STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL COMPLIANCE OFFICE
SUITE 900 - JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-0334

TDOT STANDARD OPERATING PROCEDURE - *ENVIRONMENTAL*

NO.	Subject:
011	***SALT HANDLING AND SALT BRINE/CALCIUM CHLORIDE/LIQUID DE-ICER MANAGEMENT***

Reviewed and approved by:

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Status: Revised and re-approved with minor changes.	Version 6 – Replaces Version 5 dated March 2017

1.0 PURPOSE AND SCOPE

Although not a hazardous waste, concentrated discharges of salt and liquid de-icers can be very harmful to plant life, soil quality, surface water and groundwater quality, and metal and concrete surfaces. Salt, brine, and other liquid de-icers will readily dissolve when they come into contact with water, and they can then migrate long distances. Proper salt and de-icer handling and management practices are necessary to prevent adverse impact to the environment.

2.0 SALT HANDLING

Salt handling practices require methods that are both functional and protective of the environment. The provisions outlined below are to be followed to ensure environmental protection and cost-effective operations.

1. Keep salt dry. Salt accumulation should be stored under roof at all times.

2. Conduct loading operations inside the salt shed, whenever possible, to minimize impact from spillage and to reduce the exposure of salt to precipitation and wind.

3. Avoid overfilling salt sheds. To minimize releases from the salt shed, keep the first 5 feet of floor space inside the door opening free of salt.

4. Do not allow storm water to run into the salt shed. Ideally, the area surrounding the salt shed should slope away from the shed so that storm water cannot enter the shed. If necessary, berms and ditches should be used to divert storm water drainage away from the building.

5. Clean loose salt from trucks and loading equipment before these units exit the salt shed.

6. Any loose salt that can be exposed to storm water should be swept back into the salt shed.

7. Spilled salt material should be returned to the salt pile. All salt, including deliveries, must be under roof by the end of the business day.

3.0 LIQUID DE-ICER MANAGEMENT

The procedures outlined below should be implemented to prevent the release of brine, calcium chloride, and other liquid de-icers (e.g., beet juice, potato juice) to the environment.

1. Salt brine, calcium chloride, and other de-icers must not be discharged to the ground at TDOT facilities, except for necessary melting of snow and de-icing operations.

2. Avoid discharging salt brine, calcium chloride, and other de-icers to streams, ditches, storm sewers, or sanitary sewers.

3. Properly maintain salt brine and calcium chloride equipment to ensure proper function. Periodically inspect and replace any parts that show signs of corrosion.

4. Immediately repair leaks that are discovered in the de-icer system.

5. After use, either drain discharge and fill hoses into the salt brine tank or hang them so that salt brine does not discharge to the ground.

6. Care should be taken when filling trucks to avoid spillage.

7. All stationary liquid de-icer tanks should be individually valved to control the flow of brine in case of a break in the piping system. A type 316 stainless steel nipple must be installed by January 2018 for all valve assemblies at the tank's discharge.

8. To minimize torque forces on the valve that could potentially cause the tank to fail, a minimum 3-foot flex hose should be used after the valved outlet of all stationary liquid de-icer tanks. (Hoses must be installed by 2018.)

9. The amount of liquid de-icer stored onsite after the winter season should be reduced as much as practicable. Facilities should limit the number of full tanks of brine stored over the summer to reduce stress on the tanks and piping system and minimize the risk of accidental spills. Any full or nearly full tanks of liquid de-icer stored over the summer must be inspected at least weekly to verify they are not bulging, cracking, or otherwise showing signs of potential problems.

10. Liquid de-icer tanks should be located on the facility in a manner that will minimize the potential for any spill or release from flowing offsite and/or to waters of the state. Additional onsite BMPs (berms, retention ponds, dikes, etc.) may be required to ensure no brine leaves the facility in case of a tank failure. This is especially important for those facilities that include or border streams, ponds, wetlands, or other waters of the state.

11. Mixing bin (hopper) that are not under roof must be covered to prevent the accumulation of rainwater in the bin when not in use. Additionally, liquids from the mixing bin clean out should be captured and pumped back into brine tanks to avoid potential storm water impacts.

12. All releases of liquid de-icer that exceed 100 gallons and/or flow beyond the facility boundary must be reported to the TDOT Environmental Compliance Office immediately.

4.0 NEW FACILITY SITING OR EXPANSION

Prior to the siting or installation of any new salt or liquid de-icer facility, the TDOT Environmental Compliance Office must be contacted to evaluate potential storm water issues or sensitive habitat could be impacted by future facility operations. In addition, design and facility layout schematics must be provided to assess the potential for storm water impacts in areas adjacent to the facility.

In instances where facility upgrades or expansions to existing salt or liquid de-icing facilities are being planned, the TDOT Environmental Compliance Office must be contacted to evaluate potential storm water issues or sensitive habitat could be impacted by facility operations. These evaluations must be conducted to ensure compliance with the TDOT MS4/TSCS permit requirements and minimize potential storm water impacts.

5.0 FACILITY CONTACT INFORMATION

In order for response authorities or organizations to respond to releases that may occur after normal business hours, emergency contact signage must be in place and visible from the primary access gate(s). For facilities with more than one primary access gate, multiple signs will be required. Signs must be legible from the area immediately outside the primary access gate(s).