

Landfill Operations Plan: Example

This is an example of a landfill operations plan for a small landfill and may not be suitable for larger urban or regional landfills. For more information on landfill operations plans, please see the [Landfill Operations Plan Guidance Document](#) or call the ministry's Inquiry Centre at 1-800-567-4224 to speak to an environmental protection officer.

Landfill operators are to use this for informational purposes only and as a guide. This example operations plan is not all-encompassing and there may be site specific operations that are not included.

DISCLAIMER: This is for information purposes only.

RM of Riderville
Waste Disposal Grounds
Operations Plan

Document Control

Revision	Date	Changes

1. Introduction

The Operations Plan provides operating procedures for the Waste Disposal Ground (Site) for the RM of Riderville (RM) located at NE ¼ 23-42-11 W3M in Saskatchewan. The Site is owned and operated by the RM and serves surrounding communities and is permitted by the Ministry of Environment under Permit to Operate PO20-123.

In accordance with section 7.6 of PO20-123, the Operations Plan will be reviewed by the RM annually and updated to reflect any operational changes at the Site. Any significant changes to the Operations Plan including changes to operations, monitoring, or reporting will be submitted to the Ministry of Environment for approval.

1.1 Hours of Operation

The Site is open Monday to Saturday and closed on all statutory holidays. The Site is supervised during operating hours. The Site is locked when unsupervised. The hours of operation are:

Monday – Friday: 9 am to 5 pm

Saturday: 8 am to 4 pm

In the event of inclement weather, the Site may close under the discretion of the Landfill Foreman.

1.2 Signage

In accordance with PO20-123 section 4.3, the Site has signage at the entrance that indicates the waste disposal ground name, owner, hours of operation and emergency contact numbers. There is signage that includes tipping rates, unauthorized materials and site rules. The areas for metals, clean wood, etc. are all signed so that customers know where to drop off materials. Additional signage will be included if necessary.

1.3 Emergency Response

Emergency situations that arise at the Site, including, fires and unauthorized discharges, will follow the *RM of Riderville Emergency Response Plan*.

Any changes made to the Emergency Response Plan will be submitted to the Ministry of Environment for approval.

1.4 Salvage and Use

Materials brought to the site that are of an accepted waste type are forfeited to the RM upon entry to the grounds. Individuals are not permitted to scavenge or loot any items within the site.

A reuse pile is provided at the entry gate for lightly used items individuals believe are of use to another household. Items placed within this area are available to the first individual to claim the item. Any items deemed to be unsafe for reuse are removed and disposed of in the landfill cell.

2. Site Layout

2.1 Gate House

The Gate House is located at the entrance where the Gate Attendant is located. The Gate Attendant monitors all traffic, screens loads, and directs customers to the appropriate area of the Site to dispose of waste. All inspection records, pertinent documents, operations plan, emergency response plan, and a copy of PO20-123 are kept in the Gate House.

Safety equipment including the fire extinguisher, first aid kit, and Automated External Defibrillator (AED) are located inside the Gate House.

2.2 Landfill Cell

The current active cell at Site is Cell 1, which was constructed in 2020 and is located in the center of the Site. Cell 1 is lined and includes a leachate collection system. The cell accepts non-hazardous municipal solid waste and Construction & Demolition waste.

2.3 Leachate Pond

The Site includes a leachate collection pond, which is designed to collect and store leachate that accumulates from Cell 1. The leachate pond includes visual indicators on the liner to trigger when disposal by a third party is required to ensure a proper freeboard of 0.5 m is maintained. Once leachate reaches the first indicator line, a Site employee will contact a third party to remove and dispose of the leachate at an approved facility. In accordance with section 3.13 of PO20-123, leachate is analyzed as per Appendix B and compared to applicable Saskatchewan Environmental Quality Guidelines prior to disposal.

2.4 Surface Water Pond

The Site is graded to reduce surface water run-off contacting the active cell to minimize leachate accumulation. Run-off is diverted to the on-site surface water pond. Grading and berms are utilized to reduce run-off from contacting the active cell and to reduce pooling on-site. The surface water pond includes visual indicators on the liner to trigger when removal is required to ensure a proper freeboard of 0.5 m is maintained. Prior to removal, the surface pond water is analyzed in accordance to section 3.13 of PO20-123 and results are compared to applicable Saskatchewan Environmental Quality Guidelines.

2.5 Temporary Material Stockpiles

The Site includes stockpiles for asphalt, concrete, metals, appliances, and a clean wood burn pile. The Site also has bins for recycling, which are removed by a third party contractor. The areas are signed so that customers know where to place materials.

2.6 EcoCentre

An EcoCentre building is located on-site for the disposal of used oil, antifreeze and oil filters. The EcoCentre operates in accordance with the Approval to Store Hazardous Substances and/or Waste Dangerous Goods at a Storage Facility in Appendix C of PO20-123. A third party contractor removes the products from the Site when required. Maintenance and housekeeping are conducted on an as needed basis. A spill kit and fire extinguisher are located outside of the EcoCentre building. The EcoCentre is designed with a catchment basin in the bottom of the building to act as a secondary containment in case of spills. The basin is pumped out as levels approach the grating and fluids are disposed of at an approved facility. See Section 4.3 for inspection requirements and Section 4.4 for the record management process.

The EcoCentre is labelled and has appropriate placards to meet Workplace Hazardous Material Information System (WHMIS) and Transportation of Dangerous Goods (TDG) requirements.

If accepted materials or building alterations occur to the EcoCentre the RM will contact the Ministry of Environment to confirm if regulatory approvals are required.

2.7 Storage of Hazardous Substances and/or Waste Dangerous Goods

The RM maintains gasoline and diesel tanks at the landfill to fuel landfill equipment. The diesel tank is a 4530 litre, double walled steel tank manufactured in 2008. The gasoline tank is a 500 litre double walled steel tank manufactured in 2008. Landfill staff monitor the fuel level of the tanks twice a week and record it on the inspection sheets. A drip tray is located under the fill nozzle of the tank to collect any drips while filling. The tanks are inspected for any leaks or spills.

The tanks are permitted through Appendix C of PO20-123 and are labelled with appropriate placards to meet WHMIS and TDG requirements.

3. Waste Acceptance

When a vehicle approaches the Gate House, the attendant will screen the load. This includes recording waste type, estimated volume, origin of waste, hauler name, date and time on the Daily Waste Log. If the load is accepted, the vehicle will then be directed to the appropriate location to dispose of the waste load.

If the load contains prohibited waste and is not accepted, the attendant will include the information on the Daily Waste Log. A copy of the Daily Waste Log is included in Appendix A.

3.1 Accepted Waste

Accepted wastes include:

- Municipal Solid Waste
- Construction & Demolition Waste (shingles, treated wood, dry wall, etc.)
- Scrap Metals
- White Goods (including halocarbon containing appliances)
- Recyclable materials
- Clean wood materials
- Concrete
- Asphalt
- Compost
- Grain Bag Recycling
- Contaminated Soils (as approved in Section 3.7 of the permit to operate)

3.1.1 Scrap Metals

The scrap metals pile includes any metal materials that can be recycled. The pile is removed twice a year by a third party contractor. Any metal product that may contain fuel (i.e. lawn mower) will be checked to ensure fuel has been removed and stored upright in a segregated pile to ensure any residual fluids do not spill. Dates of removal are recorded in the Operations log provided in Appendix A.

3.1.2 White Goods

Appliances which contain halocarbon substances (i.e. refrigerator) will be segregated from the scrap metal pile and stored in an upright position. A certified technician will remove the halocarbon material prior to the appliances being removed from site.

3.1.3 Clean Wood Pile

The clean wood pile accepts clean wood only in accordance to section 3.6 of PO20-123. This includes trees, brush and untreated wood with all hardware removed. Treated, painted, stained or composite wood products are not included. Elm wood is not accepted in the clean wood pile and is disposed of according to the permit. Burn activities will be conducted in accordance with the Government of Saskatchewan's [*Best Practices for Open Burning*](#). The pile is burned annually when meteorological conditions are favourable. Prior to burning the pile is inspected and any unauthorized material is removed. Date the pile is burned is documented and records kept as detailed in Section 4.4 of the Operations Plan.

The RM of Riderville Landfill is located within 4.5 km of a provincial forest and therefore will obtain a Burn Notification Number for any burning activities scheduled between April 1st to October 31st. The RM will contact the local forest protection office to obtain the burn notification number. After the burn number has been obtained, the RM will call the Emergency Management and Fire Safety's Control Burn Number 1-866-404-4911 to let them know of the burn plan. The local fire department will be notified prior to the burn.

The clean wood burn inspection form, available in appendix A, is completed before burning activities occur and fire supervision logs are kept while the pile is burning.

3.1.4 Recyclable Materials

Recyclable materials (paper, plastic, cardboard, glass) are contained within leased roll off bins. The bins are separated and clearly marked to ensure contents are not mixed. The recyclable materials are removed from site by a third party contractor. The Landfill Foreman is responsible for contacting the contractor when bins need to be replaced. Dates of removal are recorded in the Operations log provided in Appendix A.

3.1.5 Concrete

Concrete is stockpiled on-site and is utilized by the RM for the lagoon and various other projects. Concrete is only accepted when it is clean of any material such as insulation and has minimal rebar.

3.1.6 Asphalt

Asphalt is stockpiled on-site. The area where the asphalt is stored was built up to ensure that no water pools around the asphalt. The surrounding area is also sloped to ensure any run-off goes to the on-site surface water pond. The asphalt is used by the RM for roadwork projects. The pile is managed so it does not become too large. If not enough asphalt is being removed from the pile, the landfill may temporarily cease to accept more until the pile is reduced.

3.1.7 Compost

Yard waste is accepted within the compost pile at the disposal ground. Yard waste include grass clippings, leaves, and garden waste. Compost material brought in is screened and any unauthorized material is removed. The estimated yearly compost material accepted is 1500 kilograms per year. The compost pile will be tested to verify if it meets the quality criteria as defined in the Canadian Council of Minister of the Environment (CCME) Guidelines for Compost Quality. Material that does not meet the testing criteria will be used as alternative daily cover.

The compost material is turned every one to two weeks between May and October with landfill owned equipment. The final product is stored in windrows in a designated area on-site. Water produced during the composting process is kept on site. The compost material will be kept in a dry area where water cannot pool around it.

Compost is available for \$30 per truck load to any individual requesting the material. The volume of material sold or used on-site will be recorded as detailed in section 4.7 of PO20-123. All analytical results will be maintained as detailed in section 4.4 of the Operations Plan.

3.1.8 Grain Bag Recycling

The RM is a collection site for grain bags, which is a free service for farmers in the area. The bags are removed as requested by the RM by Cleanfarms for recycling. Dates of removal are recorded in the Operations log provided in Appendix A. Bags shall be inspected prior to drop off to ensure cleanliness. The storage area is maintained to ensure it is free of standing water. Frequent inspections occur to monitor for signs of pests in the area. If pests become a nuisance in the pile, a pest control technician will be notified. Twine, netwrap and bale wrap are not part of the collection program and are not accepted.

3.1.9 Contaminated Soils

In accordance with section 3.10 and 3.11 of PO20-123, the RM accepts up to 20% of contaminated soils that do not exceed Saskatchewan Environmental Quality Guidelines (SEQG) for soils at landfills. The contaminated soils that meet guidelines may be used for daily or intermediate cover. Analytical is required prior to accepting the soil to ensure it meets the SEQG. The amount accepted is recorded and maintained as per section 4.7 of PO20-123.

3.2 Prohibited Waste

- Bio-medical waste
- Radioactive waste
- Hazardous substances
- Liquid waste
- Animal carcasses
- Asbestos
- Paint
- Tires
- Automotive or recreational vehicles
- Hot Loads

The gate attendant will prevent prohibited waste from entering the site by screening the loads. The gate attendant will follow the process outlined within the Emergency Response Plan if prohibited materials are identified.

4. Operations

4.1 Litter Control

Litter fencing is used at the working face to reduce windblown litter. While the litter fences minimize windblown litter, blown litter still may accumulate throughout the site. Any windblown litter on-site is picked up weekly. Litter is picked up along the access road and ditches at a minimum of once a month. Litter collection dates are recorded in the inspection record logs.

4.2 Pest Control

Proper cover and compaction of the active working face, removal of windblown litter and ensuring proper placement of wastes reduces birds, vermin and other pests on-site. In the event pests become a nuisance at the Site, the RM will engage a pest control professional.

4.3 Inspections

Inspections are conducted in accordance with Appendix A of PO20-123. Inspection findings will be recorded and any corrective actions will be documented. Inspection records are maintained as detailed within Section 4.4 of the Operations Plan and stored in the gatehouse.

Daily Inspections include:

- Inspecting leachate/surface water containment ponds
 - Liner integrity, free board measurement, windblown litter, breach of containment, spills into the containment pond, repairs or maintenance
- Identifying any ponded/standing water on-site
- Inspecting the Site for evidence of an unauthorized discharge
- Inspecting the EcoCentre and diesel tank for evidence of spills, leaks, or unauthorized material
- Inspecting the grain bag storage area for signs of pest infestations

Weekly Inspections include:

- Inspecting fencing and repairing any holes, breaks or other damage to the fence
- Retrieving any debris that has left the confines of the waste disposal ground and associated debris fencing
- Inspect temporary stockpiles for appropriate segregation and unauthorized material
- Ensure halocarbon containing appliances or metals with fuel sources have been stored appropriately (i.e. segregated and upright)
- Record diesel and gasoline tank volumes using the provided dip stick. Compare recorded volumes and any records of product removed that week and reconcile to ensure no product losses are occurring.

Monthly Inspections include:

- Inspecting all access roads and recording evidence of illegal dumping outside the facility
- Identifying and blockading any alternate roadways that may access the facility by bypassing the locked gate
- Checking records and ensuring reporting requirements are being met
- Inspecting monitoring wells for security and integrity
- Vegetation and weed control

Clean Wood Burn Inspection include:

- Inspect clean wood pile for unauthorized materials, such as:
 - treated wood (including plywood)

- painted wood
- household garbage
- prohibited wastes
- Remove any materials that are not authorized for burning
- Ensure there is an appropriate buffer from other waste piles and potential ignition sources

4.4 Record Keeping

Records are maintained in accordance with section 4.7 of PO20-123. All inspection records are stored in the Gate House and maintained for the life of the facility. All records will be made available to the Ministry of Environment upon request.

4.5 Annual Report

An Annual Report will be submitted to the Ministry of Environment no later than April 1 each year. The Annual Report will include information from the inspections records, records of volume of waste collected and recycled, remaining years of the current waste cell, dates of clean wood burns, date of annual review of Operations Plan and Emergency Response Plan, any spills or incidents that occurred, information pertaining to monitoring events and any additional requirements from 4.10 of PO20-123.

4.6 Monitoring

Groundwater and surface water monitoring will be conducted in accordance to section 4.8 and Appendix B of PO20-123. On-site groundwater wells and the surface water pond will be sampled in the spring and fall by an environmental consulting firm. The consultant will complete a report including data interpretation, results trend analysis and provide recommendations based on the results. A copy of the report will be submitted annually with the Annual Report to the Ministry of Environment.

If monitoring data shows increasing exceedances or abnormalities, a plan to reduce landfill impacts or modify the monitoring program will be made in consultation with a Qualified Person and the Ministry of Environment.

4.7 Cover and Compaction

Cover and compaction of wastes shall occur no less than three times per week as per section 3.2 of PO20-123. Material used for cover includes clay from the on-site borrow pit and contaminated soils that meet the Saskatchewan Environmental Quality Guidelines for soils at landfills. Cover material is brought to the active cell as required. Date of cover and compaction is recorded and documents maintained as detailed in Section 4.4 of the Operations Plan and summarized in the operations log.

Intermediate cover is used on areas of the cell that are temporarily inactive or are awaiting closure. A minimum of 300 mm of soil will be used for intermediate cover. Material used for cover includes clay from the on-site borrow pit and contaminated soils that meet the Saskatchewan Environmental Quality Guidelines for soils at landfills.

5. Site Closure

Newly constructed Cell 1 was designed with an estimated capacity of 25 years. Prior to the cell nearing maximum capacity, a plan will be established for the construction of a new cell, with approval from the Ministry of Environment. All Decommissioning and Reclamation steps are outlined in the *RM of Riderville Decommissioning & Reclamation Plan* and will be updated as required.

Appendix A
RM of Riderville Landfill Logs

Daily Inspection Log
RM of Riderville Landfill Inspection

Date: _____

Inspection Conducted By: _____

Inspection Item	Area Inspected	Observation	Action Taken	Date Action Completed
Liner Integrity	Landfill Cell			
	Leachate Pond			
Freeboard measurement	Leachate Pond			
	Surface Water Pond			
Breach of Containment	Leachate Pond			
	Surface Water Pond			
Unauthorized Discharge into Pond	Leachate Pond			
	Surface Water Pond			
Unauthorized Discharge or Spills	Landfill Cell			
	EcoCentre			
Ponded/Standing Water	All areas			
Pest Control	Grain Bag Storage			
Unauthorized materials in stockpiles/working face	All areas			

Fuel Usage Tracking

	Diesel Tank	Gasoline Tank
Volume Removed		

Weekly Inspection Log
RM of Riderville Landfill Inspection

Date: _____

Inspection Conducted By: _____

Area Inspected	Work Required	Action Taken	Comments
Perimeter Fencing Conditions			
Debris/Litter Removal from Site			
Halocarbon Containing Appliances Upright			
Metals Containing Fuel Separated			
Observations			

Fuel Tank Monitoring

	Diesel Tank	Gasoline Tank
Dip Stick Measurement		
Volume Remaining		

Used Oil Monitoring

Tank Dip Measurement (# of markers)	Estimated Volume in Used Oil Tank	Required Action	Any unaccounted fluid loss?
I.E 5 markers + $\frac{3}{4}$ of 200 L = 1000 + 150 = 1150	1150 L	Arrange for tank to be emptied	No

Monthly Inspection Log
RM of Riderville Landfill Inspection

Date: _____

Inspection Conducted By: _____

Area Inspected	Work Required	Action Taken	Comments
Inspect Access Roads for Illegal Dumping			
Any Signs of Access Other Than Gate?			
Records Review to Ensure All Requirements Are Met			
Inspect Monitoring Wells For Security and Integrity			
Observations			

Clean Wood Burn Inspection

RM of Riderville Landfill

Date: _____

Inspection and Site Preparations Conducted By: _____

	Yes	No	Comments
Area inspected for clean wood only	<input type="checkbox"/>	<input type="checkbox"/>	
Prohibited items removed	<input type="checkbox"/>	<input type="checkbox"/>	
Wood is clean, dry and well aerated	<input type="checkbox"/>	<input type="checkbox"/>	
Is there an a Air quality advisory for the area	<input type="checkbox"/>	<input type="checkbox"/>	
Is there any overhead wires that can be impacted by the fire	<input type="checkbox"/>	<input type="checkbox"/>	
Buffer Zone 1. 15 meter from structure 2. 2 meter fire break	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Fire suppression equipment prepared and present	<input type="checkbox"/>	<input type="checkbox"/>	
Notification to 1. Emergency Management and Fire Safety 2. Local Fire Department	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	

Fire Supervision Record

Time	Comments	Name

Fire confirmed extinguished by: _____

Daily Waste Log
RM of Riderville Landfill

Date: _____

Operator: _____

Waste Categories

- A - Appliances
- B – Brush/Clean Wood
- C - Construction/Demolition
- H - Household Waste
- I - Industrial/Commercial
- M - Metal
- O - Oil/Filters/Containers
- Y- Yard Waste

Time	Hauler Name	Waste Origin	Volume/Weight	Type of Waste	Accepted: Yes/No

Operations Log

RM of Riderville Landfill

Date	Cover	Compaction	Leachate Removal		Surface Water Removal		EcoCentre (Emptied)			Metal Pile Emptied	Recycle Removed	Grain Bags Removed
			Date	Volume	Date	Volume	Filter	Oil Tank	Anti freeze			

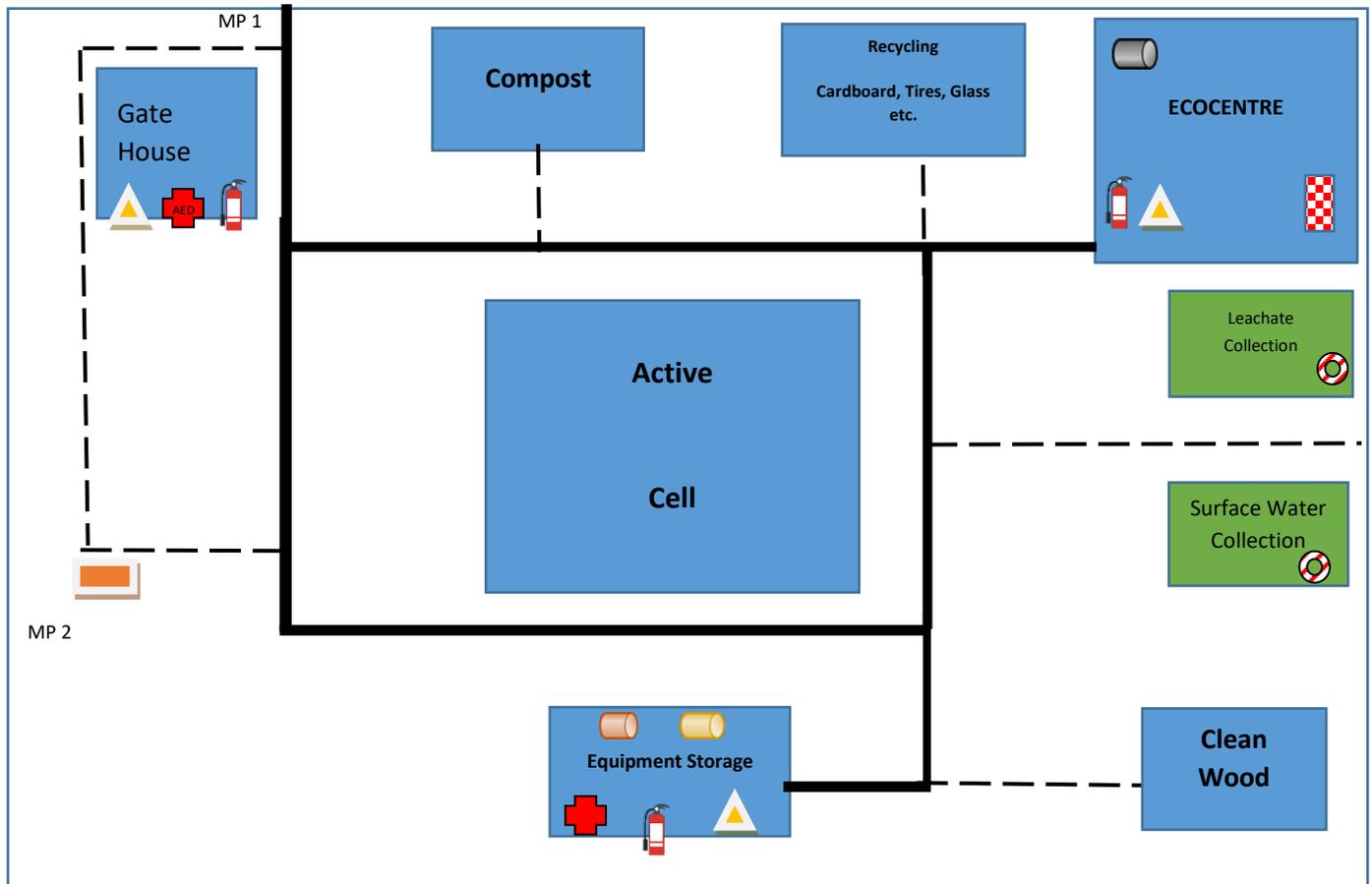
Compost Log

***All weights are approximate**

Date	Yard Waste Accepted (ton)	Compost Product Used on Site (ton)	Compost Product Sold (ton)	Compost Reprocessed or Stored (ton)
Total				

Appendix B
RM of Riderville Site Diagram

Site Diagram



Legend:

- Spill Kit
- First Aid Kit with AED
- First Aid Kit
- Fire Extinguisher
- Sand
- Flotation Equipment
- Muster Point
- Primary Road
- Secondary Road
- Diesel Storage
- Gasoline Storage
- Used Oil Storage
- Paint Can Storage

Location	Equipment	Type
Gate House	1 – Extinguisher	30 LBS ABC
	1 – First Aid Kit / AED	Standard Kit with AED
	1 – Spill Kit	Standard Spill Kit
Equipment Storage	1 – Extinguisher	30 LBS ABC
	1 – First Aid Kit	Standard
	1 – Spill Kit	Standard Kit
EcoCentre	1 – Fire Extinguisher	500 Gallon
	1 – Spill Kit	Standard Kit with oil socks