



GUIDE TO SALT STORAGE REQUIREMENTS FOR SMALL COMMERCIAL SNOW REMOVAL SERVICES

INTRODUCTION

Salt is a listed polluting material in the [Part 5 Rules — Spillage of Oil and Polluting Materials](#) and this document outlines requirements for salt use and storage for the small commercial companies offering snow removal services when they have 5 tons or more salt or sand/salt mixture and/or 1000 gallons or more of brine on-site. It is not intended to address [road agency's salt and brine storage](#) requirements. The Michigan Department of Environmental Quality, [Water Bureau](#) is responsible for overseeing the Part 5 Rules. If your facility has oils and petroleum based products or wastes in a single tank of 660 gallons and larger, or total storage capacity of 1320 gallons or more, or you have other polluting materials listed in the Part 5 Rules in excess of 440 pounds stored outdoors or 2200 pounds stored indoors, the operations of your facility are beyond the scope of this document. See more Part 5 Rules information at www.michigan.gov/deq and select "Water" "[Emergency Response for Releases to Water.](#)"

Despite its wide use as a deicer, salt has potential drastic effects on the environment when improperly used or stored. Salt dissolves quickly in water and moves easily through the environment impacting groundwater and surface waters causing problems for plants, animals, and people. The best defense against salt pollution and potential liability costs is to ensure the responsible storage and use of salt. Companies are encouraged to adopt procedures and management practices that ensure responsible salt stewardship. The Part 5 Rules were written with that in mind.

DEFINITIONS

"Salt" means salt, salt solutions, salt mixtures, or salt substitutes in solid or liquid form called brine. It includes:

- Sodium chloride (often called rock salt)
- Potassium chloride
- Calcium chloride
- Magnesium chloride
- Any mixture that contains 1% or more of the above chlorides including sand and salt mixtures

"Secondary containment structure" means a unit that surrounds liquid storage vessels and is intended to prevent any release of polluting materials from reaching the environment.

"Storm water" is the liquids from any type of precipitation like snow melt, rain, hail, etc.

"Threshold management quantity" or "TMQ" is the amount of a polluting material that makes it necessary for a facility to comply with the Part 5 Rules. For salt, the TMQ is 5 tons in the solid form (See Fig. 1) or 1000 gallons in the liquid form (See Fig. 2). For a visual perspective, per the Salt Institute, one ton of solid salt requires approximately 25 cubic feet of storage space.

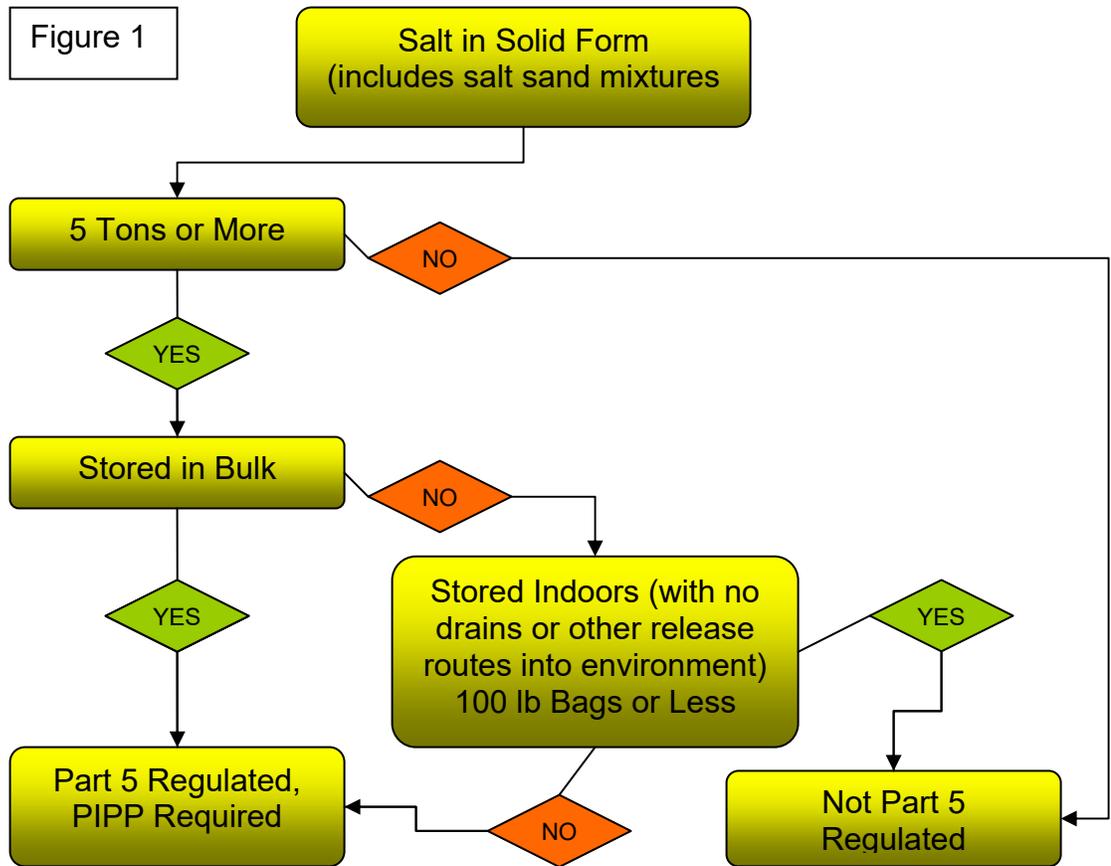
Possible ways to eliminate the requirement for salt storage and containment provisions would be:

- Use alternative deicing products and clean sand whenever possible to eliminate salt contaminated runoff.
- Store the sand and salt separately and batch-mixed it on an as needed basis, if the amount of salt on-site is below 5 tons.

"Threshold reporting quantity" or "TRQ" is the amount of a polluting material that constitutes a release or spill and must be reported. For salt, the TRQ is 50 pounds in solid form or 50 gallons in liquid form.



DETERMINING IF SOLID SALT IS REGULATED BY PART 5 RULES



SOLID SALT STORAGE

- Solid salt can not be stored within 50 feet of a designated wetland or the shore or bank of any lake or stream.
- Salt containment structures located within a 100-year floodplain must be designed and constructed to remain effective during a 100-year flood. Some floodplain information is available from the [Federal Emergency Management Agency](http://www.fema.gov) at www.fema.gov. Other floodplain resources include the local public works department, [watershed groups](#), [Soil and Water Conservation District](#), or contact the DEQ Land and Water Management Division, [Water Management Section](#) at 517-373-1170.
- Solid salt use and storage areas must be designed, constructed, maintained, and operated to prevent unauthorized releases of salt or salt contaminated storm water to public sewer systems or to surface water or groundwater. The rules do not require a specific type of storage structure to be built. Design and construct salt storage structures to protect salt from exposure to snow and rain. It is recommended that all salt storage, loading, and transfer areas are on an impermeable surface like asphalt or coated concrete with a roof covering these areas. A fixed roof is preferable over using tarps because it is very difficult to keep tarps completely over the salt piles, especially during storms.

For more information on constructing salt storage units, calculating how much space is needed for storage, and salting practices, see the publications from the [Salt Institute](#) and select "About the Salt Institute" "[Publications and Audio-visual materials](#)" and scroll down to the category Winter Maintenance. The Salt Storage Handbook contains tables showing how much space

different height piles will cover and also provides exposure surface areas to use in calculating how many tarps would be needed for temporarily covering salt piles.

Procedures that prevent the overfilling of loader buckets can result in a much cleaner operation, resulting in savings from less salt spillage. Loader ramps might be used to extend the reach of your loader, resulting in less salt spillage and less truck and loader damage. Shut down procedures and check lists that include housekeeping are also very helpful in controlling salt exposure to storm water. Spilled salt can be easily swept up and returned to proper storage areas.

Develop a self inspection schedule to look for problems and then fix them if found. Ask questions like: Is there run-on or run-off of storm water? Where is it going? In the warmer months, do you see vegetation damage? Is the storage building in good shape—is it containing the salt? Is there a leaking roof?

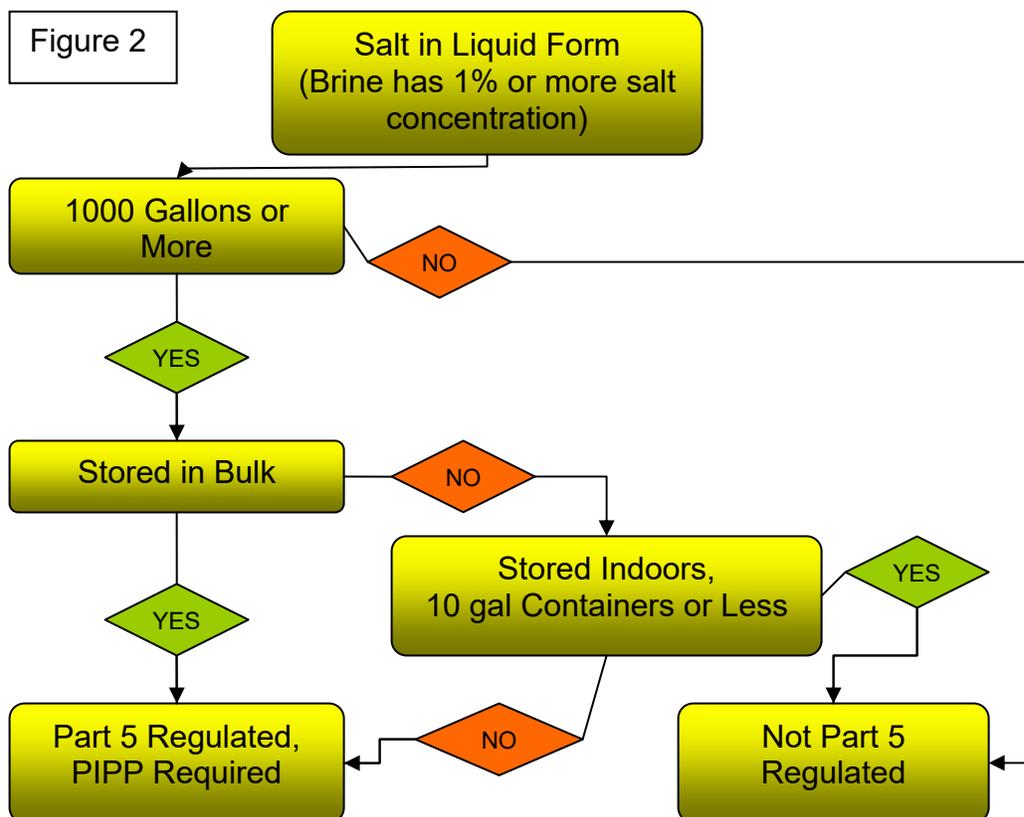
Additional [best management practices for road salt](http://www.michigan.gov/documents/deq/deq-wb-nps-wrm_250914_7.pdf) can be found at http://www.michigan.gov/documents/deq/deq-wb-nps-wrm_250914_7.pdf.



Bad building example:

- ✓ Cracks between boards
- ✓ No curbing

DETERMINING IF BRINE IS REGULATED BY PART 5 RULES



BRINE STORAGE AND MANAGEMENT

Most small operators will not have regulated amounts of brine. Brine is liquid that has 1% or more concentration of salt and can be purchased as a product or can result from storm water being contaminated from the salt pile. See the next section about disposing of storm water and waste brine.

Outdoor storage areas with 1000 gallons or more of brine must have secondary containment structures. Secondary containment structures should be made out of materials compatible with salt and constructed with a roof. A roof will reduce the accumulation of storm water within the containment structure.

Secondary containment structures must be constructed to contain the larger volume of the following:

- 10% of the total volume of all of the containers within the containment structure, or
- 100% of the volume of the largest storage container within the containment structure.

Secondary containment structures must allow inspections of the tanks or containers, the timely detection of any leaks and recovery of any spillage, and the removal and proper disposal of any captured precipitation so that the minimum required capacity is maintained at all times.

Brine stored indoors must be managed so no releases can reach drains, groundwater or surface waters. If there is a floor drain, it must be plugged unless it is:

- Connected to a municipal sewer system with the approval of the local sewer authorities,
- Connected to a holding tank, or
- Approved in a discharge permit that the facility has obtained from the DEQ.

See the [Salt and Brine Storage Guidance for Road Agency Maintenance and Other Facilities](#) for more information about brine management and if the source of brine product is from an oil and gas well.

MANAGING & DISPOSING OF STORM WATER AND WASTE BRINE

Companies must properly manage the run-off and run-on of precipitation on the property and waste brine. Storm water must be collected and removed in a timely manner and either used as a prewetting agent or disposed of properly. It may be necessary to test the storm water prior to discharge to ensure that it is not contaminated.

Storm water that has not contacted the salt and is not contaminated with other materials may be disposed of by the following options:

- Discharging the storm water onto the ground if the company meets the following conditions:
 - ✓ Have direct supervision of the discharge by qualified facility personnel.
 - ✓ Keep containment structure valves closed at all times except during storm water removal.
 - ✓ Do not create erosion or nuisance conditions, especially for neighbors, from the discharge.
- Discharging the storm water into a municipal sewer system only with prior approval from the municipal sewer authority. Do not discharge it to a septic system.
- Shipping it off-site as explained below for contaminated storm water if the on-site discharges are not possible.

Storm water that has been contaminated by salt or other materials, and/or waste brine, may be used or disposed of by the following opti

- Using the storm water as a pre-wetting agent if using that method of deicing. This is the preferred management option.
- Having the storm water hauled offsite for disposal if the company meets the following conditions:
 - ✓ Obtain a site identification number if the company is hiring a transporter to haul the waste off-site when the company doesn't already have one. Check the [Waste Data System \(WDS\)](#) to see if a number is assigned for the site and other information on file is current and either use the online MiTAPS system at www.michigan.gov/mitaps or submit the [form EQP5150](#) if need to update information or apply for a new number. For assistance, call the Environmental Assistance Center at 800-662-9278 or [Waste and Hazardous Materials Division District Office](#).
 - ✓ Use a [permitted and registered liquid industrial waste transporter](#) if hiring a hauler.
 - ✓ Meet [manifesting](#) and other [liquid industrial waste generator requirements](#). [Submit copy](#) of manifest to DEQ Waste & Hazardous Materials Division by the 10th of month following shipment. Get a signed copy back from the disposal company within 35 days of shipment and keep that copy at least 3 years from the date of shipment.
 - ✓ If the company is hauling their own storm water in amounts of 55 gallons or less, they are not required to be a permitted and registered transporter or use a waste manifest, nor obtain a site identification number, if the following conditions are met:
 - Keep a record of the source and quantity of waste and where the waste is being transported with the waste shipment.
 - Obtain a signature from the designated facility acknowledging receipt of the waste and provides a copy of the record to that facility.
 - Keep a copy of the shipment records for at least three years.
 - The designated facility and the generator must manage the waste according to the liquid industrial waste regulations.
 - Have insurance. Check if your insurance company will cover accident expenses. If hauling your own liquid industrial waste to a properly notified destination facility in quantities of 55 gallons or less, see [op memo 121-2](#). If hauling more than 55 gallons, discuss insurance requirements and submitting the MCS-90 form with WHMD District Office.

- The DEQ does not recommend that brine be discharged directly to a municipal sanitary sewer due to potential impacts to surface water and groundwater quality. However, where options for reuse or approved brine disposal wells are unavailable, it may be an option depending on the amount of brine, the rate of discharge to the wastewater treatment plant, and the discharge location. DEQ can evaluate such discharges at the time of reissuance of the discharge permit for the wastewater treatment plant (WWTP). If water quality standards will be met, then WWTP personnel can approved the discharge into their sanitary sewer system. Do not discharge salt contaminated storm water into a septic system.

WRITING A PIPP

Someone from the business can write the Pollution Incident Prevention Plan (PIPP) or hire a consultant to do it (see Appendix A for an example plan). Keep it simple and identify:

- ✓ Business address, phone numbers, owner and spill coordinators
- ✓ What materials are onsite and how/where stored
- ✓ What the facility will do if there is a release, including release reporting conditions, and
- ✓ Provide a site diagram and location map.

After writing a PIPP, a company needs to:

- Keep a copy of the plan on-site.
- Send a letter to the [DEQ Water Bureau District Office](#) that includes a statement certifying the facility has developed a PIPP and is operating in accordance with the Part 5 Rules. Send the letter within 30 days of preparing the PIPP and it is suggested you keep a copy. It is recommended you identify what is the polluting material on-site e.g. salt or brine. Make sure to include the name of the company, address, name of contact person and phone number.
- Notify the [local emergency planning committee](#) and the [local health department](#) that a PIPP was completed and that a copy of the plan is available to them upon request. It is recommended a letter be sent and to keep a copy of the letter, but some local committees and health departments may accept a phone call as the notice. If you call, write down the date and who you spoke to. Send the letter or call within 30 days of preparing the PIPP. It is recommended you identify what is the polluting material on-site.
- Provide a copy within 30 days If any of these agencies requests a copy.
- Review the plan at least every 3 years. If an update was necessary, renotify the DEQ.

RELEASE REPORTING

Under the Part 5 rules, the business will need to notify the Pollution Emergency Alerting System (PEAS) at 800-292-4706 and 911 if you have any of the following releases of salt or brine:

- If you have a solid salt spill of 50 pounds or more onto the ground or waters of the state, or
- 50 gallons of brine

A release does not include the amount of salt and brine you are using for deicing purposes.

A follow-up written report is also required to be sent to DEQ Water Bureau District Supervisor (the address is the same as for [staff contacts](#)) and the [local health department](#). The optional [Spill or Release Report form EQP3465](#) is available on the Part 5 Rules website, but is not required to be used.

The business may be subject to [other release reporting requirements](#) depending on other materials on site or if there was an accident with a fuel release. Information is at www.michigan.gov/deq and select “Key Topics” “Environmental Emergencies” “[Spill/Release Reporting](#).”

APPENDIX A SAMPLE PIPP

TRI-CITY LANDSCAPING POLLUTION INCIDENT PREVENTION PLAN (PIPP)

I. Identification Information

- a. Location/Mailing Address: Tri-City Landscaping
1234 Freewill Rd.
Anyplace, MI 49555
517-555-5678 business hours
517-555-5679 non-business hours
- b. Spill Coordinators and cell phones to be called if have a release:
 - i. Ken Harris (Owner) XXX-XXX-XXXX, Spill Coordinator
 - ii. Susan Harris XXX-XXX-XXXX, Alternate Spill Coordinator 1 if Ken not available
 - iii. Jim Knight XXX-XXX-XXXX, Alternate Spill Coordinator 2 if Ken and Susan not available
- c. Location Maps: See Attached. No surface water within 2 miles of site.
- d. Facility Operations: Office, maintenance shop, equipment storage building,
and onsite storage of polluting materials

II. Materials Stored

- a. Virgin Motor Oil 55 gallon drum, stored indoors
- b. Used Motor Oil 110 gallons, stored indoors
- c. 2-Cycle Oil Misc. small quantities, retail packaging, stored indoors
- d. Gasoline Misc. small quantities, 5 gal. cans, stored indoors
- e. Bulk Gasoline Max. 600 gal., two 300 gallon above ground tanks
- f. Fertilizer Max. Six 50 pound bags, stored indoors
- g. Pesticides Max. 1 case of 12/ one gallon concentrate stored indoors
- h. Solid Salt Max. 10 tons, salt storage building

Salt is the only material that exceeds threshold planning quantities.

III. Storage/Buildings

- a. Above Ground Gasoline Storage Tanks – replaced 2002. Consists of two 300 gal. stainless steel tanks. Secondary containment consists of dual wall construction with leak detection system. Approved by local fire department.
- b. Salt Storage Building – built 1999. Wood construction with concrete curbed pad. Covered loading/unloading area with curbed asphalt pad sloped to center. Drains permanently blocked off to allow collection of snowmelt and rain. When necessary, hire permitted and registered transporter to haul collected liquids to a wastewater treatment facility.
- c. Office/Maintenance Shop/Vehicle Storage – built 1988. Pole construction with curbed concrete pad. Fertilizer and pesticides stored in corner on spill pallets. Floor drains through oil/water separator to the sanitary sewer with city sewer authority approval.
- d. Equipment Storage Building – built 2000. Pole construction, concrete pad, no drains.

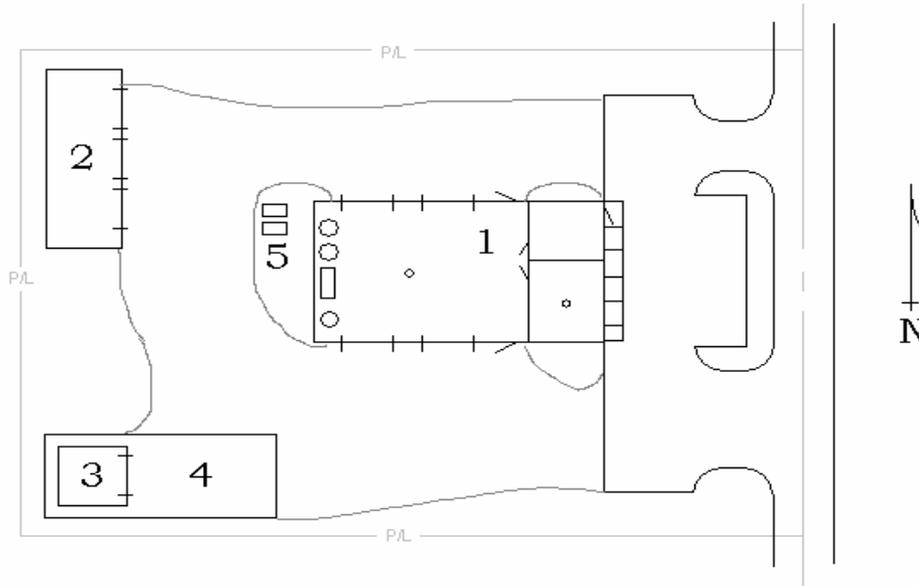
IV. Spill Control

- a. Annual employee training on spill prevention and cleanup, new employees trained before operating equipment.
- b. Weekly inspections of site looking for any signs of releases
- c. Procedures put in place to minimize spills while loading/unloading.
- d. Minor spills will be contained and cleaned up. Soak up liquids with absorbents like clay or sand. If no free liquid put in trash if approved by waste disposal company. Sweep up spilled salt and use for deicing.
- e. Large spills and/or road accidents where materials got into water, call cleanup contractor.
- f. Spill Coordinator will report the following spills:
 - i. Salt spills over 50 pounds or 50 gallons of brine onto the ground or into water: Call MDEQ PEAS and 911 as required by Part 5 rules
 - ii. Gasoline release of 32 gallons or more onto the ground: Call MDEQ PEAS as required by Part 201 (Note: See calculation example at <http://www.deq.state.mi.us/documents/deq-ess-sara-releasecalcs.pdf>)
 - iii. Oil release 50 pounds (approximately 7 ½ gallons) onto the ground: Call MDEQ PEAS as required by Part 5 rules.
 - iv. Any amount of oil or fuel that reaches surface water or shorelines: Call MDEQ PEAS and the National Response Center as required by the Clean Water Act and Part 31.
 - v. Any spill that they are in doubt about reporting: Call MDEQ PEAS.
- g. Within 10 days of release, submit a written spill report for reportable releases to:
 - i. MDEQ Water Bureau Field Operations Chief, PO Box 30273, Lansing MI 48909-7773
 - ii. Anyplace Local Health Department, Environmental Section, XXX Garden, Anyplace MI 49555

Note: the optional report form EQP3465 is at http://www.michigan.gov/deq/0,1607,7-135-3307_29894_5959-20341--,00.html The DEQ may request other follow-up reports depending on the situation.

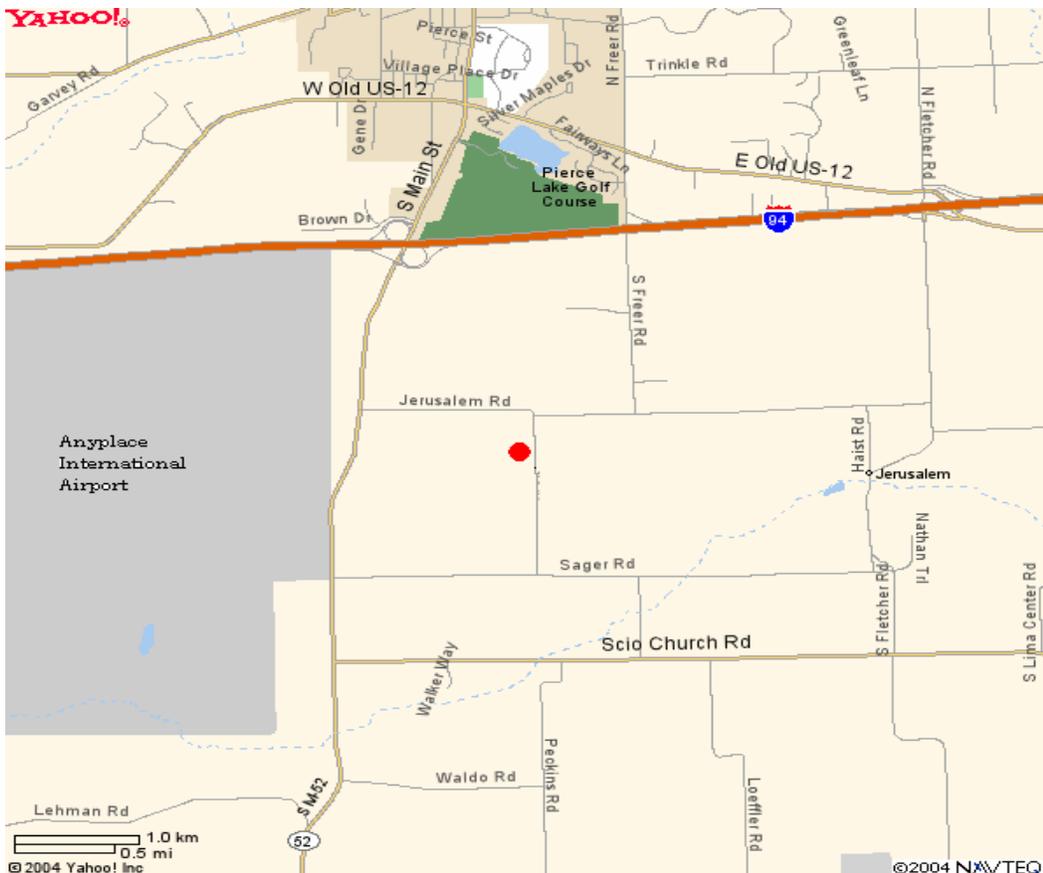
V. Emergency Numbers the Spill Coordinator is to contact:

- a. MDEQ Pollution Emergency Alerting System 800-292-4706
- b. MDEQ Anyplace District Office 517-555-0977
- c. Anyplace Fire, Police, and EMS 911
- d. Anyplace Local Emergency Planning Committee 517-555-9083
- e. Anyplace Wastewater Treatment Plant 517-555-3651
- f. National Response Center 800-424-8802
- g. Spill Contractor: Acme Industrial Sanitation 517-555-8922
3546 Scenica Highway
Anyplace, MI 49555
MID 078530520



Legend:

1. Office/Maintenance Shop/Vehicle Storage – Contains used and virgin motor oil, 2-cycle oil, miscellaneous gasoline, pesticides, and fertilizer.
2. Equipment Storage Building
3. Salt Storage Building
4. Covered Salt Loading/Unloading Pad
5. Aboveground Gasoline Storage Tanks



ADDITIONAL QUESTIONS?

Contact the [DEQ Water Bureau District Office](#) for information about salt storage requirements.

Contact the [DEQ Waste and Hazardous Materials Division District Office](#) for information about waste requirements.

Unsure who to call? Contact the Environmental Assistance Center at 800-662-9278 for referral.

This Guide to Salt Storage Requirements for Small Commercial Snow Removal Services was revised August 2007 by the Water Bureau and Environmental Science and Services Division. Regulations are subject to change. Reliance on information from this document is not usable as a defense in any enforcement action or litigation. Refer to the regulations and discuss questions about requirements with the regulating agency.

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