

SENATE STAFF ANALYSIS AND ECONOMIC IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

BILL: SB 536
 SPONSOR: Senator Bronson
 SUBJECT: Demineralization concentrate
 DATE: February 16, 2001 REVISED: _____

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Branning	Voigt	NR	Favorable
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

I. Summary:

This bill revises the provisions regarding the discharge of demineralization concentrate. Provides legislative intent. Redefines “demineralization concentrate.” Authorizes the Department of Environmental Protection to adopt rules to address facilities that discharge demineralization concentrate. Provides for technical advisory committee to assist the department in the development of the rules. Provides certain permitting requirements. Provides an exemption to allow demineralization concentrate mixing zones in Outstanding Florida Waters if certain conditions are met.

This bill amends ss. 403.0882 and 403.061, F.S.

II. Present Situation:

With Florida’s rapid growth rate, the demand on its natural resources, particularly safe drinking water, is great. In recent years, annual rainfall amounts have been much lower than normal. This has led to greater withdrawals from the aquifers and surface waters to the point where water levels are critically low in some areas. As a result, Florida is looking to expand its use of alternative water supplies.

One example of an alternative water supply source is demineralization of non-potable water. Demineralization removes salts, minerals, and other constituents from sources such as seawater or brackish water aquifers. This process yields two products: fresh, potable water and a demineralization concentrate. Demineralization processes include electro dialysis, which uses an electrical current to move salts selectively through a membrane, reverse osmosis (R/O). Reverse osmosis subjects water on one side of a semi-permeable, plastic-like membrane to pressure which causes fresh water to diffuse through the membrane. Left behind is the concentrate. The resulting

concentrate, which may be toxic, is disposed of either by discharging to surface water or deep well injection.

Section 403.0882, F.S., requires the Department of Environmental Protection (DEP) to classify the discharge of demineralization concentrate as a potable water byproduct rather than as an industrial wastewater. Except as provided in s. 403.0882, F.S., the discharge of demineralization concentrate is subject to the same requirements as an industrial wastewater under ch. 403, F.S.

The discharge from small water utility businesses meeting certain standards are presumed to be allowable and permissible in all waters in the state at a reasonably accessible point where such discharge results in minimal negative impact. A small water utility business is any facility that distributes potable water to two or more customers and has a concentrate discharge of less than 50,000 gallons per day.

The discharge of demineralization concentrate to domestic wastewater reuse systems is allowable if the applicant demonstrates, through the engineering report, that the blend will meet water quality standards and protect public health, site vegetation, and the ability of the reuse system, including land application, to function as intended.

Facilities owned by small water utility businesses have specific mixing zone requirements. A mixing zone that has a radius not in excess of two times the natural water depth at the point of discharge for acute toxicity, or has a 200-foot radius for chronic toxicity, and provides for a minimum of 4-to-1 dilution within the mixing zone for acute toxicity under all conditions, is presumed allowable in the permitting of discharge of concentrate from facilities used for demineralization for potable water production.

For such small businesses, the DEP may not require such businesses to perform toxicity testing other than at the time of permit application, permit renewal, or any requested permit modification except under certain circumstances. The DEP also may not require those businesses to obtain a water-quality-based effluent limitation determination.

Currently, the demineralization industry in Florida has experienced difficulties concerning permitting the DEP and disposal of concentrate which test results indicate may be toxic. There has been some uncertainty and inconsistency in permitting these types of facilities due to the lack of a clearly defined permitting process and misinterpretation of existing law.

III. Effect of Proposed Changes:

This bill rewrites s. 443.0882, F.S., to remove or reword confusing language and to update the statute according to the latest DEP rules and industry developments.

The bill provides that it is the intent of the Legislature to conserve and protect water resources, provide adequate water supplies and provide for natural systems, and promote brackish water demineralization as an alternative to freshwater withdrawals by removing institutional barriers to demineralization and through research, including demonstration projects, to advance water and water byproduct treatment technology, sound waste byproduct disposal methods, and regional solutions to water resources issues. Also, in order to promote the state objective of alternative

water supply development, the concentrate resulting from demineralization must be classified as a potable water byproduct, regardless of flow quantity, and must be appropriately treated and discharged or reused.

“Demineralization concentrate” is redefined to mean the concentrated byproduct water, brine, or reject water produced by ion exchange or membrane separation technologies such as reverse osmosis, membrane softening, ultra-filtration, membrane filtration, electrodialysis, and electrodialysis reversal used for desalination, softening, or reducing total dissolved solids during water treatment for public water supply purposes.

The DEP is required to initiate rulemaking no later than October 1, 2001, to address facilities that discharge demineralization concentrate. The DEP shall convene a technical advisory committee to assist in the development of the rules. Members of the technical advisory committee shall include:

- One representative each from the demineralization industry, local government, water and wastewater utilities, the engineering profession, business, and environmental organizations; and
- One member representing the five water management districts.

The DEP’s rules must address:

- Permit application forms for concentrate disposal;
- Specific options and requirements for demineralization concentrate disposal, including a standardized list of effluent and monitoring parameters, which may be adjusted or expanded by the department as necessary to protect water quality;
- Specific requirements and accepted methods for evaluating mixing of effluent in receiving waters; and
- Specific toxicity provisions.

For facilities that discharge demineralization concentrate, the failure of whole effluent toxicity tests predominantly due to the presence of constituents naturally occurring in the source water (limited to calcium, potassium, sodium, magnesium, chloride, bromide, and other constituents designated by the department), may not be the basis for denial of a permit, denial of a permit renewal, revocation of a permit, or other enforcement action by the department as long as the volume of water necessary to achieve water quality standards is available within a distance not in excess of two times the natural water depth at the point of discharge under all flow conditions.

If the failure of the whole effluent toxicity tests is due predominately to the presence of the naturally occurring constituents, the department shall issue a permit for the demineralization concentrate discharge if certain specified conditions are met.

Blending of demineralization concentrate with reclaimed water is allowed in accordance with the department’s reuse rules.

For small water utility businesses, the discharge of demineralization concentrate is presumed to be allowable and permissible if certain specified conditions are met. This presumption may be overcome only by a demonstration that one or more of the following conditions is present:

- The discharge will be made directly into an Outstanding Florida Water, except as provided in ch. 90-262, L.O.F.;
- The discharge will be made directly to Class I or Class II waters;
- The discharge will be made to a water body having a total maximum daily load (TMDL) established by the department and the discharge will cause or contribute to a violation of the TMDL;
- The discharge fails to meet the requirements of the antidegradation policy contained in the department rules;
- The discharge will be made to a sole-source aquifer;
- The discharge fails to meet applicable surface water and groundwater quality standards;
- or
- The results of any toxicity test performed by the applicant or the department indicate that the discharge does not meet toxicity requirements at the boundary of the mixing zone.

If any of the above conditions are present, the department may require more stringent effluent limitations; require relocation of the discharge point or change the method of discharge; limit the duration or volume of the discharge; or prohibit the discharge if there is not suitable alternative.

Facilities owned by small utility businesses are not required to perform toxicity testing other than at the time of permit application, permit renewal, or any requested permit modification, unless the initial toxicity test or any subsequent toxicity test performed by the department does not meet toxicity requirements. These facilities are also not required to obtain a water-quality-based effluent limitation determination.

The DEP is authorized to adopt additional rules relating to the regulation of demineralization.

Section 403.061, F.S., is amended to provide that a mixing zone for the discharge of demineralization concentrate may be allowed in an Outstanding Florida Water under certain conditions.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

V. Economic Impact and Fiscal Note:**A. Tax/Fee Issues:**

None.

B. Private Sector Impact:

This bill is intended to clarify and streamline the permitting process for utilities implementing demineralization projects. Those private utilities involved in such projects could realize some cost savings associated with the permit. In addition, there would be a significant cost savings to those utilities previously unable to discharge into an Outstanding Florida Water. This bill would allow such discharges under certain circumstances. Currently the only other viable discharge alternative is deep well injection which is more costly. Any savings realized by the utility presumable would be passed on to the consumer.

C. Government Sector Impact:

Public utilities implementing demineralization projects would realize the same cost savings associated with a streamline permitting process as would private utilities.

The Department of Environmental Protection would experience some costs associated with rulemaking to implement the provisions of this bill; however, those costs are not expected to be significant and could be handled using existing resources.

The bill is silent on the issue of costs associated with the technical advisory committee. It is not known whether or not the members may be reimbursed for their travel and per diem expenses associated with their participation on the committee. Those costs, if reimbursable, would presumably be borne by the department.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Amendments:

None.