

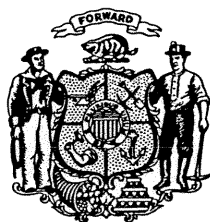
WISCONSIN LEGISLATIVE COUNCIL STAFF

LCRC
FORM 2

RULES CLEARINGHOUSE

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CLEARINGHOUSE REPORT TO AGENCY

[THIS REPORT HAS BEEN PREPARED PURSUANT TO S. 227.15, STATS. THIS IS A REPORT ON A RULE AS ORIGINALLY PROPOSED BY THE AGENCY; THE REPORT MAY NOT REFLECT THE FINAL CONTENT OF THE RULE IN FINAL DRAFT FORM AS IT WILL BE SUBMITTED TO THE LEGISLATURE. THIS REPORT CONSTITUTES A REVIEW OF, BUT NOT APPROVAL OR DISAPPROVAL OF, THE SUBSTANTIVE CONTENT AND TECHNICAL ACCURACY OF THE RULE.]

CLEARINGHOUSE RULE 98-196

AN ORDER to amend Tables 1 and 5 of chapter NR 105; and to create subchapter IV (title) of chapter NR 106, subchapter IV of chapter NR 211 and NR 215.06 (26), relating to regulating the discharge of chloride to surface waters of the state.

Submitted by **DEPARTMENT OF NATURAL RESOURCES**

12-10-98 RECEIVED BY LEGISLATIVE COUNCIL.

01-13-99 REPORT SENT TO AGENCY.

RNS:JES:kjf;kjf

LEGISLATIVE COUNCIL RULES CLEARINGHOUSE REPORT

This rule has been reviewed by the Rules Clearinghouse. Based on that review, comments are reported as noted below:

1. STATUTORY AUTHORITY [s. 227.15 (2) (a)]

Comment Attached YES NO

2. FORM, STYLE AND PLACEMENT IN ADMINISTRATIVE CODE [s. 227.15 (2) (c)]

Comment Attached YES NO

3. CONFLICT WITH OR DUPLICATION OF EXISTING RULES [s. 227.15 (2) (d)]

Comment Attached YES NO

4. ADEQUACY OF REFERENCES TO RELATED STATUTES, RULES AND FORMS
[s. 227.15 (2) (e)]

Comment Attached YES NO

5. CLARITY, GRAMMAR, PUNCTUATION AND USE OF PLAIN LANGUAGE [s. 227.15 (2) (f)]

Comment Attached YES NO

6. POTENTIAL CONFLICTS WITH, AND COMPARABILITY TO, RELATED FEDERAL
REGULATIONS [s. 227.15 (2) (g)]

Comment Attached YES NO

7. COMPLIANCE WITH PERMIT ACTION DEADLINE REQUIREMENTS [s. 227.15 (2) (h)]

Comment Attached YES NO

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CLEARINGHOUSE RULE 98-196

Comments

[NOTE: All citations to "Manual" in the comments below are to the Administrative Rules Procedures Manual, prepared by the Revisor of Statutes Bureau and the Legislative Council Staff, dated September 1998.]

2. Form, Style and Placement in Administrative Code

- a. Subchapter titles should be written in solid capital letters. [See s. 1.05 (2) (a), Manual.]
- b. The terms defined in s. NR 106.82 should be placed in alphabetical order. As such, the definition of "weekly average interim limitation" should follow the definition of "tier 3 source reduction" rather than being placed in s. NR 106.82 (5).
- c. Each subunit of a rule should begin with a capital letter. For example, see s. NR 106.82 (4) (a) and (b) and (5) (a) and (b).
- d. In the second sentence of s. NR 106.83, "may" should replace "has the authority to." The third sentence contains no substantive provisions and should either be eliminated or combined with the next sentence (e.g., "If a permittee has difficulty . . . , the department may . . .").
- e. The last sentence in s. NR 106.83 should use the defined term "calculated limitation" rather than the term "calculated effluent limitation."
- f. A hyphen should be inserted after "quality" in s. NR 106.85 (2) and elsewhere in the rule.

g. The phrase “but are not limited to” in s. NR 106.90 (1) (intro.), (2) (intro.) and (3) (intro.) is redundant and should be deleted from these three subsections.

h. Since the contents of s. NR 106.90 (1) (d) 1. and 2. and (e) 1. and 2. are identical, pars. (d) and (e) should be combined.

i. The department should review all of the definitions in s. NR 106.82 to ensure that they do not contain substantive provisions, pursuant to s. 1.01 (7) (b), Manual. For example, the acceptable procedures for calculating the upper 99th percentile of the permittee’s representative data under s. NR 106.82 (4) (a) and (5) (a) are substantive provisions. The definitions of tier 1, tier 2 and tier 3 source reduction in s. NR 106.82 (9) to (11) contain substantive criteria in establishing these types of source reduction activities. The clarity of the rule would be improved if these criteria were given in the appropriate introductions to the examples of these types of source reduction measures in s. NR 106.90 (1) (intro.), (2) (intro.) and (3) (intro.).

j. In several provisions in s. NR 106.90, the colon should be replaced by a comma. For example, see subs. (1) (c) and (f) and (2) (a).

4. Adequacy of References to Related Statutes, Rules and Forms

The reference in s. NR 106.82 (1) to the calculation of a water quality-based effluent limitation in accordance with s. NR 106.06 is vague; it should be to a more specific provision in s. NR 106.06. Similarly, the reference in s. NR 106.88 (6) to s. NR 106.07 should be to a more specific provision in s. NR 106.07.

5. Clarity, Grammar, Punctuation and Use of Plain Language

a. The department should review the use of the undefined term “voluntary source reduction activities” in the definitions in s. NR 106.82 (9) to (11) to determine if this term should be defined in the rule or if a different term should be used to improve the clarity of the rule. In particular, the use of “voluntary” is potentially confusing. Are these activities voluntary, that is completely discretionary for the permittee? Are these activities voluntary for persons using or discharging to the facilities of the permittee, such as a publicly owned treatment works user?

b. The department should review the treatment of lists of provisions in the rule to ensure that they are clear, grammatically correct and conform to preferred drafting style. Under the preferred drafting style, an introduction to a list indicates whether the elements of the list are inclusive or exclusive, i.e., “. . . all of the following:”, or “any of the following:”, and each element ends with a period. This style was not followed in a number of provisions of the rule, including s. NR 106.89 (3) and the various lists in s. NR 106.90.

6. Potential Conflicts With, and Comparability to, Related Federal Regulations

Since department staff indicates that the U.S. Environmental Protection Agency has established acute and chronic toxicity criteria for chloride, the analysis to the rule should identify the specific related federal regulations and provide an analysis of how the state rule and federal regulations conflict or compare, so that a reader will be able to determine the potential conflicts with, and comparability to, related federal regulations.

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board proposes an order to amend Tables 1 and 5 of NR 105; and to create NR 106 subch. IV (title), 211 subch. IV, and 215.06(26) relating to regulating the discharge of chloride to surface waters of the state.

WT-54-98

Analysis Prepared by Department of Natural Resources

Statutory authority: ss. 227.11(2), 281.15, 283.13, and 283.21(1)(a), Stats.
Statutes interpreted: ss. 281.15 and 283.13, Stats.

This proposal entails changes to chs. NR 105, 106, 211 and 215 of the Wisconsin Administrative Code as follows:

Tables 1 through 6 of Chapter NR 105 list the toxicity criteria for protection of fish and aquatic life. These criteria are used for establishing limitations for pollutants in wastewater discharge permits. The Department has recently derived the toxicity criteria for chloride. Therefore, this substance and its criteria need to be added to Tables 1 and 5 to help ensure the protection of fish and aquatic life.

Chapter NR 106 contains procedures for the calculation of water quality-based effluent limitations for toxic and organoleptic substances. A new subchapter has been added to this rule which contains the procedure for regulating the discharge of chloride to surface waters of the state.

Chapter NR 211 gives publicly owned treatment works (POTWs) the authority to regulate non-domestic (i.e. commercial and industrial) sources of pollutants. A new subchapter has been added which broadens the authority of POTWs to regulate domestic sources of chloride.

Chapter NR 215 is simply a list of toxic pollutants. Chloride has been added to the list.

*How relate to Federal?
1aew*

SECTION 1. NR 105 Table 1 is amended to read:

Table 1

Acute Toxicity Criteria for Substances With Toxicity Unrelated to Water Quality
(in ug/L except where indicated)

Substance	Cold Water	Warm Water Sportfish, Warm Water Forage, and Limited Forage Fish	Limited Aquatic Life
Arsenic (+3)*	339.8	339.8	339.8
Chromium (+6)*	16.02	16.02	16.02
Mercury (+2)*	0.83	0.83	0.83
Cyanide, free	22.4	45.8	45.8
<u>Chloride</u>	<u>757 mg/L</u>	<u>757 mg/L</u>	<u>757 mg/L</u>
Chlorine*	19.03	19.03	19.03
Gamma - BHC	0.96	0.96	0.96
Dieldrin	0.24	0.24	0.24
Endrin	0.086	0.086	0.12
Toxaphene	0.73	0.73	0.73
Chlorpyrifos	0.041	0.041	0.041
Parathion	0.057	0.057	0.057

Note: * - Criterion listed is applicable to the "total recoverable" form except for chlorine which is applicable to the "total residual" form.

SECTION 2. NR 105 Table 5 is amended to read:

Table 5

Chronic Toxicity Criteria Using Acute-Chronic Ratios for Substances with Toxicity Unrelated to Water Quality
(all in ug/L except where indicated)

Substance	Cold Water	Warm Water Sportfish, Warm Water Forage, and Limited Forage Fish	Limited Aquatic Life
Arsenic (+3)*	148	152.2	152.2
Chromium (+6)*	10.98	10.98	10.98
Mercury (+2)*	0.44	0.44	0.44
Cyanide, free	5.22	11.47	11.47
<u>Chloride</u>	<u>395 mg/L</u>	<u>395 mg/L</u>	<u>395 mg/L</u>
Chlorine*	7.28	7.28	7.28
Dieldrin	0.055	0.077	0.077
Endrin	0.072	0.072	0.10
Parathion	0.011	0.011	0.011

Note: * Criterion listed is applicable to the "total recoverable" form except for chlorine which is applicable to the "total residual" form.

SECTION 3. NR 106, subch. IV (title) is created to read:
[Drafter's Note: Subchapters I, II & III are created in Board Order No. WT-35-98]

Subchapter IV - Effluent Limitations for Chloride Discharges — *formats*

NR 106.80 Purpose. The purpose of this subchapter is to specify how the department will regulate the discharge of chloride to surface waters of the state.

NR 106.81 Applicability. The provisions of this subchapter are applicable to point sources which discharge wastewater containing chloride to surface waters of the state. The provisions of this subchapter are not applicable to discharges of storm water run-off.

NR 106.82 Definitions. In this subchapter:

- CK*
4-20
- (1) "Calculated limitation" means a chloride *water quality* based effluent limitation derived in accordance with s. NR 106.06. *← more specific*
- (2) "Consistently meet" means that 95% of the representative effluent data are less than the calculated limitation.
- (3) "DIR" means demand initiated regeneration.
- (4) "Daily maximum interim limitation" means an effluent limitation calculated by the department which may be either: *of the fall...*
- (a) the upper 99th percentile of the permittee's representative data available to the department, calculated in accordance with s. NR 106.05 (5), or
- (b) a value no greater than 105 % of the permittee's highest representative effluent datum.
- Alpha order*
substance in
- (5) "Weekly average interim limitation" means an effluent limitation calculated by the department which may be either:
- (a) the upper 99th percentile of the permittee's 4-day average of the representative data available to the department, calculated in accordance with s. NR 106.05 (5), or
- (b) a value no greater than 105 % of the permittee's calculated highest weekly average of the representative effluent data.
- (6) "Reasonably meet" means that all of the permittee's representative effluent data would, using appropriate statistical techniques, be expected to be less than or equal to the target limitation following the completion of all of the source reduction efforts required by the permit.
- (7) "Representative effluent data" means data, above the level of detection, which is not serially correlated and which represents normally expected effluent concentrations of chloride, collected during a period that can represent current or expected operations, or both, within the term of the permit.
- (8) "Target limitation" means an effluent limitation which the permittee can reasonably meet within the term of the permit, following implementation of appropriate voluntary source reduction activities.
- (9) "Tier 1 source reduction" means those voluntary source reduction activities that identify and quantify chloride and softened water sources and usage, educate users and system operators on the need to minimize salt and softened water demands and promote better housekeeping practices that will reduce chloride- and softened water consumption, and other activities similar in nature.

(10) "Tier 2 source reduction" means those voluntary source reduction activities that improve and optimize equipment and processes, encourage restricted chloride use by users, eliminate wasteful practices and establish recycling practices where feasible, and other activities similar in nature.

(11) "Tier 3 source reduction" means those voluntary source reduction activities that evaluate the feasibility of replacing or upgrading equipment and processes or evaluate the feasibility of using alternative technologies or processes, and other activities similar in nature.

(12) "WPDES" means Wisconsin pollutant discharge elimination system, which is a program for permitting wastewater discharges.

may
NR 106.83 General. The department shall evaluate the need to establish effluent limitations for chloride whenever representative effluent data indicate that the discharge from a point source contains chloride. If the department determines that water quality based effluent limitations for chloride are needed, it has the authority to place calculated limitations in a WPDES permit. The department recognizes, however, *des* that some permittees may have difficulty meeting such calculated limitations. The department may allow implementation of voluntary source reduction activities, as specified in a WPDES permit, and the imposition of interim and target limitations, in lieu of immediate compliance with the calculated limitations. If the permittee and the department agree on the inclusion of voluntary source reduction activities and the imposition of an interim limitation and a target limitation in its permit, those activities and the interim and target limitations will become permit requirements. If the permittee and the department cannot agree on voluntary source reduction activities to be included as permit requirements, those activities may not be included in the permit. If the permittee and the department cannot agree on an interim limitation and a target limitation to be included as permit requirements those limitations may not be included in the permit. If the permittee and the department cannot agree on voluntary source reduction activities and both an interim limitation and a target limitation to be included as permit requirements, the department may instead include a calculated effluent limitation in the permit.

2- WPDES
NR 106.84 Compliance with Wisconsin water quality antidegradation rules when reissuing a permit. Chapter NR 207 does not apply in those instances in which a reissued permit includes effluent limitations for chloride which represent a lowering of concentration as compared to the interim limitation in the previous permit.

NR 106.85 Determination of the necessity for water quality based effluent limitations. (1) The department shall determine the need for chloride water quality based effluent limitations for point source discharges whenever the discharges from the point sources contain chloride at concentrations or loadings which do not, as determined by any method in this section, meet the applicable water quality standards specified in chs. NR 102 to 105.

see p. 13
(2) When considering the necessity for water quality based effluent limitations, the department shall consider in-stream bio-survey data and data from ambient toxicity analyses whenever the data are available.

ck
(3) When considering the necessity for chloride water quality based effluent limitations, the department shall compare the upper 99th percentile of available representative discharge concentrations to the calculated limitations, pursuant to s. NR 106.05(4).

NR 106.86 Monitoring. Notwithstanding any other section in this subchapter, the department shall determine on a case-by-case basis the chloride monitoring frequency to be required in the permit.

2- point
NR 106.87 Establishment of effluent limitations. (1) **CALCULATED LIMITATIONS.** If water quality based effluent limitations for chloride are deemed necessary, those limitations shall be derived pursuant to s. NR 106.06 and, for the purposes of this subchapter, shall be labeled "calculated limitations".

ck
(2) **INTERIM LIMITATION.** The interim limitation may be expressed as both a daily maximum and a weekly average, calculated in accordance with ss. NR 106.82 (4) and (5).

(3) **TARGET LIMITATION.** The target limitation may be expressed as both a daily maximum and a weekly average. The department and the permittee shall consider both the implementation and the anticipated effectiveness of appropriate voluntary source reduction activities in order to determine a target limitation which is reasonably achievable within the term of the permit.

~~NR 106.88~~ **NR 106.88 Imposition of and compliance with effluent limitations.** (1) If chloride water quality based effluent limitations are deemed to be necessary in accordance with s. NR 106.85 and the permittee's representative effluent data indicate that the permittee can consistently meet the calculated limitation, the department may include the calculated limitations in the permit with an appropriate compliance schedule.

(2) If chloride water quality based effluent limitations are deemed to be necessary, but the permittee's representative effluent data indicate that consistent compliance with a calculated limitation is unlikely, the provisions of s. NR 106.83 are applicable and the department may instead include all of the following in the permit:

(a) Chloride monitoring.

(b) An interim limitation for chloride which is effective on the date of permit issuance.

(c) Tier 1 source reduction.

(d) A target limitation with an appropriate compliance schedule, which is effective on the last day of the permit.

(e) If appropriate, either tier 2 or tier 3 source reduction if the department believes that any of the additional conditions in the tier 2 or tier 3 source reduction activities are reasonable and practical within the term of the permit.

(3) Interim limitations and target limitations established according to this subchapter shall be expressed in the permit as a concentration limitation, in units of mg/L or equivalent units. Pursuant to s. NR 106.07(2), calculated limitations established in accordance with this subchapter shall be expressed in the permit both as a concentration limitation, in units of mg/L or equivalent units, and as a mass limitation, in units of Kg/d or equivalent units.

(4) Effluent limitations based on an acute criterion shall be expressed in permits as daily maximum limitations; and effluent limitations based on a chronic criterion shall be expressed in permits as weekly average limitations.

(5) A determination of compliance with interim, target and calculated limitations shall be based upon 24-hour composite samples.

(6) Mass limitations shall be determined for calculated limitations pursuant to s. NR 106.07. *more specific*

NR 106.89. Alternative whole effluent toxicity monitoring and limitations for dischargers of chloride.

(1) In addition to interim, target, and calculated water quality-based effluent limitations for chloride, the department may establish whole effluent toxicity testing requirements and limitations pursuant to ss. NR 106.08 and NR 106.09.

(2) Acute whole effluent toxicity testing requirements and acute whole effluent toxicity limitations may be held in abeyance by the department until source reduction actions are completed if:

(a) the permittee can demonstrate to the satisfaction of the department that the effluent concentration of chloride exceeds 2,500 mg/L (or)

(b) the permittee can demonstrate to the satisfaction of the department that the effluent concentration of chloride is less than 2,500 mg/L, but in excess of the calculated acute water quality-based effluent limitation, and additional data are submitted which demonstrate that chloride is the sole source of acute toxicity.

(3) Chronic whole effluent toxicity testing requirements and chronic whole effluent toxicity limitations may be held in abeyance by the department until source reduction actions are completed if:

(a) the permittee can demonstrate to the satisfaction of the department that the effluent concentration of chloride exceeds two times the calculated chronic water quality-based effluent limitation, or

(b) the permittee can demonstrate to the satisfaction of the department that the effluent concentration of chloride is less than two times the calculated chronic water quality-based effluent limitation, but in excess of the calculated chronic water quality-based effluent limitation, and additional data are submitted which demonstrate that chloride is the sole source of chronic toxicity.

(4) Following the completion of source reduction activities, the department shall evaluate the need for whole effluent toxicity monitoring and limitations.

5. Source to, the following: NR 106.90 Source reduction. (1) Tier 1 source reduction measures may include, but are not limited

(a) For POTWs:

1. Identify sources of chloride to the sewer system.
2. Educate homeowners on the impact of chloride from residential softeners, discuss options available for increasing softener salt efficiency, and request voluntary reductions.
3. Recommend residential softener tune-ups on a voluntary basis.
4. Request voluntary support from local water softening businesses in the efforts described in subds. 2. and 3.
5. Educate licensed installers and self-installers of softeners on providing optional hard water for outside faucets for residences.
6. Request voluntary reductions in chloride input from industrial and commercial contributors.
7. Where a public water utility has been identified as a significant contributor of chloride to the sewer system, request that the water utility conduct activities listed in par. (b).

(b) For direct-discharging municipal or commercial water softening plants:

1. Identify the users of soft water or the processes using soft water, and the amounts they use.
2. Determine which users or processes can tolerate unsoftened water, and determine their impact on demand.

3. Determine which users can close-loop their once-through cooling system or which processes can be close-looped, and determine their impact on demand.

4. Seek voluntary demand reductions.

(c) For dairies: Train plant personnel to be more aware of salt conservation, emphasizing simple, cost effective housekeeping measures. For example, spilled salt can be cleaned up as a solid waste rather than flushed down the floor drain.

(d) For those facilities which process vegetables:

- 2
control
1. Train personnel as described in par. (c) in housekeeping measures.
 2. Optimize softener operation to ensure the appropriate regeneration interval and salt dosage are used.

(e) For those facilities which process meats:

1. Train personnel as described in par. (c).
2. Optimize softener operation to ensure the appropriate regeneration interval and salt dosage are used.

(f) For any other facility not listed in pars.(a) to (e): conduct activities that identify and quantify chloride and softened water sources and usage and educate personnel on appropriate housekeeping practices and the need to minimize salt and softened water demands.

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(2) Tier 2 source reduction measures may include, but are not limited to, the following:

(a) For POTWs: institute sewer use ordinances that:

5-
which
voluntary
in 1 to 3?

1. Require significant industrial and commercial contributors to evaluate their water treatment systems with regard to softened water requirements, with the results of that evaluation being the basis for potential restrictions of chloride inputs.

2. Mandate a DIR and high salt efficiency standard for new residential softeners.

3. Mandate participation in a residential softener tune-up program, which involves qualified periodic servicing to ensure proper control settings and adjustments.

4. Where a public water utility has been identified as a significant contributor of chloride to the sewer system, request that the water utility conduct activities listed in par. (b).

(b) For direct-discharging municipal or commercial water softening plants:

1. Optimize softener operation to ensure the appropriate regeneration interval and salt dosage are used.

2. If the regeneration is manual or timer-initiated, switch to a DIR controller.

3. Evaluate the feasibility of brine reclamation.

(c) For dairies:

14

1. Improve the handling of salt brines and the handling of cheese into and out of brine systems. Consider capital improvements such as automating the brine system, properly designed drip pans and splash guards.

2. Optimize softener operation to ensure the appropriate regeneration interval and salt dosage are used.

3. If the regeneration is manual or timer-initiated, evaluate the feasibility of switching to a DIR controller.

4. Evaluate the feasibility of softener brine reclamation.

5. Determine which subprocesses can tolerate unsoftened water, and make appropriate changes.

6. Determine whether once-through cooling systems can be close-looped, and make appropriate changes.

7. For plants that condense whey, evaluate the feasibility of using condensate of whey (COW) water for the first rinse for clean-in-place (CIP) systems and for boiler makeup water.

(d) For those facilities which process vegetables:

1. If the regeneration is manual or timer-initiated, evaluate the feasibility of switching to a DIR controller.

2. Evaluate the feasibility of softener brine reclamation.

3. Investigate the feasibility of using a phosphonate additive instead of softening the cooling water.

4. Evaluate the feasibility of reusing once-through cooling water as boiler make-up.

5. Investigate the feasibility of using unsoftened water for container fill.

(e) For those facilities which process meats:

1. If the regeneration is manual or timer-initiated, evaluate the feasibility of switching to a DIR controller.

2. Evaluate the feasibility of softener brine reclamation.

(f) For any other facility not listed in pars. (a) to (e): conduct activities that improve and optimize equipment and processes, eliminate wasteful practices and establish recycling practices to achieve chloride reductions.

(3) Tier 3 source reduction measures may include, but are not limited to, the following:

(a) For POTWs, where residential point-of-use softening is the primary chloride input:

1. Evaluate the requirement for new and replacement softeners to be metered demand type, with a higher, greater than 3350 grains of hardness exchange per pound of salt, efficiency capability.

Include Tier 2 activities

2. Evaluate the imposition of installation restrictions so that outside hose bibs are on unsoftened water. If restrictions are imposed, new homes and those in real estate transfers should be required to have plumbing restrictions for hard water by-passes, and the requirement should apply to self-installed equipment as well.

(b) For POTWs, where a central water supply softener is the primary chloride input, conduct activities listed in par. (c).

(c) For direct-discharging municipal or commercial water softening plants:

1. Evaluate the feasibility of achieving greater salt efficiencies, greater than 3350 grains of hardness exchange per pound of salt.

2. Evaluate softening alternatives that replace the sodium cycle ion exchange method of softening.

3. Blend softened and unsoftened water to strike a balance between delivered water quality and environmental protection.

(d) For dairies:

1. For plants that make brine salted cheeses, evaluate the feasibility of membrane filtration for reconditioning the brine so that it can be reused.

2. For plants that make brine salted cheeses, evaluate the feasibility of using a no-brine make procedure in which salt is added directly to curd during the manufacturing procedure, thereby reducing salt discharges from spent brines.

(e) For those facilities which process vegetables:

1. Evaluate the feasibility of eliminating brine flotation for quality grading, if applicable.

2. Evaluate the feasibility of installing a closed-loop system for cooling water.

3. Evaluate the feasibility of installing a brine recovery and reuse system for reducing salt waste at the point of supplying flavorings to containers.

(f) For those facilities which process meats:

1. Investigate the feasibility of replacing brine chills with air, water, or air-water chills.

2. Reduce drainback through operational and equipment improvements.

3. Investigate the feasibility of chill brine reconditioning and reuse.

4. Evaluate the feasibility of reusing once-through cooling water, or installing a closed-loop cooling water system.

5. Evaluate phosphonate additives instead of softened water.

(g) For any other facility not listed in pars. (a) to (f): Evaluate the feasibility of replacing or upgrading equipment and processes, and the use of alternative softening technologies to affect chloride reductions.

(4) **SOURCE REDUCTION REPORTING.** Following the completion of tier 1, 2 or 3 source reduction activities specified in the permit, but no later than 6 months prior to permit expiration, the permittee shall file a written report to the department documenting the current reduction as well as the anticipated future reduction in salt usage and chloride effluent concentrations.

CK
NR 106.91 **Publicly owned treatment works which accept wastewater from public water systems treating water to meet primary safe drinking water act standards.** Publicly owned treatment works which accept wastewater from a public water system treating water to meet the primary maximum contaminant levels specified in ch. NR 809, if not able to meet the calculated limitation, may be given an interim limitation, a target limitation and appropriate source reduction requirements, pursuant to s. NR 106.83. No calculated limitation, interim limitation, target limitation, or source reduction requirement shall interfere with the attainment of the primary maximum contaminant levels specified in ch. NR 809.

CK
NR 106.92 **Authority of a publicly owned treatment works to regulate chloride discharges.** A publicly owned treatment works has the authority to regulate the discharge of chloride as enumerated in s. NR 211.40

NR 106.93 **New discharges.** Any point source which has not been authorized under a WPDES permit prior to the effective date of this subchapter [revisor insert date] shall be required to meet the calculated limitations. Relocation of an existing discharge which was issued a WPDES permit prior to the effective date of this subchapter [revisor insert date] may not be considered a new discharge.

CK
NR 106.94 **Relocation of an existing discharge.** An existing discharge which was issued a Wisconsin Pollutant Discharge Elimination System permit prior to the effective date of this subchapter [revisor insert date], and which is relocated after the effective date of this subchapter [revisor insert date], may be subject to voluntary source reduction activities and both an interim limitation and a target limitation pursuant to s. NR 106.83 if the provisions of ch. NR 207 are met. Relocation includes the diversion of a discharge from a land treatment system to a surface water.

CK
NR 106.95 **Multiple discharges.** The provisions of s. NR 106.11 are applicable to multiple discharges of chloride.

CK
NR 106.96 **Analytical methods and laboratory requirements.** The provisions of s. NR 106.14 regarding analytical methods, sample handling and laboratory requirements are applicable to discharges of chloride.

SECTION 4. NR 211, subch. IV is created to read:

Subchapter IV - Regulation of Chloride Sources

NR 211.40 **POTW authority to regulate chloride discharges from all sources.** Notwithstanding all other provisions of this chapter, a POTW may develop and enforce specific standards or requirements, including but not limited to source reduction activities enumerated in s. NR 106.90, to regulate the discharge of chloride from industrial, residential and commercial sources. The POTW's authority includes the authority to regulate all industrial, commercial and domestic wastewater containing chloride.

SECTION 5. NR 215.06(26) is created to read:

CK ^ (26) Chloride

The foregoing rule was approved and adopted by the State of Wisconsin Natural Resources Board on _____

The rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22(2)(intro.), Stats.

Dated at Madison, Wisconsin _____

RESOURCES

(SEAL)

STATE OF WISCONSIN

DEPARTMENT OF NATURAL

BY

George E. Meyer, Secretary

State of Wisconsin
Department of Natural Resources

SEP 08 REC'D

SEP 08 1999

NOTICE TO PRESIDING OFFICERS
OF PROPOSED RULEMAKING

Pursuant to s. 227.19, Stats., notice is hereby given that final draft rules are being submitted to the presiding officer of each house of the legislature. The rules being submitted are:

Natural Resources Board Order No. WT-54-98

Legislative Council Rules Clearinghouse Number 98-196

Subject of Rules Regulating the discharge of chlorides to surface waters of the state.

Date of Transmittal to Presiding Officers September 7, 1999

Send a copy of any correspondence or notices pertaining to this rule to:

Carol Turner, Rules Coordinator
DNR Bureau of Legal Services
LC/5, 101 South Webster

266-1959

REPORT TO LEGISLATURE

NR 105, 106, 211 and 215, Wis. Adm. Code
Regulating the discharge of chloride to surface waters of the state

Board Order No. WT-54-98
Clearinghouse Rule No. 98-196

Statement of Need

Chloride is a pollutant in fresh surface waters. Scientific data shows that excessive concentrations of chloride affect the survival, growth and reproduction of freshwater aquatic life. Presently, Wisconsin has no policy for regulating chloride discharges to surface waters of the state for protection of aquatic life. The Department has reviewed the available toxicity data to derive water quality criteria for chloride using the procedures in ch. NR 105. These criteria are added to the lists of water quality criteria in ch. NR 105. These values are implemented as limits in WPDES permits using the procedures in ch. NR 106. Limitations are necessary in order to comply with federal regulations and, more importantly, to protect aquatic life.

The recommended chloride rule represents a creative approach to permitting wastewater discharges for existing facilities, in that progress toward attainment of water quality standards may be implemented through voluntary source reduction measures. Changes to ch. NR 211 allow municipalities to exercise control over the input of chlorides from domestic sources.

Modifications as a Result of Public Hearing

A streamlined chloride variance procedure was incorporated into the rule. The chloride variance will be less costly and time consuming than the variance under s. 283.15, Stats.

Section NR 106.83 was modified to clarify that interim and target limitations are available for subsequent permit terms.

NR 106.80 was modified to clarify that the use of ion exchange water softeners is not prohibited.

At the Natural Resources Board, procedures for "target values" were added to NR 106. Target values are defined in s. NR 106.82(8) to mean "an effluent concentration of chlorides which a permittee may be expected to reasonably meet following implementation of appropriate voluntary source reduction activities. A target value is not an enforceable limitation under the terms of the permit program, but establishes a measure of progress of source reduction activities.

Appearances at the Public Hearing and Their Position

January 11, 1999 – Rhinelander – no appearances

January 12, 1999 – Eau Claire

In support – none

In opposition – none

As interest may appear:

Ellen Bragg, Cargill Salt Division, P.O. Box 5621, Minneapolis, MN 55440
Bernard W. Erdman, The Toro Company, 200 Sime Avenue, Tomah, WI 54660
Paul Schacht, Ecolab, Inc., 840 Sildey Memorial Highway, St. Paul, MN 55118
Duane Poppo, 1300 W. Clairemont Avenue, Eau Claire, WI 54703
Robert A. Freemore, President, Divergent Strategies, 1969 Heath Ave. N, Oakdale, MN 55128
Paul R. Zattoni, Associated Milk Producers, Inc., 315 N. Broadway, New Ulm, MN 56073
Gary Rimmey, 14810 Woodruff Road, Wayzata, MN 55391

January 13, 1999 – Madison

In support – none
In opposition – none

As interest may appear:

Mark D. Anderson, Madison Metro. Sewerage District, 1610 Moorland Road, Madison, WI 53713
John Exner, Midwest Food Processors Assoc., P.O. Box 1297, Madison, WI 53701
David Vogl, Midwest Food Processors Assoc., 600 N. 15th Street, Rochelle, IL 61068

January 19, 1999 – Milwaukee

In support – none

In opposition:

Paul G. Kent, Municipal Environmental Group, 14 S. Carroll St., Madison, WI 53703
George Stockman, U. S. Leather, 1403 W. Bruce Street, Milwaukee, WI 53204

As interest may appear:

Thomas P. McElligott, 411 E. Wisconsin, Milwaukee, WI 53202
Louis Mentzer, Cargill Salt, 1835 S. Carferry Drive, Milwaukee, WI 53207
Marvin E. Pohl, Cargill Salt, W5557 Hickory Drive, Appleton, WI 54915
Tim Young, City of Waukesha, 600 Sentry Drive, Waukesha, WI 53186
Jim M. Wolf, IMC Salt, Inc., 8300 College Blvd., Overland Park, KS 66210
Dale Buser, Northern Environmental, 1214 West Venture Court, Mequon, WI 53092
Gary C. Smith, City of Waukesha, 600 Sentry Drive, Waukesha, WI 53186
Mark Surwill, Heart of the Valley Metro Sewerage District, 801 Thilmany Road, Kaukauna, WI

January 19, 1999 – Green Bay

In support – none
In opposition – none

As interest may appear:

Joe Kramer, Badger Lab, 501 W. Bell Street, Neenah, WI 54956
Glen H. Geurts, Heart of the Valley Metro Sewerage District, 810 Quiott St., Kaukauna, WI
John M. Johnson, Heart of the Valley Metro Sewerage District, 801 Thilmany Rd., Kaukauna, WI
Geroge Znoj, Saputo Cheese USA, 6869 Metropolitan Blvd East, St. Leonard, Quebec, Canada

John Kennedy, Green Bay Metro Sewerage District, P.O. Box 19015, Green Bay, WI 54307
Michael C. Brennenstuhl, Saputo Cheese USA, P.O. Box 198, Lena, WI 54139

Response to Legislative Council Rules Clearinghouse Report

The recommendations were accepted. The Rules Clearinghouse asked whether voluntary source reduction activities apply to persons using or discharging to a permittee. The response is that, if a POTW chooses to be regulated by a source reduction based permit, those source reduction activities mutually agreed upon prior to permit issuance become permit requirements. The POTW may subsequently impose source reduction measures upon its users.

Final Regulatory Flexibility Analysis

Costs associated with the chloride rule are difficult to determine due to the case-by-case nature of implementation. For example, source reduction measures that would be indicated for one vegetable processing facility may not be at all applicable for another vegetable processor, even though they are both in the same discharge category.

It should also be noted that plant efficiency improvements invariably result from undertaking source reduction programs intended for improving effluent quality. That is to say, while there may be some capital expenditures for gaining compliance with effluent limitations, the "investment" is typically paid back quickly. This is the other reason why it is difficult to determine costs associated with the chloride rule.

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD
AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board proposes an order to amend Tables 1 and 5 of NR 105; and to create NR 106 subch. IV (title), 211 subch. IV, and 215.06(26) relating to regulating the discharge of chloride to surface waters of the state.

WT-54-98

Analysis Prepared by Department of Natural Resources

Statutory authority: ss. 227.11(2), 281.15, 283.13, and 283.21(1)(a), Stats.
Statutes interpreted: ss. 281.15 and 283.13, Stats.

This proposal entails changes to chs. NR 105, 106, 211 and 215 of the Wisconsin Administrative Code as follows:

Tables 1 through 6 of Chapter NR 105 list the toxicity criteria for protection of fish and aquatic life. These criteria are used for establishing limitations for pollutants in wastewater discharge permits. The Department has derived the toxicity criteria for chloride, which are 757 mg/L acute and 395 mg/L chronic. Therefore, this substance and its criteria need to be added to Tables 1 and 5 to help ensure the protection of fish and aquatic life. The EPA criteria for chloride are 860 mg/L acute and 230 mg/L chronic, and can be found in the EPA document entitled 1988 Ambient Water Quality Criteria for Chloride (pub. no. EPA 440/5-88-001). There are three reasons for the difference between the EPA and Wisconsin criteria. First, the Wisconsin criteria were developed using data in the 1988 EPA document and those data generated since 1988. Secondly, some of the EPA data could not be used because the species did not reflect those which are indigenous to Wisconsin. Lastly, the criteria generation protocol contained in ch. NR 105, Wis. Adm. Code, is slightly different than the protocol EPA uses.

Chapter NR 106 contains procedures for the calculation of water quality-based effluent limitations for toxic and organoleptic substances. A new subchapter has been added to this rule which contains the procedure for regulating the discharge of chloride to surface waters of the state.

Chapter NR 211 gives publicly owned treatment works (POTWs) the authority to regulate non-domestic (i.e. commercial and industrial) sources of pollutants. A new subchapter has been added which broadens the authority of POTWs to regulate domestic sources of chloride.

Chapter NR 215 contains lists of toxic, conventional, and nonconventional pollutants. Chloride has been added to the list of nonconventional pollutants. To improve the clarity of the title, commas were added. The title of ch. NR 215 now reads: "List of Toxic, Conventional, and Nonconventional Pollutants".

SECTION 1. NR 105 Table 1 is amended to read:

Table 1
Acute Toxicity Criteria for Substances With Toxicity Unrelated to Water Quality
(in ug/L except where indicated)

Substance	Cold Water	Warm Water Sportfish, Warm Water Forage, and Limited Forage Fish	Limited Aquatic Life
Arsenic (+3)*	339.8	339.8	339.8
Chromium (+6)*	16.02	16.02	16.02
Mercury (+2)*	0.83	0.83	0.83
Cyanide, free	22.4	45.8	45.8
Chloride	<u>757,000</u>	<u>757,000</u>	<u>757,000</u>
Chlorine*	19.03	19.03	19.03
Gamma BHC	0.96	0.96	0.96
Dieldrin	0.24	0.24	0.24
Endrin	0.086	0.086	0.12
Toxaphene	0.73	0.73	0.73
Chlorpyrifos	0.041	0.041	0.041
Parathion	0.057	0.057	0.057

Note: * Criterion listed is applicable to the total recoverable form except for chlorine which is applicable to the total residual form.

SECTION 2. NR 105 Table 5 is amended to read:

Table 5
Chronic Toxicity Criteria Using Acute-Chronic Ratios for Substances with Toxicity Unrelated to
Water Quality (all in ug/L)

Substance	Cold Water	Warm Water Sportfish, Warm Water Forage, and Limited Forage Fish	Limited Aquatic Life
Arsenic (+3)*	148	152.2	152.2
Chromium (+6)*	10.98	10.98	10.98
Mercury (+2)*	0.44	0.44	0.44
Cyanide, free	5.22	11.47	11.47
Chloride	<u>395,000</u>	<u>395,000</u>	<u>395,000</u>
Chlorine*	7.28	7.28	7.28
Dieldrin	0.055	0.077	0.077
Endrin	0.072	0.072	0.10
Parathion	0.011	0.011	0.011

Note: * Criterion listed is applicable to the total recoverable form except for chlorine which is applicable to the total residual form.

SECTION 3. NR 106, subch. IV is created to read:

[Drafter's Note: Subchapters I, II & III are created in Board Order No. WT-35-98]

SUBCHAPTER IV - EFFLUENT LIMITATIONS FOR CHLORIDE DISCHARGES

NR 106.80 Purpose. The purpose of this subchapter is to specify how the department will regulate the discharge of chloride to surface waters of the state. Nothing in this subchapter shall be construed to prevent or prohibit the use, sale, rental, installation, and service of ion exchange water softeners.

NR 106.81 Applicability. The provisions of this subchapter are applicable to point sources which discharge wastewater containing chloride to surface waters of the state. The provisions of this subchapter are not applicable to discharges of storm water run-off regulated by a storm water permit.

NR 106.82 Definitions. In this subchapter:

- (1) "Calculated limitation" means a chloride water quality-based effluent limitation.
- (2) "Consistently meet" means that 95% of the representative effluent data are less than the calculated limitation.
- (3) "DIR" means demand initiated regeneration.
- (4) "Daily maximum interim limitation" means an effluent limitation calculated by the department which may be either:
 - (a) The upper 99th percentile of the permittee's representative data available to the department, or
 - (b) A value no greater than 105% of the permittee's highest representative effluent datum.
- (5) "Reasonably meet" means that all of the permittee's representative effluent data would, using appropriate statistical techniques, be expected to be less than or equal to the target limitation following the completion of all of the source reduction efforts required by the permit.
- (6) "Representative effluent data" means data, above the level of detection, which is not serially correlated and which represents normally expected effluent concentrations of chloride, collected during a period that can represent current or expected operations, or both, within the term of the permit.
- (7) "Target limitation" means an effluent limitation which the permittee can reasonably meet within the term of the permit, following implementation of appropriate voluntary source reduction activities.
- (8) "Target value" means an effluent concentration of chlorides which a permittee may be expected to reasonably meet following implementation of appropriate voluntary source reduction activities. A target value is not an enforceable limitation under the terms of the permit program, but establishes a measure of progress of source reduction activities.
- (9) "Weekly average interim limitation" means an effluent limitation calculated by the department which may be either:
 - (a) The upper 99th percentile of the permittee's 4-day average of the representative data available to the department, or
 - (b) A value no greater than 105% of the permittee's calculated highest weekly average of the representative effluent data.
- (10) "WPDES" means Wisconsin pollutant discharge elimination system.

NR 106.83 Regulation of chloride discharges. (1) **CHLORIDE EFFLUENT LIMITATIONS.** The department shall evaluate the need to establish effluent limitations for chloride whenever representative effluent data indicate that the discharge from a point source contains chloride. If the department determines that a water quality-based effluent limitation for chloride is needed, a calculated limitation as defined in s. NR 106.82(1) shall be included in the permit to meet the applicable water quality standards specified in chs. NR 102 to 105, unless a chloride variance is given pursuant to sub. (2).

(2) **CHLORIDE VARIANCE.** (a) *Findings.* On the effective date of this rule ...[revisor insert date], the department finds that:

1. End-of-pipe wastewater treatment technology for chloride is prohibitively expensive;
2. End-of-pipe wastewater treatment technology for chloride produces a concentrated brine that can be as much or more of an environmental liability than the untreated effluent;
3. Appropriate chloride source reduction activities are preferable environmentally to end-of-pipe effluent treatment in most cases; and
4. For some dischargers, attaining the applicable water quality standards specified in chs. NR 102 to 105 may cause substantial and widespread adverse social and economic impacts in the area where the discharger is located.
5. These findings shall be reviewed by the department every 3 years.

(b) *Application.* An existing discharger seeking a chloride variance under this subsection shall submit an application for a chloride variance when it submits its application for permit reissuance. The application shall include the permittee's basis for concluding that the findings in sub. (2)(a) for a chloride variance are applicable to its discharge.

(c) *Department determinations.* The department shall review the application submitted by the permittee. The application shall be approved if the department agrees with the permittee's basis for concluding that the findings in sub. (2)(a) for a chloride variance are applicable to its discharge.

(d) *Permit conditions implementing a chloride variance.* The department shall grant a chloride variance to an existing discharger when:

1. The findings in par. (a) supporting a chloride variance apply to the specific discharge; and
2. The permittee and the department agree upon specific permit language imposing an interim limitation, a target value or, where appropriate, a target limitation, and source reduction activities.

(3) **INTERIM LIMITATIONS, TARGET VALUES AND TARGET LIMITATIONS AND SOURCE REDUCTION ACTIVITIES.** (a) If the permittee and the department agree on the inclusion of voluntary source reduction activities and the imposition of an interim limitation and a target value or a target limitation in its permit, those activities and the interim limitation and target value or target limitations shall become permit requirements.

(b) If the permittee and the department cannot agree on voluntary source reduction activities to be included as permit requirements, those activities may not be included in the permit. If the permittee and the department cannot agree on an interim limitation and target value or a target limitation to be included as permit requirements, those limitations may not be included in the permit.

(c) If the permittee and the department cannot agree on voluntary source reduction activities and both an interim limitation and a target value or an interim limitation and a target limitation to be included as permit

requirements, the department shall include a calculated limitation as defined in s. NR 106.82(1) in the permit to meet the applicable water quality standards specified in chs. NR 102 to 105.

(4) **REAPPLICATION FOR A CHLORIDE VARIANCE.** When a permit containing a chloride variance approved by the department under sub. (2)(c) expires, the permittee may reapply for a chloride variance when it submits its application for permit reissuance. The application shall include the permittee's basis for concluding that the findings in sub. (2)(a) are applicable to its discharge.

(5) **APPLICABILITY OF THE VARIANCE PROCESS IN S. 283.15, STATS.** If a calculated limitation is included in the permit, a permittee may apply to the department for a variance from the water quality standard used to derive the calculated limitation, pursuant to s. 283.15, Stats. Where a permittee has been granted a chloride variance and its permit includes an interim limitation, a target value, a target limitation and requirements for chloride source reduction activities, the provisions of s. 283.15, Stats., are not applicable to the interim and target limitations.

NR 106.84 Compliance with Wisconsin water quality antidegradation rules when reissuing a permit. Chapter NR 207 does not apply in those instances in which a reissued permit includes effluent limitations for chloride which represent a lowering of concentration as compared to the interim limitation in the previous permit.

NR 106.85 Determination of the necessity for water quality-based effluent limitations. (1) The department shall determine the need for chloride water quality-based effluent limitations for point source discharges whenever the discharges from the point sources contain chloride at concentrations or loadings which do not, as determined by any method in this section, meet the applicable water quality standards specified in chs. NR 102 to 105.

(2) When considering the necessity for water quality-based effluent limitations, the department shall consider in-stream bio-survey data and data from ambient toxicity analyses whenever the data are available.

(3) When considering the necessity for chloride water quality-based effluent limitations, the department shall compare the upper 99th percentile of available representative discharge concentrations to the calculated limitations, pursuant to s. NR 106.05(4).

NR 106.86 Monitoring. Notwithstanding any other section in this subchapter, the department shall determine on a case-by-case basis the chloride monitoring frequency to be required in the permit.

NR 106.87 Establishment of effluent limitations. (1) **CALCULATED LIMITATIONS.** If water quality-based effluent limitations for chloride are deemed necessary, those limitations shall be derived pursuant to s. NR 106.06 and, for the purposes of this subchapter, shall be labeled "calculated limitations".

(2) **INTERIM LIMITATION.** The interim limitation may be expressed as both a daily maximum and a weekly average, calculated in accordance with s. NR 106.82 (4) and (9).

(3) **TARGET VALUE.** The target value may be expressed as both a daily maximum and a weekly average. The department and the permittee shall consider both the implementation and the anticipated effectiveness of appropriate voluntary source reduction activities in order to determine a target value which is reasonably achievable within the term of the permit.

(4) **TARGET LIMITATION.** The target limitation may be expressed as both a daily maximum and a weekly average. The department and the permittee shall consider both the implementation and the anticipated effectiveness of appropriate voluntary source reduction activities in order to determine a target limitation which is reasonably achievable within the term of the permit.

NR 106.88 Application of and compliance with chloride effluent limitations in a permit. (1) If chloride water quality-based effluent limitations are deemed to be necessary in accordance with s. NR 106.85 and the permittee's representative effluent data indicate that the permittee can consistently meet the calculated limitation, the department may include the calculated limitations in the permit with an appropriate compliance schedule.

(2) If chloride water quality-based effluent limitations are deemed to be necessary, and the permittee's representative effluent data indicate that it cannot consistently meet the calculated limitation, and the provisions of s. NR 106.83 for a chloride variance are met, the department may instead include all of the following in the permit:

(a) Chloride monitoring.

(b) An interim limitation for chloride which is effective on the date of permit issuance.

(c) Tier 1 source reduction.

(d) A target value or a target limitation with an appropriate compliance schedule, which is effective on the last day of the permit.

(e) If appropriate, either tier 2 or tier 3 source reduction if the department believes that any of the additional conditions in the tier 2 or tier 3 source reduction activities are reasonable and practical within the term of the permit.

(3) Interim limitations, target values and target limitations established according to this subchapter shall be expressed in the permit as a concentration limitation, in units of mg/L or equivalent units. Pursuant to s. NR 106.07(2), calculated limitations established in accordance with this subchapter shall be expressed in the permit both as a concentration limitation, in units of mg/L or equivalent units, and as a mass limitation, in units of Kg/d or equivalent units.

(4) Effluent limitations based on an acute criterion shall be expressed in permits as daily maximum limitations; and effluent limitations based on a chronic criterion shall be expressed in permits as weekly average limitations.

(5) A determination of compliance with interim, target and calculated limitations and comparison with target values shall be based upon 24-hour composite samples.

(6) Mass limitations shall be determined for calculated limitations pursuant to s. NR 106.07 (2) and (9).

NR 106.89 Alternative whole effluent toxicity monitoring and limitations for dischargers of chloride.

(1) In addition to interim, target and calculated water quality-based effluent limitations and target values for chloride, the department may establish whole effluent toxicity testing requirements and limitations pursuant to ss. NR 106.08 and 106.09.

(2) Acute whole effluent toxicity testing requirements and acute whole effluent toxicity limitations may be held in abeyance by the department until source reduction actions are completed if either:

(a) The permittee can demonstrate to the satisfaction of the department that the effluent concentration of chloride exceeds 2,500 mg/L, or

(b) The permittee can demonstrate to the satisfaction of the department that the effluent concentration of chloride is less than 2,500 mg/L, but in excess of the calculated acute water quality-based effluent limitation, and additional data are submitted which demonstrate that chloride is the sole source of acute toxicity.

(3) Chronic whole effluent toxicity testing requirements and chronic whole effluent toxicity limitations may be held in abeyance by the department until source reduction actions are completed if either:

(a) The permittee can demonstrate to the satisfaction of the department that the effluent concentration of chloride exceeds 2 times the calculated chronic water quality-based effluent limitation, or

(b) The permittee can demonstrate to the satisfaction of the department that the effluent concentration of chloride is less than 2 times the calculated chronic water quality-based effluent limitation, but in excess of the calculated chronic water quality-based effluent limitation, and additional data are submitted which demonstrate that chloride is the sole source of chronic toxicity.

(4) Following the completion of source reduction activities, the department shall evaluate the need for whole effluent toxicity monitoring and limitations.

NR 106.90 Source reduction. (1) INTRODUCTION. A 3-tiered system of source reduction measures is established in ascending order of increasing capital and operating costs.

(2) Tier 1 source reduction measures are those voluntary source reduction activities that identify and quantify chloride and softened water sources and usage, educate users and system operators on the need to minimize salt and softened water demands and promote better housekeeping practices that will reduce chloride and softened water consumption, and other activities similar in nature. Tier 1 source reduction measures may include any of the following:

(a) For POTWs:

1. Identify sources of chloride to the sewer system.
2. Educate homeowners on the impact of chloride from residential softeners, discuss options available for increasing softener salt efficiency, and request voluntary reductions.
3. Recommend residential softener tune-ups on a voluntary basis.
4. Request voluntary support from local water softening businesses in the efforts described in subds. 2. and 3.
5. Educate licensed installers and self-installers of softeners on providing optional hard water for outside faucets for residences.
6. Request voluntary reductions in chloride input from industrial and commercial contributors.
7. Where a public water utility has been identified as a significant contributor of chloride to the sewer system, request that the water utility conduct activities listed in par. (b).

(b) For direct-discharging municipal or commercial water softening plants:

1. Identify the users of soft water or the processes using soft water, and the amounts they use.
2. Determine which users or processes can tolerate unsoftened water, and determine their impact on demand.
3. Determine which users can close-loop their once-through cooling system or which processes can be close-looped, and determine their impact on demand.
4. Seek voluntary demand reductions.

(c) For dairies, train plant personnel to be more aware of salt conservation, emphasizing simple, cost effective housekeeping measures. For example, spilled salt can be cleaned up as a solid waste rather than flushed down the floor drain.

(d) For those facilities which process vegetables or meats:

1. Train personnel as described in par. (c) in housekeeping measures.
2. Optimize softener operation to ensure the appropriate regeneration interval and salt dosage are used.

(e) For any other facility not listed in pars. (a) to (d), conduct activities that identify and quantify chloride and softened water sources and usage and educate personnel on appropriate housekeeping practices and the need to minimize salt and softened water demands.

(3) Tier 2 source reduction measures are those voluntary source reduction activities that improve and optimize equipment and processes, encourage restricted chloride use by users, eliminate wasteful practices and establish recycling practices where feasible, and other activities similar in nature. Tier 2 source reduction measures may include any of the following:

(a) For POTWs, institute sewer use ordinances that:

1. Require significant industrial and commercial contributors to evaluate their water treatment systems with regard to softened water requirements, with the results of that evaluation being the basis for potential restrictions of chloride inputs.

2. Mandate a DIR and high salt efficiency standard for new residential softeners.

3. Mandate participation in a residential softener tune-up program, which involves qualified periodic servicing to ensure proper control settings and adjustments.

4. Where a public water utility has been identified as a significant contributor of chloride to the sewer system, request that the water utility conduct activities listed in par. (b).

(b) For direct-discharging municipal or commercial water softening plants:

1. Optimize softener operation to ensure the appropriate regeneration interval and salt dosage are used.

2. If the regeneration is manual or timer-initiated, switch to a DIR controller.

3. Evaluate the feasibility of brine reclamation.

(c) For dairies:

1. Improve the handling of salt brines and the handling of cheese into and out of brine systems. Consider capital improvements such as automating the brine system, properly designed drip pans and splash guards.

2. Optimize softener operation to ensure the appropriate regeneration interval and salt dosage are used.

3. If the regeneration is manual or timer-initiated, evaluate the feasibility of switching to a DIR controller.

4. Evaluate the feasibility of softener brine reclamation.

5. Determine which subprocesses can tolerate unsoftened water, and make appropriate changes.

6. Determine whether once-through cooling systems can be close-looped, and make appropriate changes.

7. For plants that condense whey, evaluate the feasibility of using condensate of whey (COW) water for the first rinse for clean-in-place (CIP) systems and for boiler makeup water.

(d) For those facilities which process vegetables:

1. If the regeneration is manual or timer-initiated, evaluate the feasibility of switching to a DIR controller.

2. Evaluate the feasibility of softener brine reclamation.

3. Investigate the feasibility of using a phosphonate additive instead of softening the cooling water.

4. Evaluate the feasibility of reusing once-through cooling water as boiler make-up.

5. Investigate the feasibility of using unsoftened water for container fill.

(e) For those facilities which process meats:

1. If the regeneration is manual or timer-initiated, evaluate the feasibility of switching to a DIR controller.

2. Evaluate the feasibility of softener brine reclamation.

(f) For any other facility not listed in pars. (a) to (e), conduct activities that improve and optimize equipment and processes, eliminate wasteful practices and establish recycling practices to achieve chloride reductions.

(4) Tier 3 source reduction measures are those voluntary source reduction activities that evaluate the feasibility of replacing or upgrading equipment and processes or evaluate the feasibility of using alternative technologies or processes, and other activities similar in nature. Tier 3 source reduction measures may include:

(a) For POTWs, where residential point-of-use softening is the primary chloride input:

1. Evaluate the requirement for new and replacement softeners to be metered demand type, with a higher, greater than 3350 grains of hardness exchange per pound of salt, efficiency capability.

2. Evaluate the imposition of installation restrictions so that outside hose bibs are on unsoftened water. If restrictions are imposed, new homes and those in real estate transfers should be required to have plumbing restrictions for hard water by-passes, and the requirement should apply to self-installed equipment as well.

(b) For POTWs, where a central water supply softener is the primary chloride input, conduct activities listed in par. (c).

3. Evaluate the feasibility of installing a brine recovery and reuse system for reducing salt waste at the point of supplying flavorings to containers.

(f) For those facilities which process meats:

1. Investigate the feasibility of replacing brine chills with air, water or air-water chills.
2. Reduce drainback through operational and equipment improvements.
3. Investigate the feasibility of chill brine reconditioning and reuse.
4. Evaluate the feasibility of reusing once-through cooling water, or installing a closed-loop cooling water system.
5. Evaluate phosphonate additives instead of softened water.

(g) For any other facility not listed in pars. (a) to (f), evaluate the feasibility of replacing or upgrading equipment and processes, and the use of alternative softening technologies to affect chloride reductions.

(5) **SOURCE REDUCTION REPORTING.** Following the completion of tier 1, 2 or 3 source reduction activities specified in the permit, but no later than 6 months prior to permit expiration, the permittee shall file a written report to the department documenting the current reduction as well as the anticipated future reduction in salt usage and chloride effluent concentrations.

NR 106.91 Publicly owned treatment works which accept wastewater from public water systems treating water to meet primary safe drinking water act standards. Publicly owned treatment works which accept wastewater from a public water system treating water to meet the primary maximum contaminant levels specified in ch. NR 809, if not able to meet the calculated limitation, may be given an interim limitation, a target value, a target limitation and appropriate source reduction requirements, pursuant to s. NR 106.83. No calculated limitation, interim limitation, target value, target limitation, or source reduction requirement shall interfere with the attainment of the primary maximum contaminant levels specified in ch. NR 809.

NR 106.92 Authority of a publicly owned treatment works to regulate chloride discharges. A publicly owned treatment works has the authority to regulate the discharge of chloride as enumerated in s. NR 211.40.

NR 106.93 New discharges. Any point source which has not been authorized under a WPDES permit prior to the effective date of this subchapter ... [revisor insert date] shall be required to meet the calculated limitations. Relocation of an existing discharge which was issued a WPDES permit prior to the effective date of this subchapter ... [revisor insert date] may not be considered a new discharge.

NR 106.94 Relocation of an existing discharge. An existing discharge which was issued a WPDES permit prior to the effective date of this subchapter ... [revisor insert date] and which is relocated after the effective date of this subchapter ... [revisor insert date], may be subject to voluntary source reduction activities and both an interim limitation and a target value or an interim limitation and a target limitation pursuant to s. NR 106.83 if the

SECTION 4. NR 211, subch. IV is created to read:

SUBCHAPTER IV - REGULATION OF CHLORIDE SOURCES

NR 211.40 POTW authority to regulate chloride discharges from all sources. Notwithstanding all other provisions of this chapter, a POTW may develop and enforce specific standards or requirements, including but not limited to source reduction activities enumerated in s. NR 106.90, to regulate the discharge of chloride from industrial, residential and commercial sources. The POTW's authority includes the authority to regulate all industrial, commercial and domestic wastewater containing chloride.

SECTION 5. Chapter NR 215 (title) is amended to read:

Chapter NR 215
LIST OF TOXIC, CONVENTIONAL, AND NONCONVENTIONAL POLLUTANTS

SECTION 6. NR 215.06(26) is created to read:

NR 215.06 (26) Chloride

The foregoing rule was approved and adopted by the State of Wisconsin Natural Resources Board on August 25, 1999.

The rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22(2)(intro.), Stats.

Dated at Madison, Wisconsin _____

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

By _____
George E. Meyer, Secretary

(SEAL)