BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R 04-021
REVISIONS TO RADIUM WATER QUALITY STANDARDS: PROPOSED NEW 35 Ill. Adm. Code 302.307 AND AMENDMENTS TO 35 Ill. Adm. Code 302.207 and 302.525	)	(Rulemaking-Water)

NOTICE OF FILING

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite. 11-500
Chicago, Illinois 60601

Illinois Department of Natural Resources
Attention: Legal Department
1 Natural Resources Way
Springfield, Illinois 62702

Matthew Dunn
Illinois Attorney General's Office
Environmental Control Division
James R. Thompson Center,
188 West Randolph Street
Chicago, Illinois 60601

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the **REGULATORY PROPOSAL OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**, a copy of which is herewith served upon you.

ENVIRONMENTAL PROTECTION AGENCY
OF THE STATE OF ILLINOIS

By: Deborah J. Williams

Deborah J. Williams
Assistant Counsel
Division of Legal Counsel

DATED: January 13, 2004

Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
(217) 782-5544

THIS FILING IS SUBMITTED ON RECYCLED PAPER

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R 04-21
REVISIONS TO RADIUM WATER QUALITY STANDARDS: PROPOSED NEW 35 Ill. Adm. Code 302.307 AND AMENDMENTS TO 35 Ill. Adm. Code 302.207 and 302.525	)	(Rulemaking-Water)

STATEMENT OF REASONS

The Illinois Environmental Protection Agency ("Illinois EPA") hereby submits its Statement of Reasons for the above-captioned proceeding to the Illinois Pollution Control Board ("Board") pursuant to Section 27 of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/27 (2002), and 35 Ill. Adm. Code 102.200 and 102.202.

I. STATUTORY BASIS

This is a regulatory proposal of general applicability pursuant to Sections 27 and 28 of the Act. 415 ILCS 5/27 and 28. It is not being proposed as an identical in substance, fast track or federally required rulemaking. In addition, this proposal is being filed as a general (rather than emergency or peremptory) rulemaking pursuant to Section 5-40 of the Illinois Administrative Procedure Act. 5 ILCS 100/5-40. Section 27 of the Act confers general substantive rulemaking authority upon the Board and the contents of this regulatory proposal are within these general rulemaking powers of the Board. Pursuant to Section 303 of the Clean Water Act, it is the primary responsibility of the States to set water quality standards for intrastate waters and submit changes to those standards to the United States Environmental Protection Agency ("U.S. EPA") for

approval. 33 U.S.C. §1313. Section 13(a) of the Act specifies the rulemaking authority of the Board to adopt regulations which prescribe "Water quality standards specifying, among other things, the maximum short-term and long-term concentrations of various contaminants in the waters, and the minimum permissible concentrations of dissolved oxygen and other desirable matter in the waters, and the temperature of such waters." 414 ILCS 5/13(a)(1).

II. REGULATORY PROPOSAL

A. Purpose and Effect of Regulatory Proposal

1. Background: Radium 226 and Radium 228

Radium is a naturally occurring radioactive metal that exists in several isotopes. Radium forms when two other radioactive metals, uranium and thorium, decay. These substances are naturally found in rocks and therefore radium is ubiquitous in the environment. Radium is usually measured in picocuries per liter ("pCi/L"). A picocurie is a very small amount of radioactivity. One picocurie is associated with about one trillionth of a gram of radium. Radium 226 emits alpha radiation and radium 228 emits beta radiation. The half-life of radium 226 is 1,600 years while radium 228 has a half-life of 5.7 years. There are two other natural isotopes of radium that have half-lives of just a few days.

Radium may exist in small Illinois streams below sewage treatment plants serving communities that utilize high radium groundwater as drinking water at levels exceeding the existing general use water quality standard of 1 pCi/L. Discharges to larger streams generally receive sufficient dilution to meet the standard. Recent stream concentrations

measured in the Fox River were under 1 pCi/L. The Fox River flows through a region of the State where many communities depend on high radium groundwater, illustrating that ambient river water is very low in radium and that the overall effect of dischargers is minor. The vast majority of Illinois community water supply facilities with high concentrations of radionuclides in their source water (all groundwater) are located in the northern half of the State of Illinois and in a region that stretches from Henderson County in the west to Cook and Lake Counties in the northeast. Sewage treatment plant discharges to very small streams where no dilution water is present have the potential to contain as much as 5 to 10 pCi/L depending on concentrations in the groundwater and efficiency of treatment in removing radium to the sewage sludge.

2. History of the Existing General Use and Lake Michigan Basin Water Quality Standards

The General Use water quality standard for radium 226 (35 Ill. Adm. Code 302.207) is 1 pCi/L and was adopted by the Board in the initial set of Board regulations in 1972. *See*, R71-14. An identical standard appeared in the regulations for the Lake Michigan Basin in 1997 due to a change in the format of how Lake Michigan standards were presented. This standard has been continuously applicable in Lake Michigan since 1972, however. The Board's 1972 opinion accompanying adoption of the radium standard mentioned that the new regulation "retains existing radioactivity levels" which implies that this standard existed prior to 1972 in the Sanitary Water Board (the precursor to the Agency and Board) regulations. A justification document that appears to have accompanied the rulemaking also simply says that the radioactivity standards "retain[s] existing radioactivity levels." The Illinois EPA now believes that the Board's 1972

radium 226 standard did not preserve a then existing state standard but rather was derived from a federal suggested value current at that time.

The Illinois Sanitary Water Board had numerous regional water quality standards in place by 1966 and these included either a radium 226 standard or an "alpha omitters" (sic) standard depending on the region. This may have been due to the fact that standards for interstate waters reflected the neighboring state's preference, some choosing to regulate radium 226 and some alpha emitters. The numeric value was the same for either parameter and for all regions, 3 pCi/L. The category under which this standard was found was Public Water Supply intakes and it was noted that this category of standards was to protect "river quality at the point at which water is withdrawn for treatment." This is consistent with the intent underlying the Public and Food Processing Water Supply Standards waters (35 Ill.Adm.Code Part 302, Subpart C) in the current Board regulations. It is also interesting to note that the standard for strontium 90 was 10 pCi/L and gross beta concentration was 1,000 pCi/L in these Sanitary Water Board standards.[1]

Looking to the origin of the Sanitary Water Board's standards, a federal source called the Public Health Service Drinking Water Standards 1962 (US Dept of Health, 1962) is implicated. In the 1962 document, finished drinking water standards are given; 3 pCi/L for radium 226, 10 pCi/L for strontium 90 and 1,000 pCi/L for gross beta radiation. These are the exact values adopted by the Sanitary Water Board for raw water to be used as public water supply.

In a later federal source, the Green Book (Report of the Committee on Water Quality Criteria. April 1, 1968) a table is given in the section on public water supply

[1] The existing General Use water quality standards for strontium 90 and gross beta are 2 pCi/L and 100 pCi/L respectively (35 Ill. Adm. Code 302.207).

standards which gives two values for each parameter, a 'permissible' value and a 'desirable' value. The permissible value is 3 pCi/L for radium 226 while the desirable value is <1 pCi/L. For strontium 90 these values are 10 and <2 and for gross beta 1,000 and <100 pCi/L, respectively. The Green Book cites the 1962 Public Health Service document as the source of its 'permissible' criteria but it seems that the 'desirable' criteria are its own invention. The Green Book specifically states that these values apply not to finished water but "can be used in setting standards for raw water quality only," which implies that these were intended to be point of intake standards. Taking a finished water standard and applying it as a raw water standard adds conservatism since any treatment provided by the public water supply would reduce concentrations. It appears that the Green Book took this liberty with the 1962 drinking water standards.

The Green Book appears to be the source for the Board's General Use water quality standards of 1972. The Sanitary Water Board adopted its standards before publication of the Green Book and interpreted the 1962 Public Health Service values as point of intake standards for public water supplies. The Board apparently changed two things: making these standards general in applicability and taking the more stringent Green Book 'desirable' value as the standard, simply dropping the "<" sign. The record indicating that the Board said it "preserved the existing standard" may therefore mean that it was the 1968 Green Book "desirable" recommendation rather than the standard applicable to Illinois at that time (Sanitary Water Board) that was being preserved. It seems certain that the ultimate origin of the Sanitary Water Board's radioactivity water quality standards was the federal Public Health Service documents of 1962 while the Board's source was the Green Book. For reasons of concentration (1 instead of 3 pCi/L)

and applicability (General Use instead of Public and Food Processing Water Supply), the present radium standard, and the radioactivity standards in general, are more conservative than intended by the original source.

The current United States Environmental Protection Agency ("U.S. EPA") finished drinking water Maximum Contaminant Level ("MCL") for radium 226 plus radium 228 is 5 pCi/L. This standard was first adopted in 1976, was proposed for revision upward to 20 pCi/L in 1991 but then in 2000 it was determined that the original 5 pCi/L should remain the MCL standard. *See*, 65 FR 76707 (December 7, 2000). This standard is based on the fact that radium is a carcinogen. Persons drinking water over a lifetime will theoretically be protected from cancer at an acceptable risk level (10^{-6} to 10^{-4}) if the concentration of radium in drinking water is less than or equal to 5 pCi/L. Since the MCL is a finished water standard, this makes the previous federal standard of 3 pCi/L applicable at the point of intake (raw water), upon which the Sanitary Water Board standard was based, very conservative. Protecting nearly all waters at 1 pCi/L (current Board general use water quality standard) is excessively stringent. This level of protection is undocumented and unwarranted.

3. Regulatory Language of the Proposal: Proposed Radium 226 Plus 228 Public and Food Processing Water Supply Standard

The Illinois EPA is proposing to make two changes to the existing General Use and Lake Michigan Basin radium water quality standards. First, it is proposed that the standard be changed from 1 pCi/L to 5 pCi/L to correspond to the federal finished drinking water MCL. Second, it is proposed to change the standard from one of general

applicability to a Public and Food Processing Water Supply standard to correspond to the use the standard has been designed to protect.

Proposed changes to 35 Ill. Adm. Code 302.207 and 302.525 and a new Section 302.307 are presented and explained below.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE C: WATER POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

PART 302
WATER QUALITY STANDARDS
SUBPART B: GENERAL USE WATER QUALITY STANDARDS

Section 302.207 Radioactivity

a) Gross beta (STORET number 03501) concentration shall not exceed 100 picocuries per liter (pCi/1).

b) ~~Concentrations of radium 226 (STORET number 09501) and s~~Strontium 90 (STORET number 13501) concentration shall not exceed ~~1 and~~ 2 picocuries per liter (pCi/1)~~respectively~~.

This change to 35 Ill. Adm. Code 302.207 would eliminate the existing general use water quality standard for radium 226, but retain the other existing radioactivity standards for Gross beta and Strontium 90.

SUBPART C: PUBLIC AND FOOD PROCESSING WATER SUPPLY STANDARDS

Section 302.307 Radium 226 and 228

Radium 226 and 228 (STORET number 11503) combined concentration shall not exceed 5 picocuries per liter (pCi/L) at any time.

The addition of this new Section 302.307 to Subpart C of 35 Ill. Adm. Code Part 302 would establish a new public and food processing water supply standard for Radium

226 and 228 combined. This new standard corresponds to the MCL for finished water established by U.S. EPA which has a compliance date of December 31, 2003.

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

Section 302.525 Radioactivity

Except as provided in Section 302.102, all waters of the Lake Michigan Basin must meet the following concentrations in any sample:

a) Gross beta (STORET number 03501) concentrations must not exceed 100 picocuries per liter (pCi/L).

b) ~~Concentrations of radium 226 (STORET number 09501) and s~~Strontium 90 (STORET number 13501) concentration shall not exceed ~~1 and~~ 2 picocuries per liter (pCi/1)~~respectively~~.

This amendment to the Lake Michigan Basin water quality standards for radioactivity would eliminate the existing water quality standard for radium 226 which was taken from the General Use standards in the 1990s when separate (and often more stringent) Lake Michigan Basin water quality standards were adopted. The existing radioactivity standards for Gross beta and Strontium 90 would be retained. Lake Michigan is a public water supply for many communities in the Chicago area. Under the proposed regulations, public water supply intakes on and from Lake Michigan will be protected by the new radium 226 and 228 standard of 5 pCi/L, but will not have a separate Lake Michigan Basin water quality standard for radium.

These changes to the General Use and Lake Michigan Basin water quality standards removes the radium standard and replaces it with a standard that protects surface water intakes for raw drinking water at the established finished drinking water MCL standard. This change is protective of the sensitive designated use of Illinois waters to radium and provides a framework in the regulations for a sensible approach to

radium in surface waters. Under the proposal, radium will now be regulated as a combination of radium 226 and 228 at Public and Food Processing Water Supply intakes at a concentration of 5 pCi/L.

B. Facts in Support

1. Basis for Radium Public and Food Processing Supply Water Quality Standards

Radium is a recognized carcinogen and therefore standards protecting sources of drinking water are necessary and important. However, as far as may be determined, no other uses of water are known to be adversely impacted by radium. The Illinois EPA conducted a literature search for radium impacts to aquatic life and found no scientific papers or other information on this subject. Consultation with U.S. EPA Region V water quality standards staff also found no indication that radium is anything but a threat to human health via drinking water.

Other states regulate radium in a similar manner to that which proposed in the instant regulatory proposal. Oklahoma has a standard of 5 pCi/L at the point of intake for public water supplies. The Ohio River Sanitation Commission ("ORSANCO") has a water quality standard for the Ohio River of 4 pCi/L applicable everywhere in the river outside of mixing zones. ORSANCO considers the entire river as a public water supply. Indiana has an intake raw water standard of 3 pCi/L, which may be an artifact of the old Green Book standard. Several other states were contacted including California, Utah and Arizona, Western states that have had hard rock mining issues. Even these states have no aquatic life water quality standards for radium. Illinois appears to be unique in this regard.

Removing the General Use and Lake Michigan standards and establishing a Public and Food Processing Water Supply standard at the federal MCL for radium 226 and 228 is protective of all uses that may be impacted by radium. Radium would then be regulated in a manner similar to other substances that may be problems in drinking water yet do not have to be regulated as stringently for other uses. These substances are those listed under 35 Ill. Adm. Code 302.304. For example, chloride is regulated at 250 mg/L under Section 302.304 to protect drinking water intakes from excess salts. There is no reason to regulate General Use waters at this low level since other uses of waters are protected at higher chloride concentrations. The existing General Use standard regulates radium unnecessarily and, rather than serving some good purpose, does only harm in causing compliance issues at communities struggling with drinking water problems.

While there is no data for radium to indicate what the threshold concentration would be to protect aquatic life, the Illinois EPA has concluded that it is much higher than the 5 pCi/L level given the lack of concern for this exposure route by the scientific community, the extremely low mass per volume concentration that this standard represents and the fact that barium, a much more common metal related chemically to radium, is not toxic to aquatic life at the low part per million level (mg/L). Presently, the known sources of radium to the surface water environment are public water supplies that utilize high radium groundwater. These are typically no higher in concentration than the groundwater and usually somewhat lower. Even direct discharges of wastewater resulting from treatment of high radium groundwater (should these ever occur) constitute only about double the radium loading expected from a sewage treatment plant. Other types of discharges are unknown. Should a new source of radium be proposed, the

antidegradation standard would be imposed to require the new source to justify the radium discharge, which would include studies of treatment alternatives and steps to minimize any necessary radium discharges.

The Illinois EPA has concluded from its investigation into the scientific information and the lack of concern in other states and at the federal level that drinking water protection is the only beneficial use classification of Illinois streams and lakes that warrants a radium standard. This conclusion is based on concentrations existing or expected to be realized in Illinois surface waters from either naturally occurring conditions or those resulting from water treatment plant wastes or their affiliated publicly owned treatment works ("POTWs") in those parts of the state that rely on radium-containing groundwater as their potable raw water source.

2. Removing Radium from Drinking Water Supplies

On December 7, 2000, in the Federal Register entry referenced above, U. S. EPA finalized the revisions to the 1976 radionuclide regulations, which have since been adopted by the Board on October 4, 2001 in docket R01-20. These regulations retained the existing MCL of 5 pCi/L for radium 226 and 228 combined and 15 pCi/L for gross alpha particle activity. The rule will become effective on December 8, 2003.

All community water systems that serve at least 15 service connections or 25 residents regularly, year-round, are required to meet these MCLs. Over 100 community water supplies in Illinois are impacted by these regulations, due to the presence of radionuclides in their source water used for drinking at concentrations higher than the MCL. The radionuclides found in Illinois wells are naturally occurring and are found primarily in deep bedrock aquifers.

Community water supplies that exceed the MCL have three basic options to lower radium levels: blending with an unaffected source of water, acquiring an alternative source for drinking water, installing treatment for the source water. Since radionuclides are naturally occurring, there is no guarantee that another well as an alternative will solve the problem.

Ion exchange, reverse osmosis and lime softening are considered by USEPA to be the best available technology ("BAT") for removal of radionuclides. Small system (less than 10,000 people) compliance technologies additionally include green sand filtration, hydrous manganese oxide filtration and enhanced coagulation/filtration. All of these radionuclide removal technologies produce residual waste streams that must be addressed. Anywhere from five to twenty-five percent of the water obtained from well sources and treated by one of the radium removal technologies ends up as wastewater containing radionuclides removed from the source water. Depending on the initial groundwater concentration, removal efficiency in the wastewater treatment plant and dilution available in the receiving stream, many affected communities have or will have (once they implement a radium removal technology) a problem with violations of the existing radium water quality standard as it applies to most of the waters of the state.

3. Fate of Radium in Publicly Owned Treatment Works

There is little published information available on the fate of radium in POTWs. Wisconsin probably has more experience with radium than any of the states in Region V. A 1985 report by the Wisconsin Department of Natural Resources studied five Wisconsin communities with varying degrees of radium 226 and 228 in their wastewater. This report reached the following conclusions: biological sludges, both fixed media and

suspended growth, adsorb soluble radium and insoluble radium is also removed in wastewater treatment processes (either by physical settling or biological uptake). All of the communities studied had either activated sludge or Rotating Biological Contactors ("RBCs"). Removals, based on comparing influent concentration to effluent concentration, ranged from 29% to 97%.

The Illinois EPA is aware of only one POTW in the State (Maple Park) that has submitted radium sampling data. The results of the one sampling event showed a very low influent concentration of radium 226 (0.8 pCi/l) that was identical to the effluent concentration. Maple Park employs an aerated lagoon treatment system. No real conclusions can be drawn from these sampling results. The Illinois EPA does not currently require radium sampling of municipal sludge except in cases where the Agency is aware of a specific concern. There is one community that is required to incorporate (cover with soil) its farm land applied sludge because of radium contamination. Determining whether a community is required to incorporate its sludge based on elevated radium levels is determined pursuant to a Memorandum of Understanding between the Illinois EPA and the Illinois Department of Nuclear Safety (now part of the Illinois Emergency Management Agency).

For the purpose of this discussion it can be assumed that the fate of barium in a sewage treatment plant is similar to that of radium. Both are Group IIA metals in the Periodic Table that have similar chemical properties. Sampling influent and effluent data for barium does exist for some POTWs, especially those with approved pretreatment programs. The concentrations of barium at a sampling of these POTWs were well below the anticipated concentrations of radium. Removal efficiencies, based on influent versus

effluent sampling, ranged from 25% to 62%. Four of the five POTWs reviewed utilized activated sludge processes and one used trickling filters. There did not appear to be a correlation between the type of treatment and the removal efficiency.

In summary, nearly all the radium pumped from the ground in drinking water ends up in either sewage sludge or effluent. A search of direct discharges of wastewaters from public water supplies (those systems that bypass sewage treatment plants or occur in unsewered communities) found that none of these exist at communities with radium compliance problems in the groundwater. Where high radium groundwater is utilized, radium in treated sewage effluent is expected at concentrations exceeding the existing General Use standard. When smaller streams serve as the receiving waters for these effluents, the water quality standard is very likely exceeded. The Illinois EPA has not attempted to enforce these existing violations, preferring to see the water quality standards changed to correctly regulate radium and thereby eliminate the violations.

C. Technical Feasibility and Economic Justification

1. Technical Feasibility

There are currently no treatment technologies that specifically address the treatment of high radium concentrations of effluents from POTWs. As explained above, existing treatment technologies appear to have an impact on reducing the radium level in the influent being treated; however, it is very difficult to quantify the level of treatment achieved. The Illinois EPA's proposal to change the water quality standards for radium will focus the attention on limiting discharges that impact public drinking water supplies. Sources that have high levels of radium in the State of Illinois' "radium belt" have high levels of radium in the water being extracted from groundwater wells and used as

drinking water that eventually reaches a POTW following its use. In these communities, since groundwater is the drinking water source rather than having a surface water intake, it is not expected that sources will need to further address radium . If a public drinking water supply is impacted, dischargers will be required to address how the level of radium in their effluent can be reduced to achieve the proposed limit of 5 pCi/L. Since this proposal increases the water quality standard from 1 pCi/L to 5 pCi/L and limits the waters to which the standard applies from General Use Waters and Lake Michigan to surface waters being used as public drinking water supplies, no new technology is expected to be required by this rulemaking.

2. Economic Justification

This rulemaking is expected to have only a positive economic impact as it is both increasing the water quality standard for radium 226 and 228 combined to 5 pCi/L as well as limiting those waters to which the standard applies. This proposal will relieve a regulatory burden from many existing wastewater treatment plants that may or may not be in compliance with the existing general use water quality standard. As no additional regulatory or treatment requirement is being established by this proposal, it will not have a negative economic impact on any existing sources.

D. Affected Facilities and Outreach

This proposed change to the radium water quality standard primarily impacts two types of facilities: POTWs and public drinking water supplies. In theory, this change also impacts industrial dischargers of radium, but the Illinois EPA is not aware of any industrial dischargers that will be impacted by this rulemaking. All POTWs that are attached to public drinking water supplies that use high radium groundwater will benefit

from this regulation. In addition, in the rare instance that a public drinking water supply is installing treatment technology to meet the radium MCL and is directly discharging its backwash to a water of the State, rather than to a POTW, the facility may be impacted by this rulemaking.

On March 12, 2003, Illinois EPA staff that participated in the drafting of this regulatory proposal met with members of the regulated community and interested members of the public to discuss the proposal, answer questions and receive comments. The list of organizations invited to participate in the outreach meeting included:

Metropolitan Water Reclamation District of Greater Chicago
Environmental Law & Policy Center
Illinois Association of Wastewater Agencies
Fox River Water Reclamation District
Sierra Club, Illinois Chapter
Illinois Municipal League
Illinois Environmental Regulatory Group
Prairie Rivers Network
Illinois Department of Natural Resources
Illinois Department of Nuclear Safety
Illinois American Water Company
Illinois Section of the American Water Works Association
Illinois Rural Water Association

Of the organizations and agencies invited to attend the outreach meeting, the following groups sent representatives to the meeting: Prairie Rivers Network, MWRDGC, Illinois Rural Water Association and IERG. Illinois EPA staff from the Bureau of Water Standards Unit, the Division of Public Water Supplies and the Division of Legal Counsel were present to take comments and answer questions.

III. Synopsis of Testimony

Jerry Kuhn is the Manager of the Permit Section of the Division of Public Water Supplies in the Bureau of Water. Mr. Kuhn's testimony will address the impetus for this

rulemaking in the finalizing of the radium drinking water standards and the impact this proposed revision will have on existing and future public water supplies.

Bob Mosher is the Manager of the Standards Unit in the Bureau of Water and as such has primary responsibility for the development of new or revised water quality standards. Mr. Mosher's testimony will address the environmental impact of this proposal and the basis for proposing a Public and Food Processing water quality standard rather than a General Use water quality standard. Mr. Mosher will also testify regarding the literature searches conducted, consultations with U.S. EPA Region V water quality standards staff and research into radium water quality standards of others states that was conducted prior to submittal of this rulemaking proposal.

Blaine Kinsley is the Acting Manager of the Bureau of Water's Industrial Permitting Unit. In addition to responsibility for issuing NPDES permits to industrial dischargers, that Unit is responsible for the review of construction permits for radium removal technologies at public water supply facilities. Mr. Kinsley will provide testimony regarding the radium removal efficiency of conventional sewage treatment plants.

IV. Supporting Documents

Exhibit A: National Primary Drinking Water Regulations; Radionuclide; Final Rule. 65 Fed. Reg. 76,707 (December 7, 2000) (to be codified at 40 C.F.R. part 141).

Exhibit B: In the Matter of: Water Quality Standards Revisions, *Explanation of Proposed Final Draft*, R71-4 (December 21, 1971).

Exhibit C: Federal Water Pollution Control Administration. 1968. Water Quality Criteria - Report of the National Technical Advisory Committee to the Secretary of the Interior. U.S. Government Printing Office Washington, D.C. (Relevant pages attached).

Exhibit D: U.S. Department of Health, Education and Welfare. 1962. Public Health Service Drinking Water Standards. Public Health Service Publication 956. U.S. Government Printing Office Washington. D.C.

Exhibit E: Wisconsin Department of Natural Resources. 1985. The Fate of Radium 226 and Radium 228 in the Wastewater Treatment Process. Report by Mark Williams, P.E., Bureau of Solid Waste Management.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____

Deborah J. Williams
Assistant Counsel
Division of Legal Counsel

Date: January 13, 2004

1021 N. Grand Ave. E
P.O. Box 19276
Springfield, Illinois 62794-9276

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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REVISIONS TO RADIUM WATER QUALITY STANDARDS: PROPOSED NEW 35 Ill. Adm. Code 302.307 AND AMENDMENTS TO 35 Ill. Adm. Code 302.207 and 302.525	)	(Rulemaking-Water)

MOTION FOR ACCEPTANCE

NOW COMES the Illinois Environmental Protection Agency ("Illinois EPA"), by and through its attorney, Deborah J. Williams, and pursuant to 35 Ill. Adm. Code 102.200 and 102.202, moves that the Pollution Control Board accept for hearing the Illinois EPA's proposal for amendments to 35 Ill. Adm. Code Part 302. This regulatory proposal includes:

1. Notice
2. Appearance of attorney for the Illinois Environmental Protection Agency
3. Director Cipriano's Statement of Submittal
4. Statement of Reasons
5. Certification of Origination
6. Exhibits
7. Proposed Amendments
8. Computer disc the Proposed Amendments in Microsoft Word format
9. Proof of Service

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____
Deborah J. Williams
Assistant Counsel
Division of Legal Counsel

DATED: January 13, 2004

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1021 North Grand Avenue East
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This Filing Is Submitted On Recycled Paper

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AGENCY PROPOSAL OF REGULATIONS

Pursuant to Section 27 of the Illinois Environmental Protection Act (415 ILCS 5/27), the Illinois Environmental Protection Agency hereby proposes that the Illinois Pollution Control Board adopt the attached proposed regulations.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____
Renee Cipriano
Director

DATED: January 8, 2004

Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
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(217)782-5544

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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CERTIFICATION OF ORIGINATION

NOW COMES the Illinois Environmental Protection Agency to certify in accordance with 35 Ill.Adm. Code 102.202(h) that this proposal for amendments to 35 Ill. Adm. Code 302 amends the most recent version of these regulations and the Table of Contents as published on the Pollution Control Board's Web site.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____
Deborah J. Williams
Assistant Counsel
Division of Legal Counsel

DATED: January 13, 2004

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POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE C: WATER POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

PART 302
WATER QUALITY STANDARDS

SUBPART A: GENERAL WATER QUALITY PROVISIONS

Section

SUBPART B: GENERAL USE WATER QUALITY STANDARDS

Section

SUBPART C: PUBLIC AND FOOD PROCESSING WATER SUPPLY STANDARDS

Section

SUBPART D: SECONDARY CONTACT AND INDIGENOUS AQUATIC LIFE STANDARDS

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

SUBPART F: PROCEDURES FOR DETERMINING WATER QUALITY CRITERIA

AUTHORITY: Implementing Section 13 and authorized by Sections 11(b) and 27 of the Environmental Protection Act [415 ILCS 5/13, 11(b), and 27]

SOURCE: Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 44, p. 151, effective November 2, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 6 Ill. Reg. 13750, effective October 26,

1982; amended at 8 Ill. Reg. 1629, effective January 18, 1984; peremptory amendments at 10 Ill. Reg. 461, effective December 23, 1985; amended at R87-27 at 12 Ill. Reg. 9911, effective May 27, 1988; amended at R85-29 at 12 Ill. Reg. 12082, effective July 11, 1988; amended in R88-1 at 13 Ill. Reg. 5998, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2899, effective February 13, 1990; amended in R88-21(B) at 14 Ill. Reg. 11974, effective July 9, 1990; amended in R94-1(A) at 20 Ill. Reg. 7682, effective May 24, 1996; amended in R94-1(B) at 21 Ill. Reg. 370, effective December 23, 1996; expedited correction at 21 Ill. Reg. 6273, effective December 23, 1996; amended in R97-25 at 22 Ill. Reg. 1356, effective December 24, 1997; amended in R99-8 at 23 Ill. Reg. 11249, effective August 26, 1999; amended in R01-13 at 26 Ill. Reg. 3505, effective February 22, 2002; amended in R02-19 at 26 Ill. Reg. 16931, effective November 8, 2002; amended in R02-11 at 27 Ill. Reg. 166, effective December 20, 2002; amended in R_____ at _____ Ill. Reg. _____, effective _____.

SUBPART B: GENERAL USE WATER QUALITY STANDARDS

Section 302.207 Radioactivity

a) Gross beta (STORET number 03501) concentration shall not exceed 100 picocuries per liter (pCi/1).

b) ~~Concentrations of radium 226 (STORET number 09501) and s~~Strontium 90 (STORET number 13501) concentration shall not exceed ~~1 and~~ 2 picocuries per liter (pCi/1)~~respectively~~.

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

SUBPART C: PUBLIC AND FOOD PROCESSING WATER SUPPLY STANDARDS

Section 302.307 Radium 226 and 228

Radium 226 and 228 (STORET number 11503) combined concentration shall not exceed 5 picocuries per liter (pCi/L) at any time.

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

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

Section 302.525 Radioactivity

Except as provided in Section 302.102, all waters of the Lake Michigan Basin must meet the following concentrations in any sample:

a) Gross beta (STORET number 03501) concentrations must not exceed 100 picocuries per liter (pCi/L).

b) ~~Concentrations of radium 226 (STORET number 09501) and s~~Strontium 90 (STORET number 13501) concentration shall not exceed ~~1 and~~ 2 picocuries per liter (pCi/1)~~respectively~~.

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