measures are considered necessary
12-23	Medium Risk	1. Additional control measures should be considered to reduce the risk 2. Document facility inspections
> 23	High Risk	1. Additional controls are required 2. Consider moving the fuel facility 3. Document facility inspections

SPILL KITS & TRAINING

RISK:

* All spill response kits should reflect the potential risks – see *Risk Assessment Procedures*

TRAINING:

* Anyone responding to a spill must have had Spill Response Training and carry a valid certificate

EQUIPMENT INVENTORY & ACCESS:

* Each spill kit should reflect the risk and the potential response. *Therefore, no spill kit will be the exact same.*
* Access to the spill kits will be based on potential risk. Therefore some spill response equipment may be on-site, however some equipment may be in a remote or central location (i.e. Spill Equipment Cache).

SPILL KIT – *Example of Equipment List for ≤ 1000L Diesel Storage for Land-based Operation*

- SPILL PLAN or Emergency Response Procedures must be with each kit or within easy access to the spill kit
- CONTAINMENT:
  - Tarp Containment:
    - Large tarp for containment
    - 2x4 lumber or equivalent to use as a cross-beam
  - Culvert Block Containment:
    - Plywood or equivalent for blocking a culvert
    - Small tarp for sealing culvert block
  - Underflow Containment:
    - Sandbags for diversion or containment dam
    - PVC Pipes for underflow construction
    - MegaSecure® Dam
  - Patch & Plug
    - Bentonite clay material or equivalent
    - Wooden dowels & wedges
- MOP-UP & TREATMENT
  - Absorbent pads or equivalent material (i.e. peat moss) appropriate for the type and volume of spilled product,
  - Appropriate number of absorbent booms for skimming and absorption
  - Drum liner bags or plastic pails
  - Bioremediation product to treat contaminated soil
  - Shovels, rakes or appropriate hand tools
- SAFETY
  - Fire extinguisher (BC type)
  - Gas meter (or vapor monitor) where appropriate
  - Traffic Control where appropriate
- PPE (personal protective safety gear)
  - Rubber boots
  - Rubber, Nitrile or equivalent protective gloves
  - Hard Hat
  - Rain gear or chemical splash protection
  - Eye Protection