

Annual Report for Year 1 (2022-2023) of the Time Limited Water Quality Standard for Chloride

June 30, 2023

Prepared by: IMTT-Illinois Joliet



IMTT-Illinois is a member of the Chicago Area Waterways Chloride Workgroup/Lower Des Plaines Watershed Group



1.0 Introduction to Chloride Issue in CAWS/LDPR

This Pollutant Minimization Plan (PMP) has been prepared by IMTT-Illinois Joliet to reduce the environmental impacts from the organization's chloride related operations. IMTT-Illinois Joliet is a discharger covered under the Time Limited Water Quality Standard for Chloride for the Chicago Area Waterways System and Lower Des Plaines River watersheds. This PMP has been prepared to meet the requirements laid out in the Time Limited Water Quality Standard (TLWQS) for Chloride. The term of this PMP covers the first 5-years of the TLWQS period and will be updated following the re-evaluations at Years 4 ½, 9 ½, and 14 ½.

Chloride is a permanent pollutant. It does not degrade over time and continues to accumulate in the environment. Proactive measures to reduce the amount of chloride discharged can help reduce the impacts from chloride on receiving waterways and the environment. Chloride impacts aquatic life, vegetation, and infrastructure. As the chloride concentrations increase and our waters become saltier, aquatic and plant biodiversity decreases and native species are overtaken by salt tolerant invasive species.

Chlorides are commonly found in road salt, fertilizers, water softeners, dust suppressants, and certain industrial processes. Chloride-based deicers, like rock salt, are used on parking lots, sidewalks, and roads to provide safe surfaces to the public during the winter months. These deicers are one of most common sources of chloride in the Chicago region.

The water quality standard for chloride for the Chicago Area Waterway System (CAWS) was updated as part of the rulemaking process related to changing the designated use of the CAWS. The chloride standard was updated from 1,500 mg/L during the winter and 500 mg/L during the summer to 500 mg/L all year round. The change in the chloride water quality standard took effect in 2018. Because portions of the CAWS were not going to meet this new standard due to the need to maintain public safety on roads, highways, sidewalks and parking lots during the winter months, a joint submittal and supporting individual petitions were submitted between 2015 and 2018 to the Illinois Pollution Control Board for a variance from the chloride standard. The joint petition laid out best management practices that can be achieved by the petitioners to reduce their chloride use while maintaining public safety during winter storms. In addition to the CAWS, portions of the Lower Des Plaines River watershed were included as it receives water from the CAWS.

On November 4, 2021, the IPCB issued an Opinion and Order for a Time Limited Water Quality Standard (TLWQS) for Chloride for portions of the CAWS and Lower Des Plaines River watersheds. The TLWQS for Chloride watersheds are defined in the Opinion and Order as the Des Plaines River watershed from the Kankakee River to the Will County Line (except for the DuPage River watershed) and the CAWS watershed (except the North Branch Chicago River watershed upstream of the North Shore Channel and those portions of the watershed located in Indiana). This is a watershed-based approach to reduce the chloride concentrations in the CAWS and Lower Des Plaines River. The TLWQS for Chloride requires all dischargers covered under the TLWQS for Chloride to create PMPs and implement specific best management practices based on their operations to reduce their chloride discharges.

2.0 Organization, Facility Information

Agency Name:		
Facility Name:	Permit Number:	
Facility Address:		
City:	State:	Zip Code:

2.1 Level of Service for Winter Maintenance Activities

IMTT contracts with a single snow removal contractor to manage the snow at Joliet. The contractor is providing the following data:

- Date
- Snow Fall Amount
- Air Temperature
- Ground Temperature
- Salt Applied
- Other chemicals applied.

These parameters are evaluated at the end of each season and will be compared to previous years to determine how to optimize salt used.

3.0 Best Management Practices

Details regarding IMTT-Illinois Joliet’s implementation of the best management practices (BMPs) identified as part of the TLWQS for Chloride are included below.

Workgroup BMP

BMP	Agency Description of Current Implementation or Status Update to the Plan to Implement the BMP
The permittee must participate in a Chlorides workgroup for the CAWS or LDPR, depending on the watershed within which the facility’s discharge is located.	The most recent meeting attended was June 21, 2023

Salt Storage and Handling BMPs

BMP	Agency Description of Current Implementation or Status Update to the Plan to Implement the BMP
Store all salt on an impermeable pad that must be constructed to ensure that minimal stormwater is coming into contact with salt unless the salt is stored in a container that ensures	The salt is contained in a sealed container to eliminate the water getting in contact with stored salt.

<p>stormwater does not come into contact with the salt.</p>	
<p>Cover salt piles at all times except when in active use, unless stored indoors.</p>	<p>The salt is stored in a covered and closed container.</p>
<p>For working areas, provide berms and or sufficient slope to allow snow melt and stormwater to drain away from the area. If snow melt and stormwater cannot be drained away from the working area, channeling water to a collection point such as a sump, holding tank or lined basin for collection, discharge at a later time, use for prewetting, and use for make-up water for brine must be considered.</p>	<p>The snow melt is diverted to various ditches on the property and salt use is being minimized to limit the run-off.</p>
<p>MS4/CSO Only - Use deicing material storage structures for all communities covered under General Permit ILR40 for MS4 communities.</p>	
<p>Good housekeeping practices must be implemented at the site, including:</p> <ul style="list-style-type: none"> • cleanup of salt at the end of each day or conclusion of a storm event; • tarping of trucks for transportation of bulk chloride; • maintaining the pad and equipment; • good practices during loading and unloading; • cleanup of loading and spreading equipment after each snow/ice event; • a written inspection program for storage facility, structures and work area; • removing surplus materials from the site when winter activity finished where applicable; 	<p>At the completion of the salt dispersal, the area around the closed dumpster is cleaned and closed.</p> <p>The truck is tarped.</p> <p>All trucks go back to the contractor's shop and cleaned at their location.</p> <p>Contractor leaves the salt inside the container.</p> <p>Contractor is maintained storage container.</p>

<ul style="list-style-type: none"> • annual inspection and repairs completed when practical; • evaluate the opportunity to reduce or reuse the wash water. 	
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Winter Maintenance Operations BMPs

BMP	Agency Description of Current Implementation or Status Update to the Plan to Implement the BMP
Calibrate all salt spreading equipment at least annually before November 30th. Records of the calibration results must be maintained for each piece of spreading equipment.	Performed by contractor
Pre-wet road salt before use, either by applying liquids to the salt stockpile, or by applying liquids by way of the spreading equipment as the salt is deposited on the road.	Contractor uses liquid pre-treatment before a snow event so the salt usage is minimized.
Use equipment to measure the pavement temperature unless such equipment has already been installed on road salt spreading vehicles.	Temperature is taken at two locations, one at the gate house and one at the scale house and averaged.
Develop and implement a protocol to vary the salt application rate based on pavement temperature, existing weather conditions, and forecasted weather conditions.	The ambient temperature, pavement temperature and the amount of snow/ice is utilized to determine how much salt is applied.
Track and record salt quantity used and storm conditions from each call-out.	The contractor keeps track of the amount of salt and deice utilized and records weather condition.
Develop a written plan for implementation of anti-icing, with milestones. The plan should consider increased use of liquids (e.g., carbohydrate products) beginning with critical locations such as bridges over streams.	This will develop a written plan although the practices have been implemented.
Provide employees involved in winter maintenance operations	Will be implemented by contractor.

<p>with annual training before November 30th on best management practices in the use of road salt in operations, including the practice of plowing first and applying salt only after snow has been cleared.</p>	
<p>Be responsible for complying with all applicable BMPs even when deicing practices are contracted out and ensure that contractors are properly trained and comply with all applicable BMPs.</p>	<p>The contractor is being overseen by EHS personnel</p>
<p>Complete an annual report, as required by paragraph 3(B) of this order, which is standardized in an electronic format and submitted to the IEPA's website and to the watershed group.</p>	<p>This is done with the submission of this document</p>
<p>Obtain and put into place equipment necessary to implement all salt spreading/deicing measure specified in this BMP, such as any new or retrofitted salt spreading equipment necessary to allow for pre-wetting and proper rates of application.</p>	<p>Will be implemented by contractor</p>
<p>MS4/CSO/IDOT/TOLLWAY Only - Install equipment to measure the pavement temperature on the winter maintenance fleet for a sufficient number of vehicles to provide sufficient information to adjust application rates for the most efficient levels. Develop and complete a plan to equip the winter maintenance fleet before the first re-evaluation.</p>	
<p>MS4/CSO/IDOT/TOLLWAY Only - Before the first re-evaluation, develop a method for conducting a post-winter review to identify areas of success and areas in need of improvement.</p>	

<p>Items to be completed as part of the review must include, but are not limited to, an evaluation of each salt spreader's application rate, variations in application rates, and discussion of the variation compared to the recommended rates. Once developed, the review should occur annually in the spring/early summer following each winter season.</p>	
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Additional BMPs Identified for Agency/Facility

BMP	Agency Description of Current Implementation
Monitoring Air Temperatures	Checked and Recorded
Monitoring Ground Temperatures	Checked and Recorded
Amount of Salt Applied	Recorded
Amount of De-icer Applied	Recorded
Amount of Snow Fall	Recorded

3.1 Analysis of BMPs Implemented

As more data is available, contractor will be optimizing how much salt and/or deicer is utilized.

3.2 Analysis of Alternative Treatments or New Technology

None at this time as data needs to be developed and evaluated to optimize the salt/deicer utilized

4.0 Deicing/Anti-Icing Agents Used

Materials used by IMTT-Illinois Joliet for the 2022-2023 winter season are attached.

4.1 Application Rates

The application rates used by IMTT-Illinois Joliet for the 2022-2023 winter season are attached.

4.1.1 Application Rate Analysis

None at this time as data needs to be developed and evaluated to optimize the salt/deicer utilized.

4.2 Application Practices

IMTT-Illinois Joliet uses the following practices to apply deicing and anti-icing materials:

- Contractor truck with specifically designed for salt spreading and dispensing deicer liquid.

4.3 Call Outs

A total of 5.5 inches of snow was reported in Joliet for the 2022-2023 winter. There were 2 freezing rain event(s) and 14 snow event(s) for the 2022-2023 winter. IMTT-Illinois Joliet had 16 of call outs completed during the 2022-2023 winter. A log of all call outs completed by IMTT-Illinois Joliet are included as Appendix 3.

4.4 Use of Liquids

A brine solution was utilized to pre-treat the area prior to snow fall.

5.0 Training

Since IMTT-Illinois Joliet contracts the snow removal task, only the contractor was trained to keep appropriate records.

6.0 Deicing and Snow Removal Equipment and Maintenance

IMTT-Illinois Joliet uses an outside independent contractor for winter maintenance activities.

6.1 Description of Equipment Washing and Wash Water Collection

Contractor equipment washing is performed off-site and not on IMTT property.

7.0 Material Storage

IMTT-Illinois Joliet maintains a single storage area(s). Information regarding the storage area(s) is included in Appendix 6.

8.0 Capital Purchases

IMTT-Illinois Joliet's does not plan to make any capital purchases at this time.

8.1 Explanation of Capital Purchases Unable to Be Made According to the Reported Plan

There were no capital purchases made as an outside contractor is utilized for the winter services.

9.0 Environmental Monitoring Data

Chloride monitoring data is collected for the CAWS and Lower Des Plaines River watersheds per the IPCB order. The data is maintained by the workgroups. Chloride data for the CAWS is collected by MWRD for the CAWS watershed and provided to the workgroups as part of the annual reporting as required by the IPCB order. The Lower Des Plaines Watershed Group also maintains a USGS monitoring station in the Des Plaines River at Channahon, IL that collects continuous conductivity data to estimate chloride concentrations.

Chloride monitoring data reports are posted to <https://www.cawswatershed.org/reports/> and <https://ldpwatersheds.org/about-us/lower-des-plaines-watershed-group/our-work/chloride-tlwqs/>.

9.1 Organization Specific Chloride Monitoring Data

IMTT-Illinois Joliet collects chloride monitoring data as part of its NPDES effluent data and the data is available through the CDX system.

9.2 Changes to the Facility's NPDES Treatment Technologies for Chloride

10.0 Program Evaluation

10.1 Proposed Steps for the Coming Year

This will be developed as more data is obtained and evaluated.

11.0 Workgroup Participation

IMTT is participating is a member of the CAWs and is participating in the quarterly meetings.

Organization Name:

Chloride TLWQS Annual Report
Appendix 6 - Material Storage

Location of Storage Area	Material Stored (Rock Salt, Salt Brine, etc.)	Amount of Material Stored 2022-2023	Material stored under permanent cover? (yes/describe other)	Material stored in a fully enclosed structure? (yes/describe other)	Material stored on an impervious pad? (yes/describe other)	Good housekeeping practices followed at storage area? (yes/describe other)
Trailer	Salt	100	Yes			Yes