



St. Louis County Land and  
Minerals Department -  
Best Management  
Standards for Field  
Operations  
Exhibit "E"

A collage of images related to field operations. The top left shows a close-up of a tire tread on a road. The top right is an orange diamond-shaped sign that reads "ROAD WORK AHEAD". The middle left shows a red mechanical device, possibly a soil sampler or probe. The middle right shows a large corrugated metal pipe or culvert. The bottom left shows a white rectangular sign with a red and white striped border that reads "ROAD CLOSED". The bottom right shows a close-up of a road surface.

**Best  
Management  
Standards  
for  
Field  
Operations**

**SAINT  
LOUIS  
COUNTY**  
MINNESOTA  
**LAND DEPARTMENT**

## LD-WI-001 TIMBER FELLING

**WHO**

Feller Operators

**WHERE**

St. Louis County Lands

**WHY**

To ensure felling is conducted safely, efficiently and with minimum negative impact on the environment.

### PRE-WORK

- **Review the site map and regulations** with Field Operator or foreman who supervises the field activities.
- **Walk site.**
- **Identify boundaries and areas of concern.**
- **Plan where to fell trees to accomplish site prescription** and allow planned skidding/forwarding.
- **Discuss concerns with field operator or foreman and agree to any changes to plan.**

### WORK STANDARD

- **Refer to site map and regulations regularly and check compliance.**
- Operate only within **specified areas indicated on site map and regulations.**
- **Avoid felling trees across painted boundary lines.**
- **Avoid night time operations near property boundaries, RMZ's and reserve areas.**
- **Avoid damage to reserve areas and trees from equipment movement and felled tree placement.**
- Operate only within **specified areas indicated on site map and/or regulations.**
- **Follow site prescription for wetland and stream crossings.**
- **Contain and remove waste daily (grease tubes, filters, personal trash, etc.).**
- **Check soil conditions for compaction and rutting.**

Pay particular attention to activities in filter strips, RMZ's and near sensitive areas.



**STOP & REPORT**

- Report to Contract Administrator if you see anything that is **not in the site map or regulations**, such as previously unidentified seeps, springs, nonopen water wetlands, potential rare and endangered species nesting sites, or cultural features such as burial sites, old camps or homesteads, or potential archeological sites.
- If **excessive site damage is or will occur stop** and notify contract administrator and field operator or foremen who supervises the field activities (rutting, compaction, erosion).
- If anything is done that is **not in the site prescription, map or regulations, or outside a site boundary** report to the Contract Administrator.

## LD-WI-002 SKIDDING

### WHO

Skidder Operators

### WHERE

St. Louis County Lands

### WHY

To ensure skidding is conducted safely, efficiently and with minimum negative impact on the environment.

### PRE-WORK

- **Review the site map and regulations** with Field Operator or foreman who supervises the field activities.
- **Walk site**
- **Identify primary and secondary skid trails, boundaries and areas of concern.**
- **Identify reserve areas and reserve trees.**
- **Identify wetland inclusions, minimize soil exposure within filter strip areas adjacent to wetlands, and minimize soil exposure on slopes.**
- **Discuss concerns with field operator or foreman and agree to any changes to plan.**

### WORK STANDARD

- **Refer to site map and regulations regularly and check compliance.**
- **Operate only within specified areas indicated on site map**
- **Place slash on steep sloped or concentrated traffic skid trails.**
- **Minimize soil damage on primary and secondary skid trails.**
- **Avoid night time operations near property boundaries, RMZ's and reserve areas.**
- **Avoid damage to reserve areas and trees from equipment movement. Operate only within specified areas indicated on site map and/or regulations.**
- **Follow site prescription for wetland and stream crossings and minimize soil exposure within filter strip areas adjacent to wetlands, and minimize soil exposure on slopes.**
- **Contain and remove waste daily (grease tubes, filters, personal trash, etc.).**
- **Check soil conditions for compaction and rutting.**

Pay particular attention to activities in filter strips, RMZ's and near sensitive areas.



**STOP & REPORT**

- Report to Contract Administrator if you see anything that is **not in the site map or regulations**, such as previously unidentified seeps, springs, nonopen water wetlands, potential rare and endangered species nesting sites, or cultural features such as burial sites, old camps or homesteads, or potential archeological sites.
- If **excessive site damage is or will occur stop** and notify contract administrator and field operator or foremen who supervises the field activities (rutting, compaction, erosion).
- If anything is done that is **not in the site prescription, map or regulations, or outside a site boundary** report to the Contract Administrator.

## LD-WI-003 FIELD CREW – PRE-WORK

### WHO

Field Operators who perform work on lands managed by the St. Louis County Land and Minerals Department.

### WHERE

St. Louis County Lands.

### WHY

To ensure all field operators, prior to starting work, are informed of contract requirements.

### PRE-WORK

- **Meet with all field crew members** that will be working on the site.
- **Review the site prescription, special regulations and maps** with crew members prior to beginning work.
- **Give copies of site maps and special regulations** to crew members working on the site.
- **Walk site**
- **Discuss concerns and ensure project is fully understood by all crew members.**
- **Keep a record** that a pre-work meeting has occurred with the field crew.

### WORK STANDARD

- **Refer to site map and regulations regularly** and check compliance.
- Operate only within **specified areas indicated on site map and/or regulations.**
- **Follow site prescription for wetland and stream crossings.**
- **Contain and remove waste daily** (grease tubes, filters, personal trash, etc.).
- Monitor **site conditions to prevent excessive site damage from occurring (i.e. rutting, compaction)**
- **Pay particular attention to contract regulations when operating** in filter strips, RMZ's and near sensitive areas.

### STOP & REPORT

- Report to Contract Administrator if you see anything that is **not in the site map or regulations**, such as previously unidentified seeps, springs, nonopen water wetlands, potential rare and endangered species nesting sites, or cultural features such as burial sites, old camps or homesteads, or potential archeological sites.
- If **excessive site damage is or will occur stop** and notify contract administrator (rutting, compaction, erosion).
- If anything is done that is **not in the site prescription, map or regulations, or outside a site boundary** report to the Contract Administrator.

## LD-WI-004 FIELD EMERGENCY RESPONSE

### WHO

Field Operators who perform work on lands managed by the St. Louis County Land and Minerals Department.

### WHERE

St. Louis County Lands.

### WHY

To provide guidance and protect employees and field operators from dangerous situations.

### PRE-WORK

- **Field Operator and/or foreman who will supervise the activity will attend prework meeting** with contract administrator to review steps to take in case of an emergency.
- **Understand** that in all cases saving or protecting a life is top priority.
- **Review** procedures for various emergency situations.
- **Ensure necessary safety equipment is** available and in working condition.
- **Know** how to deal with initial stages of a fire.
- **Have emergency phone numbers available** and ready for use.
- **Have an emergency exit plan** in mind.

### WORK STANDARD

- **Treat and/or transport** victim in case of an accident
- **Be prepared** in the event of an emergency.
- **Be aware** of weather conditions that may be hazardous.
- **Clean up spills and leaks.**
- **Take necessary action in the event of medical emergency.**
- **Suppress** fires in initial stages.
- **Follow** emergency exit plan.

STOP & REPORT



- **Protect** yourself and others from exposure to danger.
- **Report** emergencies by dialing 911.
- **Report** spills. **Minnesota Duty Officer 1-800-422-0798**
- **Take** appropriate steps and contain leaks and spills. The required cleanup is determined on a case-by-case basis depending on the type of chemical spilled, quantity of chemical spilled, location of the spill, geology/hydrology of the area, and any other factors such as weather conditions.
- Contain spills of petroleum products less than 5 gallons to ground and thin spread contaminated soil on site.
- Spills of petroleum products to water or in excess of 5 gallons to ground, implement spill response procedures. (see LD-SOP-020 Emergency Equipment Guide 001).
- **In addition to notifying proper authorities, also report the following to the contract administrator: spills or leaks of hazardous materials and fire.**

## LD-WI-005 Road Construction

### WHO

Field operators who perform work on roads as part of activities on lands managed by the St. Louis County Land and Minerals Department.

### WHERE

St. Louis County Tax forfeited, and other public and private lands.

### WHY

To ensure construction of roads is conducted safely, efficiently and with minimum negative impact on the environment.

### PRE-WORK

- **Review work required** with Field Operator or foreman who supervises the field activities.
- **Walk site.**
- **Identify areas of concern.**
- **Discuss concerns with field operator or foreman and agree to any changes to plan.**
- **Ensure** all required permits have been obtained.

### WORK STANDARD

- **Refer to site map and regulations regularly** and check compliance.
- Operate only within **specified areas indicated on site map and regulations.**
- **Establish, inspect and** maintain appropriate stabilization, drainage and erosion control measures.
- **Stablize** exposed soil areas.
- **Maintain** filter strips and RMZ's.
- **Limit excavation area** to that which can be properly shaped and compacted within a day.
- **Install** drainage structures as construction proceeds.
- **Contain and remove** waste daily (grease tubes, filters, personal trash, etc.)
- **Pay particular attention** to activities in filter strips, RMZ's and near sensitive areas.

### STOP & REPORT

- Report to Contract Administrator if you see or do anything that is **not in the plan or regulations**, such as previously unidentified seeps, springs, nonopen water wetlands, potential rare and endangered species nesting sites, or cultural features such as burial sites, old camps or homesteads, or potential archeological sites, or you are causing damage to the road or adjacent land.
- If **excessive site damage is or will occur stop** and notify contract administrator and field operator or foremen who supervises the field activities (rutting, compaction, erosion).

## LD-WI-006 Road Maintenance

### WHO

Field operators who perform work on roads as part of activities on lands managed by the St. Louis County Land and Minerals Department.

### WHERE

St. Louis County tax forfeited lands, and other and private lands.

### WHY

To ensure that road maintenance is conducted safely, efficiently and with minimum negative impact on the environment.

### PRE-WORK

- **Review the work plan and regulations** with Field Operator or foreman who supervises the field activities.
- **Walk site.**
- **Identify areas of concern.**
- **Discuss concerns with field operator or foreman and agree to any changes to plan.**

### WORK STANDARD

- **Grade road surface** to maintain proper surface drainage and fill small ruts.
- **Minimize berms** along the road edge.
- **Use suitable material** and fill ruts and holes as soon as possible.
- **Clean debris** from culverts.
- **Water control structures must be maintained in good working condition.**
- **Do not remove surface** material from the road when snow plowing or grading.
- **Contain and remove** waste daily (grease tubes, filters, personal trash, etc.)

### STOP & REPORT

- Report to Contract Administrator if you see anything that is **not in the road plan or regulations**, such as previously unidentified seeps, springs, nonopen water wetlands, potential rare and endangered species nesting sites, or cultural features such as burial sites, old camps or homesteads, or potential archeological sites, or you are causing damage to the road or adjacent land.
- If **excessive site damage is or will occur stop** and notify contract administrator and field operator or foremen who supervises the field activities (rutting, compaction, erosion).

## LD-WI-007 Road Closure

### WHO

Field operators who perform work on roads as part of activities on lands managed by the St. Louis County Land and Minerals Department.

### WHERE

St. Louis County Lands

### WHY

To ensure the closure of roads is conducted safely, efficiently and with minimum negative impact on the environment.

### PRE-WORK

- **Review the closure plan and regulations** with Field Operator or foreman who supervises the field activities.
- **Walk site.**
- **Identify areas of concern.**
- **Discuss concerns with field operator or foreman and agree to any changes to plan.**

### WORK STANDARD

- **Refer to site map and regulations regularly** and check compliance.
- Operate only within **specified areas indicated on site map and regulations.**
- **Establish appropriate stabilization,** drainage and erosion control measures.
- **Maintain filter strips** and RMZ's.
- **Post sign** or utilize other methods for restricting access.
- **Contain and remove waste daily** (grease tubes, filters, personal trash, etc.)

### STOP & REPORT

- Report to Contract Administrator if you see anything that is **not in the closure planons**, such as previously unidentified seeps, springs, nonopen water wetlands, potential rare and endangered species nesting sites, or cultural features such as burial sites, old camps or homesteads, or potential archeological sites, or you are causing damage to the road or adjacent land.
- If **excessive site damage is or will occur stop** and notify contract administrator and field operator or foremen who supervises the field activities (rutting, compaction, erosion).

## LD-WI-008 Water Crossings

### WHO

Field operators who perform work on roads on land management.

### WHERE

St. Louis County tax forfeited lands, and other public and private lands.

### WHY

To ensure construction of water crossings are conducted safely, efficiently and with minimum negative impact on the environment.

### PRE-WORK

- **Review the site map and regulations** with Field Operator or foreman who supervises the field activities.
- **Walk site.**
- **Identify areas of concern.**
- **Discuss concerns with field operator or foreman and agree to any changes to plan.**
- **If changes are needed**, a change order (for contracts) or a modified prescription must be completed by the contract administrator before work on the modified activity begins.
- **Make sure all** required permits have been obtained.

### WORK STANDARD

- **Minimize construction disturbance** to the natural flow of the water.
- **Place excavated material** in a manner so as not to impede drainage or increase sedimentation.
- **Install water crossings** and culverts as directed.
- **Armor inlets** and outlets in accordance with the site project plan.
- **Materials placed in water** should be clean, non-erodible and non-toxic.
- **Install and maintain water control structures** and sediment control measures where needed and as directed.
- **Do not create berms** of soil or vegetation which may impede water flow.
- **Maintain filter strips** and RMZ's.
- **Temporary crossing:**
  - **Install all** temporary structures so they can easily be removed;
  - **Anchor temporary** structures at one end; and
  - **Do not use soil fill.**

### STOP & REPORT

- Report to Contract Administrator if you see anything that is **not in the site map or regulations**, such as previously unidentified seeps, springs, nonopen water wetlands, potential rare and endangered species nesting sites, or cultural features such as burial sites, old camps or homesteads, or potential archeological sites., or you are causing damage to the road or adjacent land.
- If **excessive site damage is or will occur stop** and notify contract administrator and field operator or foremen who supervises the field activities (rutting, compaction, erosion).

## LD-WI-009 Gravel Pit Extraction

### WHO

Road construction and maintenance field operators.

### WHERE

St. Louis County Lands

### WHY

To ensure the extraction of gravel is conducted safely, efficiently and with minimum negative impact on the environment.

### PRE-WORK

- **Review the site map and regulations** with Field Operator or foreman who supervises the field activities.
- **Attend pre-work meeting** to become familiar with project boundaries, excavation depth and locations of spoil piles.
- **Walk site.**
- **Identify boundaries and areas of concern.**
- **Discuss concerns with field operator or foreman and agree to any changes to plan.**

### WORK STANDARD

- **Remove and pile** topsoil only in locations designated on the site map and regulations. Topsoil should be placed and piled so as to prevent erosion from spreading soil off site.
- Do not place materials in filter strips, RMZ's or other sensitive areas such as buffer strips, and cultural sites adjacent to borrow pits.
- **Excavate material** according to site map and regulations.
- **Reslope pit face** according to site map and regulations.
- If pit is to be closed, replace topsoil and stabilize site with a vegetative cover.
- Avoid heavy equipment operation in areas outside pit boundaries as designated in site map and regulations, or flagged on the ground.
- Refer **to site map and regulations regularly** and check compliance.
- Operate only within **specified areas indicated on site map and regulations.**
- **Follow site prescription for wetland and stream crossings.**
- **Contain and remove waste daily** (grease tubes, filters, personal trash, etc.).

- Pay particular attention to **activities in filter strips, RMZ's and near sensitive areas.**



- Report to Contract Administrator if you see anything that is **not in the site map or regulations**, such as previously unidentified seeps, springs, nonopen water wetlands, potential rare and endangered species nesting sites, or cultural features such as burial sites, old camps or homesteads, or potential archeological sites.
- If **excessive site damage is or will occur stop** and notify contract administrator and field operator or foremen who supervises the field activities (rutting, compaction, erosion).

## LD-WI-010 USE, STORAGE AND DISPOSAL OF HAZARDOUS MATERIALS & WASTES

### WHO

Field Operators who perform work on lands managed by the St. Louis County Land and Minerals Department.

### WHERE

St. Louis County Lands.

### WHY

To ensure that hazardous materials and wastes such as waste oil, waste antifreeze and waste batteries are properly used, stored and disposed of to protect individuals and minimize the impact on the environment.

### DEFINITIONS

- *Generator Category* - hazardous waste generator classification.
- *Large Quantity Generator (LQG)* - generates more than 2200 lbs of hazardous waste per month and more than 2.2 lbs of acute hazardous waste per month.
- *Small Quantity Generator (SQG)* - generates between 220 lbs and 2,200 lbs of hazardous waste per month.
- *Very Small Quantity Generator (VSQG)* - generates less than 220 lbs of hazardous waste per month and less than 2.2 lbs per month of acute hazardous waste per month.
- **Waste Manifest** - a form used to track shipments of hazardous waste to ultimate disposal site.

### PRE-WORK

- Acquire hazardous materials **only in the amounts required** to avoid generating hazardous waste.
- Check that **current Material Safety Data Sheets (MSDS)** are available for those hazardous materials and wastes encountered in the workplace.
- **Read the label and the relevant MSDS** for exposure, handling and spill response instructions.
- Identify hazardous waste generation points and ensure proper storage and disposal procedures are in effect.
- Each month, determine which generator category your operation falls under.

- If you generate hazardous waste, obtain a Hazardous Waste Generator License from the Minnesota Pollution Control Agency (MPCA).
- Obtain an EPA Identification number if your operations fall into the SQG or LQG category.
- Ensure that those people expected to work with hazardous materials or hazardous wastes, including transportation have received the appropriate training.
- 
- Ensure that drivers transporting hazardous waste shipments accompanied by a waste manifest are registered hazardous waste haulers.
- **Identify incompatible hazardous materials used on site and store them separately.**
- Provide an adequate number of leak proof storage containers to store hazardous materials and wastes.
- **Know how to use spill response materials** for each material that you are using.
- Ensure that **appropriate fire extinguishers and spill kits are readily available near handling and storage areas.**
- Designate appropriate areas for hazardous materials and hazardous waste handling and storage so that spills will not contaminate water sources (e.g. outside of RMZs and filter strips).



#### **Use, Handling and Storage**

- Obtain and wear the **appropriate personal protective equipment.**
- Use, store and dispose of all hazardous materials according to instructions and labels. (For fuel handling and storage, see Fuel Handling and Management)
- Do not use used oil as a dust suppressant or pesticide.
- Place drip trays under diesel generators.
- Ensure hazardous materials and hazardous wastes are stored in leak proof containers that are in good condition and are compatible with the material being stored. Where possible, store the items in their original container.
- **Keep lids closed** when containers are not being filled.
- **Store hazardous materials on impermeable surface with**

**secondary containment**, away from water sources .

- Label containers with the name of the hazardous material or waste and the word "Hazardous Waste", where appropriate.
- Label Used Oil tanks "Used Oil" as well as provide the company name or emergency contact information. Control access to the fill pipe.
- Ensure that **storage facilities are secured from unauthorized entry and protected from spills and the accumulation of rain and snow.**
- Check **storage containers for leaks or corrosion and storage areas for spills or an accumulation of debris.**
- Conduct a **periodic inventory and check for all expired materials and those no longer in use** and dispose of them appropriately.
- Check that **labels are legible** and in good condition.
- Ensure that all required **storage and disposal instructions are available and current.**
- Track the amount and types of hazardous waste stored on-site.
- Disposal and Transport
- Drain oily rags as much as possible so that they are not visible dripping before discarding them.
- Recycle hazardous wastes, where possible, or dispose of them at a facility licensed to accept them. Note: If you recycle used oil, used antifreeze, waste pesticides and batteries, you do not have to count these toward your monthly hazardous waste generator total.
- During transport, make sure containers and drums are secured against movement and closed to prevent spillage.
- SQG and LQG must use a waste manifest to transport wastes off-site.
- Transport hazardous materials and wastes in accordance with MnDOT regulations. Note: The general rule of thumb is that those shipments requiring waste manifests also require vehicle placards and DOT marking and labeling.
- Maintain copies of waste manifests for 3 years from the shipment date.
- Used oil may be transported to a recycling facility, in amounts equal to or less than 55 gallons in a single vehicle. Any amounts of used oil in excess of 55 gallons must be hauled by a registered used oil hauler.



- If a spill occurs:
  - **Protect yourself and others from any exposure.**
  - **Take appropriate steps to stop and contain leaks.**
  - **Guard the site to prevent others from being exposed.**
  - **Follow clean up, spill response and disposal procedures** specified in the Material Safety Data Sheets and as instructed by the environmental department representative.
- **Report any hazardous waste** of unknown origin.
- **Report any damaged, missing, or incomplete spill kits or fire extinguishers** to your supervisor.
- **Report any acts of illicit waste dumping.**

## LD-WI-011 PESTICIDE APPLICATION

### WHO

Field Operators who perform work on lands managed by the St. Louis County Land and Minerals Department.

### WHERE

St. Louis County Lands.

### WHY

To ensure the proper application of pesticides on St. Louis County managed lands.

### PRE-WORK

- Meet with all field crew members **that will be working on the site.**
- **Ensure** personnel using pesticides have the appropriate application license.
- Review the contract specifications **and maps with crew members prior to beginning work.** Note any special issues or conditions (*e.g.*, **Riparian Management Zones (RMZ), filter strips, cultural areas, potential hazards, no treatment zones, etc.)**
- Read and understand label directions **for the pesticide being used.** Review current **MSDS sheets for the pesticides being applied.**
- Inspect equipment before spraying **to ensure it is in good working order and calibrated correctly.**
- **Discuss concerns and ensure project is fully understood by all crew members.**
- **Check for acceptable weather conditions.**
- **Keep a record** that a pre-work meeting has occurred with the field crew.

### WORK STANDARD

- **Refer to site map and regulations regularly** and check compliance.
- **Operate** only within **specified areas** indicated on site map.
- **During transport,** make sure all pesticide **containers are secured against movement and closed** to prevent spillage.

- **Follow contract requirements** for pesticide mixture and rates.
- **Mix and load pesticides** outside of RMZ's, filter strips and sensitive areas.
- Do not fill equipment directly from water sources **unless proper and functioning anti-siphoning mechanism or fixed air gap is provided.**
- Use a nurse tank when possible.
- Stay in attendance while filling **spray/mixing tank.**
- Apply pesticides by following label instructions.
- Maintain accurate application records as required by Minnesota Department of Agriculture.
- Containers must be disposed of in accordance of the Minnesota Department of Agriculture.
- Contain and remove waste daily (**grease tubes, filters, personal trash, etc.**).
- Store left over pesticides in their original containers in accordance to label instructions.

**STOP & REPORT**



- Report to contract administrator and field operator or foremen who supervises the field activities , if application equipment starts to leak or malfunction.
- If you see anything that is **not in the site plan**, such as previously unidentified seeps, springs, non-open water wetlands, potential rare and endangered species nesting sites, or cultural features such as burial sites, old camps or homesteads, or potential archeological sites.
- If **excessive site damage is or will occur** due to high moisture (rutting, compaction, erosion).
- If weather conditions or any other environmental condition creates a potential for increased drift, poses a safety concern, or could reduce the effectiveness of the treatment.
- If there is a spill. Control, contain, and clean-up the spill in accordance with Minnesota Department of Agriculture regulations. Report to Minnesota Duty Officer (800) 422-0798.

## LD-WI-012 FUEL/LUBRICANT MANAGEMENT & HANDLING

### WHO

Field Operators who perform work on lands managed by the St. Louis County Land and Minerals Department.

### WHERE

St. Louis County Lands.

### WHY

To ensure fuel/lubricants are handled and managed in compliance with the Department's plans and procedures and to minimize the impact on the environment.

### PRE-WORK

**Review designated locations for equipment fueling and lubricant draining activities with Sale Administrator.**

**Locate fueling and maintenance activities and storage areas at least 30 yards away from water bodies.**

**Review up-to-date Material Safety Data Sheets (MSDSs) applicable to the fuel type.**

**Identify location of spill kits and fire extinguisher** and ensure that all materials are in good working order and are readily available where fuel is handled and stored.

Ensure **tanks being brought on-site are in good-condition** (e.g. are not leaking or showing signs of excessive corrosion) and have been specifically designed for fuel storage.

**Review spill response and reporting procedures.**

Observe special conditions or sensitive areas

**Hang fuel nozzle up after refueling.**

### WORK STANDARD

#### FUELING

**Follow fueling instructions.**

Do not allow fuel or lubricants to drain onto the ground.

**Before refueling, make sure the vehicle or tank will not move.**

Set the parking brake.

**Do not smoke** near or around dispensing or loading activities.

**Conduct dispensing and loading activities away from heat sources and sparks.** Turn off radios and cell phones.

**Ground tanks** before filling through an open fill hole and maintain the ground until after closing the fill hole.

Before filling tanks and containers **make sure they are cleaned of incompatible residue.**

Fill / dispense from portable tanks while they are **off the vehicle.**

**Do not overfill** containers or tanks so as to cause leakage or bulging - leave at least 1% outage (space) of the tank's capacity unfilled, unless otherwise specified.

- **Stay with nozzle** until fuel transfer is complete.
- **Shut-off all valves after fueling.**
- **Hang-up nozzle**, with nozzle tip up, after fueling.

#### **STORAGE**

**Label all tanks, drums and containers with the fuel name.**

**Keep lids, bungs and valves closed when not in use.**

Store portable tanks off the ground, mounted on skids, or securely positioned in a cradle.

**Protect containers/tanks from collision.**

**Chock portable tanks** to prevent movement.

**Inspect equipment and tanks routinely** and make repairs as required (e.g. Replace cracked and worn hoses and defective nozzles).

Monitor compliance with all sensitive sites and special conditions.

**Check availability and operability of spill kits/materials.**

**Check the ground for staining or evidence of spills.**

Check site map to ensure **fueling, loading and storage areas are away from water.**

## TRANSPORT

- Inspect vehicle before and during each trip to ensure tanks are in sound condition.
- Ensure **containers do not leak and are sealed** with a proper fitting cap. **Do not transport leaking** tanks or containers.
- **Secure nozzles and valves** prior to transport.
- Transport all drums and containers **upright**.
- **Brace containers, tanks and drums to prevent movement and damage** during transportation (e.g. use tie downs with adjustable straps to prevent shifting, or place small containers in an equipment box).
- **Ensure spill kits are available** in any vehicle transporting fuel.

## SIGNS

- **All markings, labels and placards must:**
  - **Accurately represent the material;**
  - **Be clearly visible and stand out from other signs;**
  - **Be securely attached and horizontal and upright;** and
  - **Be durable and weather resistant.**
- Mark and label:
  - Containers/non-bulk tanks on one side.
  - Bulk tanks on 2 opposing.
- **Note:** Materials of trade, other than compressed gas cylinders, only have to be marked with the shipping name or common name.

### LABELING

- **Labels must be on each side and placed next to markings.**
- For compressed gas cylinders of:
- Propane or Acetylene use the Flammable Gas label or tag



- Oxygen use either the Oxygen label, which states the word Oxygen and hazard class 2, or use the Oxidizer and Non-Flammable Gas label or tag:



**Note: Compressed gas cylinders permanently mounted to the back of a vehicle do not require a label.**

- Use the Flammable label for gasoline or other flammable liquids:



**STOP & REPORT**

- Make efforts to minimize spills.
- If you spill **less than 5 gallons to ground**, immediately contain the spread, and thin spread any contaminated soil on the site.
- If you spill **any amount of fuel, oil or lubricating oil to water** or you spill **5 gallons or more to ground**, implement the spill response procedures.

- **Dispose of small amounts of spill contaminated materials (e.g. pads, rags) in the designated containers for oily wastes.**
- Report immediately to your Supervisor, if you:
  - **Observe a spill or leak** of lubricants.
  - **See or cause a spill which requires the spill response procedures** to be used.
- See something that has the **potential to cause or is causing damage** to the environment.
- Report worn or damaged hoses.
- Report leaking or damaged tanks.

Replace missing or illegible labels on tanks/containers.