ILLINOIS POLLUTION CONTROL BOARD
August 15, 1996

IN THE MATTER OF:	)	
	)	
STEEL AND FOUNDRY INDUSTRY WASTE	)	R96-3
LANDFILLS: AMENDMENTS TO 35 ILL.	)	(Rulemaking - Land)
ADM. CODE 817.309 (FACILITY LOCATION	)	
FOR LANDFILLS ACCEPTING	)	
POTENTIALLY USABLE WASTE)[1]	)	

Proposed Rule. First Notice.

OPINION AND ORDER OF THE BOARD (by R.C. Flemal):

This matter comes before the Board upon a petition for rulemaking filed by the Illinois Cast Metals Association (ICMA) on September 6, 1995, and a revised petition filed on February 26, 1996. ICMA requests that the Board's landfill regulations governing steel and foundry industry wastes be amended at 35 Ill. Adm. Code 817.309. In pertinent part, Section 817.309 establishes minimum setback distances and strata thicknesses between the waste unit and Class I and Class III groundwaters. The proposed amendments would allow the owner or operator to make a demonstration to the Illinois Environmental Protection Agency (Agency) that, the absence of natural barriers notwithstanding, the unit could be operated in a manner protective of human health and the environment.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 et seq. (1994)). The Board is charged therein to "determine, define and implement the environmental control standards applicable in the State of Illinois" (415 ILCS 5/5(b)). More generally, the Board's rulemaking charge is based on the system of checks and balances integral to Illinois environmental governance: the Board bears responsibility for the rulemaking and principal adjudicatory functions; the Agency has primary responsibility for administration of the Act and the Board's regulations, including the regulations today proposed for amendment. The Agency has indicated that it does not oppose the instant amendments. (Exh. 3.)

By today's action the Board adopts the proposed amendments for the purpose of first notice, pursuant to the Illinois Administrative Procedure Act (5 ILCS 100/1-1 *et seq*. (1994)). Publication in the *Illinois Register* will follow today's action, whereupon a 45-day public comment period will begin during which interested persons may file public comment with the Board.

PROCEDURAL HISTORY

[1] The caption in this matter was amended at hearing to reflect the nature of the requested amendments, as currently before the Board.

ICMA initially filed its proposal on September 6, 1995. By order of September 21, 1995 the Board accepted the proposal for hearing.

Hearings were scheduled on the initial proposal for November 28 and 30, 1995. However, by filing of November 22, 1995 ICMA moved the Board to postpone the hearings pending additional discussion of the proposal with the Agency.

On February 26, 1996, ICMA withdrew the initial petition and filed a revised petition. In the initial proposal, ICMA sought to effectuate the relief it desires by amendment of 35 Ill. Adm. Code 814.902[2]. In the revised proposal the locus of the proposed amendments was changed to 35 Ill. Adm. Code 817.309.

Public hearings were held before hearing officer Audrey Lozuk-Lawless in Chicago on June 24, 1996 and in Edwardsville on June 26, 1996. ICMA presented the testimony of Michael Slattery and Christopher Peters, both of Residuals Management Technology, Inc. The Agency presented the testimony of Kenneth W. Liss, manager of the Groundwater Unit, Permit Section, of the Agency's Bureau of Land.

In response to considerations raised at hearing, ICMA on July 18, 1996 filed revised proposed language. The revised proposed language frames the proposed amendments currently before the Board.

OVERVIEW

The instant proposal has antecedents in two prior Board rulemaking proceedings. In the first of these, R88-7, the Board adopted a broadly-applicable and extensively-revised set of regulations governing non-hazardous waste landfills[3].

The R88-7 rulemaking resulted in the establishment of several categories of waste for which waste-specific landfill standards were established. Among these, for example, are standards applicable to putrescible waste landfills. The principle underlying waste-specific landfilling standard is that different types of waste may have sufficiently different properties as to warrant distinct provisions governing their disposal. Moreover, the Board recognized at the time that the R88-7 rulemaking was finalized, that

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[2] Section 814.902 contains miscellaneous standards for operation and closure of existing landfill units that accept only potentially usable steel or foundry industry waste and that plan to stay open for more than two years.

[3] See, In the Matter of: Development, Operating and Reporting Requirements for Non-hazardous Waste Landfills R88-7, 114 PCB 483, August 17, 1990, effective September 18, 1990.

there were additional categories of wastes for which further waste-specific landfill standards might be warranted.

One such additional category explicitly identified in the R88-7 rulemaking and in the regulations themselves is "wastes generated by foundries and primary steel production facilities" (35 Ill. Adm. Code 811.101(b)). In the second of the two antecedent rulemakings, docketed as R90-26(A)[4] and R90-26(B)[5], the Board adopted regulations governing the land disposal of a variety of steel and foundry industry non-hazardous wastes. Included in the R90-26 rulemakings was adoption of Part 817, which is at issue in the instant proceeding.

Today's focus is on only a small portion of Part 817[6]. It is that portion of Part 817 that deals with landfills that receive only potentially usable steel and foundry industry waste. Potentially usable waste (PUW) is one of the three types of steel and foundry industry wastes for which waste-specific landfilling standards were developed in the R90-26 rulemakings. "Potentially usable waste" is defined at 35 Ill. Adm. Code 810.103 as:

> "Potentially usable waste" means any solid waste from the steel and foundry industries that will not decompose biologically, burn, serve as food for vectors, form a gas, cause an odor, or form a leachate that contains constituents that exceed the limits for this type of waste as specified at 35 Ill. Adm. Code 817.106.

Moreover, today's focus is only on the facility location standards for new PUW landfills and, further, only on that aspect of the location standards that concerns the positioning of the landfills with respect to Class I and Class III groundwaters[7]. The current regulations at Section 817.309(b) contain a prohibition against the siting of any new PUW landfill where any part of the landfill unit is within 1200 feet, vertically or horizontally, of a Class I or Class III groundwater, unless there is an intervening confining layer of specific properties:

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[4] In the Matter of: Steel and Foundry Industry Amendments to the Landfill Regulations (35 Ill. Adm. Code 810 through 815 and 817) R90-86(A), July 21, 1994.

[5] In the Matter of: Steel and Foundry Industry Amendments to the Landfill Regulations (35 Ill. Adm. Code 810 through 815 and 817) R90-86(B), September 1, 1994.

[6] See today's order for the full text of the table of contents of Part 817.

[7] Class I groundwaters are groundwaters that constitute potable resources, as defined at 35 Ill. Adm. 620.210. Class III groundwaters are groundwaters that, pursuant to 35 Ill. Adm. Code 620.250, are explicitly designated as "Special Resources Groundwaters"; as of this date, no Class III groundwaters have been designated.

. b) No part of a unit shall be located within the recharge zone or within 366 meters (1200 feet), vertically or horizontally, of that portion of a stratigraphic unit containing Class I or Class III groundwater as defined at 35 Ill. Adm. Code 620, unless there is a stratum between the bottom of the waste disposal unit and the top of the Class I or Class III groundwater that meets the following minimum requirements:

1) The stratum has a minimum thickness of 15.2 meters (50 feet);

2) The maximum hydraulic conductivity in both the horizontal and vertical directions is no more than 1×10^{-7} centimeters per second, as determined by in situ borehole or equivalent tests;

3) There is no indication of continuous sand or silt seams, faults, fractures or cracks within the stratum that may provide parts for migration; and

4) Age dating of extracted water samples from both the aquifer and the stratum indicates that the time of travel for water percolating downward through the relatively impermeable stratum is no faster than 15.2 meters (50 feet) in 100 years.

* * * * * * *

Today's proposal would retain this prohibition generally, but would allow for an exception if the owner or operator of the unit successfully demonstrates to the Agency that siting of the unit will not degrade the use of any Class I groundwater or adversely impact any existing Class III groundwater.

The Board notes that, although Part 817 is titled "Requirements for New Steel and Foundry Industry Wastes Landfills" (emphasis added), today's proposed amendments would, through the operation of 35 Ill. Adm. Code 814.902(a), also apply to existing PUW landfills.

JUSTIFICATION

Environmental Considerations

The purpose of the existing Section 817.309(b) is to provide assurance that steel and foundry industry waste landfills will not be sited in such a manner as to cause or allow pollution of adjacent groundwaters. This assurance is currently provided by the requirement of a large spacial separation between the landfill and groundwater, or by the requirement of a intervening confining layer. Today's proposal offers a third assurance mechanism. That mechanism is a demonstration made to and accepted by the Agency that the landfill will not pollute the groundwater based on the site-specific character of both the landfill and the groundwater.

This third exemption would require the operator or owner of the landfill to demonstrate to the Agency that the unit will not impact any existing Class III groundwater or impact any Class I groundwater such that treatment or further treatment will be required to allow reasonable use of such Class I groundwater for potable water supply purposes. According to Christopher Peters of ICMA, there are certain hydrogeologic situations in which existing PUW landfills pose a negligible potential for impacts to downgradient potable water supply wells or to surface water. ICMA requests that an applicant should be allowed to site or continue to operate a PUW landfill if such a technical demonstration is made.

ICMA's revised language, at the request of the Agency, proposes that this demonstration be made through the use of a site-specific groundwater model developed and evaluated by an Illinois-licensed Professional Geologist, or through other appropriate means prepared by an Illinois-licensed Professional Geologist such as historical knowledge of local conditions or regional geological and hydrogeological data. However, because the licensing program for Illinois-licensed Professional Geologists is just now developing, ICMA states that
there will not be an adequate supply of licensed Professional Geologists until mid-1997. The Board finds this current shortage problematic and will not condition the exemption to become effective at some future uncertain date. Therefore the Board will require that demonstration to be made to a qualified geologist, as suggested by the Agency and ICMA.

Economic Considerations

ICMA describes the economic considerations motivating their proposal as follows:

> ICMA is aware of several facilities in current operation who have the potential to benefit from this proposal. It is also believed that there are several inactive landfills which, if the rule is changed, have the potential to re-open. Finally, the proposed revision will allow new landfills to be sited in locations that are currently prohibited even though a landfill would have no reasonable likelihood of adversely impacting downgradient groundwater users.
>
> We have prepared disposal cost estimates for an average-sized foundry who: (1) sends its waste to an offsite landfill; (2) operates a chemical waste landfill; or (3) operates a PUW landfill . . . Of interest to this rule making is the difference between offsite disposal and disposal in a PUW landfill. That difference is . . . estimated at $1,327,560 per year per landfill.
>
> In addition, diversion of PUW wastes to chemical waste landfills would reduce the capacity of those landfills by hundreds of thousands of tons per year. ICMA believes the limited capacity of chemical waste landfills should be used for more difficult to manage industrial wastes which create a greater threat to the environment than does PUW.

An additional benefit of this rule making is the continued segregation of PUW from chemical wastes. Since the promulgation of Part 817 in July 1994, the Illinois Cast Metals Association (ICMA) has continued to work with regulators and the foundry industry to promote beneficial use of foundry sand materials. ICMA held several seminars to promote the new rule making and educate the membership on protocol for becoming a beneficial use participant.

ICMA has additionally sought out new approaches to promote beneficial use on a statewide basis. One such approach was to meet with Illinois Department of Transportation (IDOT) officials in the Bureau of Materials and Physical Research Division to seek their participation in utilizing foundry byproduct materials for highway construction material. IDOT is considering a specification for foundry byproducts materials in construction back fill and indicated they will work with individual foundries to qualify materials for construction use.

ICMA has initiated a contract with the University of Illinois to conduct research on beneficial use of foundry materials for the potential use in improving the drainage of Illinois farm soils and the project is underway. The research proposal from the University, entitled "Use of Foundry Green Sand to Improve the Physical Properties of Poorly Drained Soils," . . . represents the scope of the project.

Substantial supplies of Potentially Useable Waste make it much easier to convince a possible purchaser to consider the use of the material. ICMA believes the current rule making effort is necessary to promote continuation of PUW sites to assure a supply of construction materials when needed.

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ICMA believes that the proposed revision will result in a net economic and environmental benefit to the State of Illinois. It will allow existing facilities to continue to operate and new facilities to be sited without seeking Board approval for each siting decision.

Exhibit 1 at p 4-6

MODIFICATIONS OF ICMA'S PROPOSAL

Today's proposed first notice differs is some particulars from the revised proposal offered by ICMA. The changes are proposed by the Board for the purpose of adding further clarity to the language of the proposal, as well as conforming the proposal to necessary formats. ICMA and the Agency are requested to review these changes and advise the Board of their perspective on the changes.

The one change that the Board today proposes which it believes to be substantive is change of the word "parts" to "paths" at 817.309(b)(1)(C). The subject of this subsection are potential routes of groundwater migration. In this context, the word "parts" should clearly instead be "paths".

CONCLUSION

The Board believes that ICMA has presented evidence warranting further consideration of this matter. Accordingly, we today find that the record before us justifies adopting the proposal for first notice.

The Board will again review the record in this matter upon completion of the first notice period, and determine then whether the record continues to support moving this matter towards adoption.

ORDER

The Board hereby proposes for first notice the following amendments to 35 Ill. Adm. Code 817. The Clerk of the Board is directed to file these proposed rules with the Secretary of State.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 817
REQUIREMENTS FOR NEW STEEL AND FOUNDRY INDUSTRY WASTES LANDFILLS

SUBPART A: GENERAL REQUIREMENTS

Section
817.101 Scope and Applicability
817.103 Determination of Waste Status
817.104 Sampling Frequency
817.105 Waste Classification
817.106 Waste Classification Limits
817.107 Waste Mining

SUBPART B: STANDARDS FOR MANAGEMENT OF BENEFICIALLY USABLE STEEL AND FOUNDRY INDUSTRY WASTES

Section
817.201 Scope and Applicability
817.202 Limitations on Use
817.203 Notification
817.204 Long-Term Storage

SUBPART C: STEEL AND FOUNDRY INDUSTRY POTENTIALLY USABLE WASTE LANDFILLS

Section
817.301 Scope and Applicability
817.302 Design Period
817.303 Final Cover
817.304 Final Slope and Stabilization
817.305 Leachate Sampling
817.306 Load Checking
817.307 Closure
817.308 Nuisance Precautions
817.309 Facility Location

SUBPART D: NEW STEEL AND FOUNDRY INDUSTRY LOW RISK WASTE LANDFILLS

Section
817.401 Scope and Applicability
817.402 Facility Location
817.403 Design Period
817.404 Foundation and Mass Stability Analysis
817.405 Foundation Construction
817.406 Liner Systems
817.407 Leachate Drainage System
817.408 Leachate Collection System
817.409 Leachate Treatment and Disposal System
817.410 Final Cover System
817.411 Hydrogeologic Site Investigations
817.412 Plugging and Sealing of Drill Holes
817.413 Groundwater Impact Assessment
817.414 Design, Construction and Operation of Groundwater Monitoring Systems
817.415 Groundwater Monitoring Programs
817.416 Groundwater Quality Standards
817.417 Waste Placement
817.418 Final Slope and Stabilization

817.419 Load Checking

SUBPART E: CONSTRUCTION QUALITY ASSURANCE PROGRAMS

Section
817.501 Scope and Applicability

Section
817.Appendix A Organic Chemical Constituents List

AUTHORITY: Implementing Sections 5, 21, 21.1, 22, 22.17, 28.1, and authorized by Section 27 of the Environmental Protection Act (~~Ill. Rev. Stat. 1991, ch. 111½, pars. 1005, 1021, 1021.1, 1022, 1022.17, 1028.1 and 1027 [~~415 ILCS 5/5, 5/21, 5/21.1, 5/22, 5/22.17, 5/28.1, and 5/27~~]~~).

SOURCE: Adopted in R90-26(A) at 18 Ill. Reg. 12411, effective August 1, 1994; amended in R90-26(B) at 18 Ill. Reg. 14370, effective September 13, 1994; amended in R96-3 at 21 Ill. Reg. _____, effective _____ .

Section 817.309 Facility Location

a) No part of a unit shall be located within a setback zone established pursuant to Section 14.2 or 14.3 of the Act.

b) No part of a unit shall be located within the recharge zone or within 366 meters (1200 feet), vertically or horizontally, of that portion of a stratigraphic unit containing Class I or Class III groundwater as defined at 35 Ill. Adm. Code 620, unless:

1) T~~t~~here is a stratum between the bottom of the waste disposal unit and the top of the Class I or Class III groundwater that meets the following minimum requirements:

A)~~1)~~ The stratum has a minimum thickness of 15.2 meters (50 feet);

B)~~2)~~ The maximum hydraulic conductivity in both the horizontal and vertical directions is no more than 1×10^{-7} centimeters per second, as determined by in situ borehole or equivalent tests;

C)~~3)~~ There is no indication of continuous sand or silt seams, faults, fractures or cracks within the stratum that may provide paths ~~parts~~ for migration; and

D)~~4)~~ Age dating of extracted water samples from both the aquifer and the stratum indicates that the time of travel for water percolating downward through the relatively impermeable stratum is no faster than 15.2 meters (50 feet) in 100 years~~.~~; or

2) The owner or operator of the unit has demonstrated to the Agency, through the use of a site-specific groundwater model developed and evaluated by a qualified geologist, or through other appropriate means prepared by a qualified geologist, such as historical knowledge of local conditions or regional geological and hydrogeological data, that operation of the unit will not adversely impact any existing Class III groundwater or impact any Class I groundwater such that treatment or further treatment will be required to allow reasonable use of such Class I groundwater for potable water supply purposes.

A) Factors to be considered in evaluating whether a Class I groundwater may be reasonably used for potable supply purposes include, but are not limited to:

i) Physical or technological practicability of development;

ii) Existence of deed restrictions or other legal mechanisms for imposing a restriction on land use; and

iii) The nature of an existing use of the groundwater.

B) In performing groundwater modeling, the owner or operator shall:

i) Estimate the amount of seepage from the unit during operations assuming that the actual design standards for the unit apply;

ii) Determine the concentration of constituents in the leachate from actual leachate samples from the waste or similar waste, or laboratory-derived extracts;

iii) Collect information to develop the site-specific groundwater model (e.g., hydraulic conductivity, gradients, hydrogeology, stratigraphy);

iv) Develop a conceptual groundwater flow model of the site to determine the soil units through which leachate may migrate;

v) If leachate from the unit is expected to contain organic constituents in excess of the MALCs for beneficial usable waste, determine the organic carbon content for soil units through which the leachate constituents may migrate; and

vi) Determine the retardation factor for constituents of interest based on traditional hydrogeological methods.

c) Subsection (b) shall not apply to units that accept only beneficially useable waste.

d) A facility located within 152 meters (500 feet) of the right of way of a township or county road or State or interstate highway shall have its operations screened from view by a barrier of natural objects, fences, barricades or plants no less than 2.44 meters (8 feet) in height.

e) No part of a unit shall be located closer than 152 meters (500 feet) from an occupied dwelling, school, or hospital that was occupied on the date when the operator first applied for a permit to develop the unit or the facility containing the unit, unless the owner of such dwelling, school, or hospital provides permission to the operator, in writing, for a closer distance.

(Source: Amended at 21 Ill. Reg. _____, effective _____.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the _____ day of _____, 1996, by a vote of _____.

_____
Dorothy M. Gunn, Clerk
Illinois Pollution Control Board