Not on PCB website

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
) R89-14
GROUNDWATER QUALITY STANDARDS)
(35 ILL. ADM. CODE 620))

N O T I C E

TO: Dorothy Gunn, Clerk
Illinois Pollution Control Board
SOIC, Suite 11-500
100 W. Randolph
Chicago, IL 60601

Michelle Tarallo
Hearing Officer
Illinois Pollution Control Board
P.O. Box 505
Dekalb, IL 60115

PLEASE TAKE NOTICE that I have filed with the Clerk of the Illinois Pollution Control Board the Illinois Environmental Protection Agency's PROPOSAL OF REGULATIONS and STATEMENT OF REASONS, a copy of which is served upon you.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: _____

Scott O. Phillips
Senior Attorney
Enforcement Programs
Division of Public Water Supplies

DATE: September 13, 1989

2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

217/782-5544

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
) R89-
GROUNDWATER QUALITY STANDARDS)
(35 ILL. ADM. CODE 620))

PROPOSAL OF REGULATIONS

Pursuant to Section 8(a) of the Illinois Groundwater Protection Act (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 7458(a)), the Illinois Environmental Protection Agency hereby proposes the attached 35 Ill. Adm. Code 620 for adoption by the Illinois Pollution Control Board.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: _____

Bernard P. Killian
D I R E C T O R

DATED: September 13, 1989

2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

217/782-5544

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

STATE OF ILLINOIS)
) SS
COUNTY OF SANGAMON)

PROOF OF SERVICE

I, the undersigned, on oath state that I have served the attached upon the person to whom it is addressed, by placing a copy in an envelope addressed to:

Dorothy Gunn, Clerk
Illinois Pollution Control Board
SOIC, Suite 11-500
100 W. Randolph
Chicago, Illinois 60601

Michelle Tarallo
Hearing Officer
Illinois Pollution Control Board
P.O. Box 505
Dekalb, IL 60115

and sending it by first class mail from Springfield, Illinois, on September , 1989, with sufficient postage affixed.

By: Kathy A. Hall

SUBSCRIBED AND SWORN BEFORE ME

this 26th day of September, 1989.

Barbara K. McGee
Notary Public

OFFICIAL SEAL
BARBARA K. McGEE
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 4-13-91

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD

PART 620
GROUNDWATER QUALITY STANDARDS

SUBPART A: GENERAL

SUBPART B: GROUNDWATER CLASSIFICATION

SUBPART C: GROUNDWATER QUALITY CRITERIA

SUBPART D: NONDEGRADATION OF GROUNDWATER AND PREVENTIVE MANAGEMENT PROCEDURES

SUBPART E: HEALTH ADVISORIES

AUTHORITY: Implementing and authorized by Section 8 of the Illinois Groundwater Protection Act (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 7458).

SOURCE: Adopted at ____ Ill. Reg., _____, effective _____.

NOTE: CAPITALIZATION DENOTES STATUTORY LANGUAGE.

SUBPART A: GENERAL

Section 620.101 Purpose

This Part prescribes standards for the classification, nondegradation, and remediation of groundwater, as well as numerical and narrative groundwater quality criteria.

Section 620.102 Definitions

Except as stated in this section, and unless a different meaning of a word or term is clear from the context, the definition of words or terms in this Part shall be the same as those used in the Act or the Illinois Groundwater Protection Act (Ill. Rev. Stat. 1987, ch. 111 1/2, pars. 7451 et seq.):

"Act" means the Environmental Protection Act (Ill. Rev. Stat. 1987, ch. 111 1/2, pars. 1001 et seq.).

"Agency" means the Illinois Environmental Protection Agency.

"Applicable corrective action" means those practices and procedures that:

May be imposed by a State regulatory authority when a determination has been made that contamination of groundwater has taken place; and

Are necessary to prevent a violation of the criteria set forth in Subpart C.

"Appropriate agency" means the State agency or department with primary regulatory authority over an entity.

"AQUIFER" MEANS SATURATED (WITH GROUNDWATER) SOILS AND GEOLOGIC MATERIALS WHICH ARE SUFFICIENTLY PERMEABLE TO READILY YIELD ECONOMICALLY USEFUL QUANTITIES OF WATER TO WELLS, SPRINGS, OR STREAMS UNDER ORDINARY HYDRAULIC GRADIENTS. (Section 3(c) of the Illinois Groundwater Protection Act (Ill. Rev. Stat. 1987, ch. 111 1/2, pars. 7453(b))

"Board" means the Illinois Pollution Control Board.

"Carcinogen" means a chemical, or complex mixture of closely related chemicals, which has been determined in accordance with USEPA Guidelines for Carcinogenic Risk Assessment (51 Fed. Reg 33992-34003 (September 21, 1986)) to have either sufficient or limited human evidence or sufficient animal evidence supporting a causal association between exposure to the chemical and an increase in incidence of benign or malignant neoplasms or substantial decrease in the latency period between exposure and onset of neoplasms.

"Detect" or "detection" means found at:

USEPA's Method Detection Limit as described in 54 Fed. Reg. 22100 (May 22, 1989); or

USEPA's Method Quantification Limit as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 (Third Edition, 1986, as amended by Revision I (December 1987)).

"Department" means the Illinois Department of Energy and Natural Resources.

"GROUNDWATER" MEANS UNDERGROUND WATER WHICH OCCURS WITHIN THE SATURATED ZONE AND GEOLOGIC MATERIALS WHERE THE FLUID PRESSURE IN THE PORE SPACE IS EQUAL TO OR GREATER THAN ATMOSPHERIC PRESSURE. (Section 3.64 of the Act)

"Groundwater criteria" or "criteria" means the water quality criteria for groundwater set forth in Subpart C.

"Hydrologic balance" means the relationship between the quality and quantity of water inflow to, water outflow

from, and water storage in a hydrologic unit such as a drainage basin, aquifer, soil zone, lake, or reservoir. It encompasses the dynamic relationships among precipitation, runoff, evaporation, and changes in ground and surface water storage.

"Lateral area of influence under normal operational conditions" means the area determined in accordance with procedures set forth in Subpart B of 35 Ill. Adm. Code 671.

"Off-site" means any site that is not on-site.

"On-site" means the same or geographically contiguous property which may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a crossroads intersection and access is by crossing as opposed to going along the right-of-way. Noncontiguous properties owned by the same person but connected by a right-of-way which he controls and to which the public does not have access is also considered on-site property.

"Practical Quantification Level" or "PQL" means the lowest concentration or level that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions.

"Regulated entity" means a unit, facility, site, or area.

"Return flow" means that part of surface water derived from groundwater discharge (sometimes referred to as base flow).

"Spring" means a natural surface discharge of an aquifer from rock or soil.

"Threshold" means the lowest dose of a chemical at which a specified measurable effect is observed and below which it is not observed.

"Treatment" means the technology, treatment techniques, or other procedures for compliance with 35 Ill. Adm. Code: Subtitle F.

"Unit" means ANY DEVICE, MECHANISM, EQUIPMENT, OR AREA (EXCLUSIVE OF LAND UTILIZED ONLY FOR AGRICULTURAL PRODUCTION). (Section 3.62 of the Act)

"USEPA" or "U.S. EPA" means the United States Environmental Protection Agency.

Section 620.103 Prohibition

No person shall cause, threaten, or allow a violation of the Act or regulations adopted by the Board thereunder, including but not limited to this Part.

Section 620.104 Incorporations by Reference

a) The Board incorporates the following material by reference:

1) 40 CFR 300 AND 141 (1989) (Available from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401, (202-783-3238));

2) 51 Fed. Reg 33992-34003 (September 21, 1986);

3) 54 Fed. Reg. 22100 (May 22, 1989);

4) "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 (Third Edition, 1986, as amended by Revision I (December 1987). (Available from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401, (202-783-3238))

5) "Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Groundwater Samples for Selected Unstable Constituents," Book I, Chapter D2 (1981). (Available from: U.S. Geological Survey; Washington, D.C.)

6) "Practical Guide for Ground-Water Sampling," EPA Publication No. EPA/600/2-85/104 (September 1985). (Available from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401, (202-783-3238))

7) "RCRA Groundwater Monitoring Technical Enforcement Guidance Document," EPA Publication No. OSWER-9950.1 (September 1986). (Available from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401, (202-783-3238))

8) "Methods Manual for Organics in Drinking Water," EPA, EMSL (June 1989). (Available from: EPA Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268)

9) "Methods of Chemical Analysis of Water and Wastes," EPA Publication No. EPA-600/4-79-020, (March 1979). (Available from: ORD Publications, CERI, EPA, Cincinnati, Ohio 45268)

b) This incorporation includes no later amendments or editions.

Section 620.105 Exemption from General Use Standards and Public and Food Processing Water Supply Standards

Groundwater is not required to meet the general use standards and public and food processing water supply standards of Subparts B and C of 35 Ill. Adm. Code 302.

Section 620.106 Exclusions

Subparts C and D do not apply to groundwaters discharged to surface waters as a result of:

a) Subsurface drains, tunnels, storm sewers, tiles, sewers, and other man-made conduits.

b) Dewatering operations associated with construction or excavation:

1) For the discovery, development, or production of stone, sand, gravel, or coal; or

2) For other structures (except for structures associated with the discovery, development, or production of oil or gas) where dewatering is necessary (e.g., installation of tanks, foundations, piers, or pilings).

c) Dewatering operations designed to protect publicly-owned permanent structures or facilities from the adverse effects of high groundwater levels.

SUBPART B: GROUNDWATER CLASSIFICATION

Section 620.201 Classification of Groundwater

a) All groundwater of the State is designated as one of the following four classes of groundwater:

1) Class I: Potable Resource Groundwater;

2) Class II: General Resource Groundwater;

3) Class III: Remedial Groundwater; or

4) Class IV: Naturally Limited Groundwater.

b) Class I: Potable Resource Groundwater is:

1) Groundwater within a setback zone or lateral area of influence under normal operational conditions, whichever is greater in area but not to exceed a lateral distance of 500 feet from the wellhead, of a potable water supply well that is not a community water supply well.

2) Groundwater within a lateral distance of 1500 feet from the wellhead of a community water supply well.

3) If the lateral area of influence under normal operational conditions of a community water supply well exceeds 1000 feet from the wellhead:

A) Commencing five years after the effective date of this Part or five years after the date of issuance of a construction permit by the Agency under the Act for a new community water supply well (whichever occurs later), groundwater within a lateral distance of 3000 feet from the wellhead of the community water supply well if both of the following conditions are met:

i) Groundwater is used as part of the water supply for not less than 60 days in each calendar year; and

ii) The community water supply well is not a stand-by or emergency well.

B) The Board may extend the lateral distance described in subsection (b)(3)(A) in accordance with Section 620.203.

4) If a community water supply has been allocated Lake Michigan water after July 1, 1980, pursuant to the Level of Lake Michigan Act (Ill. Rev. Stat. 1987, ch. 19, pars. 119 et seq., as amended):

A) Commencing two years after the effective date of this Part, groundwater within a lateral distance of 3000 feet from the wellhead of the community water supply well if the following conditions are met:

i) Groundwater was used as part of the water supply prior to the allocation, but such use has ceased due to an allocation after July 1, 1980, of Lake

Michigan water pursuant the Level of Lake Michigan Act; and

ii) The community water supply well has not been abandoned.

B) The Board may extend the lateral distance described in subsection (b)(4)(A) in accordance with Section 620.203.

5) Pursuant to the petition procedures set forth in Section 620.202, groundwater found by the Board to be capable of being used directly for potable use with no treatment or with treatment to assure health-based concerns.

(Board Note: The setback zones described above are established or authorized by law. Under Section 6a of the Illinois Water Well Construction Code (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 116.116a), a minimum setback zone of 200 feet is established around each non-community, semi-private or private water system well. Under Section 14.2 of the Act, a minimum setback zone of 200 feet is established around each community water supply well; provided, however, that if the well derives water from an unconfined shallow fractured or highly permeable bedrock formation or from an unconsolidated sand and gravel formation, the minimum setback zone is 400 feet. Under Section 14.3 of the Act, a maximum setback zone of up to 1000 feet can be established around a community water supply well by a county or municipality served by the water supply, or by the Board.)

c) Class II: General Resource Groundwater is:

1) All groundwater in the State that is not Class I: Potable Resource Groundwater, Class III: Remedial Groundwater, or Class IV: Naturally Limited Groundwater; or

2) Pursuant to the petition procedures set forth in Section 620.202, groundwater found by the Board to be capable of being used for agricultural, industrial, recreational, or other beneficial uses, including but not limited to return flow to surface water.

d) Class III: Remedial Groundwater is:

1) Groundwater contaminated from sites that are listed on the:

A) National Priorities List (40 CFR 300); or

B) State Remedial Action Priorities List (35 Ill. Adm. Code 860.210), except those sites that are listed in the Remediated Releases Group.

2) Groundwater contaminated from leaking underground storage tank sites that are the subject of corrective action approved by the Agency under Section 22.18b of the Act, until corrective action at such sites is completed.

3) Groundwater within an area which is the subject of corrective action approved by the Agency under 35 Ill. Adm. Code: Subtitle G, until corrective action is completed.

4) Groundwater that is undergoing corrective action under 35 Ill. Adm. Code 615 or 616, until corrective action is completed.

5) At a coal mining site permitted by the Illinois Department of Mines and Minerals under the Surface Coal Mining Land Conservation and Reclamation Act (Ill. Rev Stat. 1987, ch. 96 1/2, pars. 7901.01 et seq., as amended) for which the hydrologic balance is disturbed, groundwater within an underground coal mine, or within the area from which overburden has been removed at a coal mining site, until reclamation and related groundwater monitoring have been completed.

6) Groundwater within a previously mined area, until groundwater monitoring demonstrates that the groundwater is capable of beneficial use. For purposes of this subsection (d)(6), the term "previously mined area" means land disturbed or affected by earlier coal mining operations that was not reclaimed in accordance with the requirements of 62 Ill. Adm. Code 1700 - 1850.

7) Pursuant to the petition procedures set forth in Section 620.202, groundwater found by the Board to be:

A) For Class I: Potable Resource Groundwater, contaminated by human-induced action and:

i) Temporarily unsuitable for potable use with no treatment; or

ii) Capable of use with both treatment and blending to assure health-based concerns.

B) For Class II: General Resource Groundwater, contaminated by human-induced action and temporarily unsuitable for being used directly for agricultural, industrial, recreational, or other beneficial uses, including but not limited to return flow to surface water, with no treatment.

C) For Class IV: Naturally Limited Groundwater, contaminated by human-induced action.

e) Class IV: Naturally Limited Groundwater is:

1) Groundwater that naturally contains more than 10,000 mg/l of total dissolved solids;

2) Groundwater which has been designated by the Board as an exempt aquifer pursuant to 35 Ill. Adm. Code 730.104; or

3) Pursuant to the petition procedures set forth in Section 620.202, groundwater found by the Board to have naturally occurring characteristics that render it generally unsuitable for potable or general use.

Section 620.202 Reclassification of Groundwater by Site-Specific Rule

a) In accordance with 35 Ill. Adm. Code 102, a site-specific rule proposal may be filed with the Board to reclassify specific groundwater as Class I: Potable Resource Groundwater, Class II: General Resource Groundwater, Class III: Remedial Groundwater, or Class IV: Naturally Limited Groundwater.

b) In any site-specific regulatory proceeding to reclassify specific groundwater, the Board shall consider the following factors:

1) Whether the petitioner has identified, with sufficient specificity, the particular groundwater for which reclassification is requested;

2) Whether the petitioner proposes a change or restriction of use which is beneficial or necessary;

3) The existing and anticipated use of the specific groundwater;

4) The existing and anticipated quality of the specific groundwater;

5) The existing and anticipated contamination, if any, of the specific groundwater;

6) The technical feasibility and economic reasonableness of eliminating or reducing contamination of the specific groundwater or of maintaining existing water quality;

7) Whether contaminants will continue to affect the specific groundwater;

8) The existing and anticipated impact on potable water supplies by either contamination or interruption;

9) The availability and cost of alternate water sources or of treatment for those users adversely affected;

10) The impact on property values; and

11) For return flow groundwater, the impact on the quality of surface waters.

c) Specific groundwater may be reclassified in a site-specific regulatory proceeding only if such groundwater will not cause, threaten, or allow contamination or pollution of other waters of the State.

Section 620.203 Reclassification of Certain Groundwater by Adjusted Standard

a) This section applies to Class II: General Resource Groundwater contiguous to Class I: Potable Resource Groundwater for community water supplies that meet both of the conditions set forth in Section 620.201(b)(3)(A) or set forth in Section 620.201(b)(4)(A).

b) No later than 90 days before the dates specified in Section 620.201(b)(3)(A) or specified in Section 620.201(b)(4)(A), the Agency, in consultation with the Department, may file a petition for an adjusted standard pursuant to Section 28.1 of the Act to extend Class I: Potable Resource Groundwater beyond 3000 feet from the wellhead.

c) The Board shall grant an adjusted standard extending Class I: Potable Resource Groundwater beyond 3000 feet from the community water supply wellhead if the proposed extension is within a proximate aquifer.

d) Nothing in this section shall in any way limit the Board in reclassifying groundwater as Class I: Potable Resource Groundwater pursuant to Section 620.202.

e) For purposes of this section, "proximate aquifer" means that portion of an aquifer that is necessary to supply potable water for a period of 20 years under normal operational conditions. A "proximate aquifer" is a three-dimensional structure, but for regulatory purposes is described by subsurface characteristics, and by distances in feet projected onto the land surface where such aquifers are susceptible to contamination.

f) All Agency determinations under this section shall reflect a consistency of review among prospective sites. To insure such consistency, the Agency shall adopt criteria for evaluation and review of groundwater for reclassification by adjusted standard under this section.

Section 620.204 Class I: Potable Resource Groundwater Waiver

a) The owner of a potable water supply well other than a community water supply well may secure a waiver of a Class I: Potable Resource Groundwater designation from an adjacent site owner if the following three conditions are met:

1) The owner of the water supply well also owns a source of contamination on the same site;

2) The Class I: Potable Resource Groundwater designation on the adjacent site is caused by the water supply well on such owner's site; and

3) No other Class I: Potable Resource Groundwater designation on the adjacent site overlaps, or is contiguous to, the subject Class I: Potable Resource Groundwater area.

b) A written request for a waiver shall be made to the owner of the adjacent site and to the Agency. Such request shall identify the source of the contamination, any actions being taken to reduce or control the contamination, and generally describe the possible effect of such contamination upon the adjacent site. Upon receipt of such a request, the Agency may conduct an on-site evaluation and provide written comments to the respective owners. Waiver may be granted by the owner of the adjacent site no less than 90 days after receipt of the request with a copy provided to the Agency. If the owner of the adjacent site has not granted a waiver within 120 days after receipt of the

request, the requesting owner may file a petition with the Board for reclassification of groundwater pursuant to Section 620.202.

SUBPART C: GROUNDWATER QUALITY CRITERIA

Section 620.301 Groundwater Quality Criteria for Class I: Potable Resource Groundwater

a) Applicability

This section contains groundwater quality criteria applicable to Class I: Potable Resource Groundwater.

b) Inorganic Chemical Constituents

Concentrations of the following chemical constituents shall not be exceeded, except due to natural causes:

Constituent	Units	Criteria
Arsenic	mg/l	0.03
Barium	mg/l	5
Cadmium	mg/l	0.005
Chloride	mg/l	200
Chromium	mg/l	0.1
Copper	mg/l	1.3
Cyanide	mg/l	0.2
Fluoride	mg/l	4.0
Gross Alpha	pCi/l	15
Iron	mg/l	5.0
Lead	mg/l	0.05
Manganese	mg/l	0.15
Mercury	mg/l	0.002
Nitrate-Nitrogen	mg/l	10.0
Selenium	mg/l	0.05
Silver	mg/l	0.05
Sulfate	mg/l	400
Total Dissolved Solids (TDS)	mg/l	1,200

c) Organic Chemical Constituents

Except as provided otherwise in subsection (d), concentrations of the following chemical constituents shall not be exceeded:

Constituent	Criteria (mg/l)

Alachlor*	0.002
Aldicarb	0.01
Atrazine	0.003
Benzene*	0.005
Carbofuran	0.04
Carbon Tetrachloride*	0.005
Chlordane*	0.002
Endrin	0.0002
Heptachlor*	0.0004
Heptachlor Epoxide*	0.0002
Lindane	0.0002
2,4-D	0.07
ortho-Dichlorobenzene	0.6
para-Dichlorobenzene	0.075
1,2-Dichloroethane*	0.005
1,1-Dichloroethylene	0.007
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1
Ethylbenzene	0.7
Methoxychlor	0.4
Monochlorobenzene	0.1
Pentachlorophenol	0.2
Polychlorinated Biphenyls*	0.0005
Styrene*	0.1
2,4,5-TP	0.05
Tetrachloroethylene*	0.005
Toluene	2.0
Toxaphene*	0.005
1,1,1-Trichloroethane	0.2
Trichloroethylene*	0.005
Vinyl Chloride*	0.002
Xylenes	10.0

*Denotes a carcinogen.

d) Complex Organic Chemical Mixtures

Concentrations of the following chemical constituents of gasoline, diesel fuel, or heating fuel shall not exceed the following:

Constituent	Criteria (mg/l)
Benzene*	0.005
BETX**	12.705

*Denotes a carcinogen.

**Sum of the concentrations of benzene, ethylbenzene, toluene, and xylenes.

Section 620.302 Groundwater Quality Criteria for Class II: General Resource Groundwater

a) Applicability

This section contains groundwater quality criteria applicable to Class II: General Resource Groundwater.

b) Inorganic Chemical Constituents

Except as provided otherwise in subsection (e), concentrations of the following chemical constituents shall not be exceeded, except due to natural causes:

Constituent	Criteria (mg/l)
Arsenic	0.2
Barium	5
Boron	2.0
Cadmium	0.05
Chromium	1.0
Cobalt	1.0
Copper	1.3
Cyanide	1.0
Fluoride	2.0
Lead	0.1
Manganese	10
Mercury	0.01
Nickel	20
Nitrate-Nitrogen	100
Selenium	0.02
Total Dissolved Solids (TDS)	1,200
Zinc	10

c) Organic Chemical Constituents

Except as provided otherwise in subsection (d), concentrations of the following chemical constituents shall not be exceeded:

Constituent	Criteria (mg/l)
Alachlor*	0.010
Aldicarb	0.05
Atrazine	0.015
Benzene*	0.025

Carbofuran	0.2
Carbon Tetrachloride*	0.025
Chlordane*	0.01
Endrin	0.001
Heptachlor*	0.002
Heptachlor Epoxide*	0.001
Lindane	0.001
2,4-D	0.35
ortho-Dichlorobenzene	1.5
para-Dichlorobenzene	0.375
1,2-Dichloroethane*	0.025
1,1-Dichloroethylene	0.035
cis-1,2-Dichloroethylene	0.2
trans-1,2-Dichloroethylene	0.5
Ethylbenzene	1.0
Methoxychlor	2.0
Monochlorobenzene	0.5
Pentachlorophenol	1.0
Phenols	0.1
Polychlorinated Biphenyls*	0.0025
Styrene*	0.5
2,4,5-TP	0.25
Tetrachloroethylene*	0.025
Toluene	5.0
Toxaphene*	0.025
1,1,1-Trichloroethane	1.0
Trichloroethylene*	0.025
Vinyl Chloride*	0.01
Xylenes	10

*Denotes a carcinogen.

d) Complex Organic Chemical Mixtures

Concentrations of the following chemical constituents of gasoline, diesel fuel, or heating fuel shall not exceed the following:

Constituent	Criteria (mg/l)
Benzene*	0.025
BETX**	16.025

*Denotes a carcinogen.

**Sum of the concentrations of benzene, ethylbenzene, toluene, and xylenes.

e) Alternate TDS Criteria

1) Notwithstanding subsection (b), after reclamation at a coal mine has been completed, the concentration of total dissolved solids (TDS) shall not exceed:

A) The post-mining ambient level or 3000 mg/l, whichever is less, for groundwater within an area:

i) Bounded by a perimeter located 200 feet around the area from which overburden has been removed; or

ii) From which coal has been extracted from an underground coal mine; or

B) The post-mining ambient level or 5000 mg/l, whichever is less, for groundwater in underground coal mines and in areas reclaimed after surface coal mining if the Illinois Department of Mines and Minerals and the Agency have determined that no significant resource groundwater existed prior to mining.

2) The criteria set forth in subsection (e)(1) shall apply only if the coal mine has been permitted by the Illinois Department of Mines and Minerals, and applicable groundwater quality monitoring has been performed and reported to such Department.

Section 620.303 Groundwater Quality Criteria for Class III: Remedial Groundwater

a) Prior to the completion of remediation or reclamation, Class III: Remedial Groundwater criteria is equal to the existing concentration of contaminants in the groundwater underlying the site, as determined by groundwater monitoring.

b) Notwithstanding subsection (a), the criteria to be achieved for remediation or reclamation of Class III: Remedial Groundwater shall be as follows:

1) On-site, Section 620.302.

2) Off-site, criteria set forth in this Subpart appropriate to its class.

Section 620.304 Compliance

a) Except as provided otherwise in subsection (b), groundwater shall meet the criteria set forth in Subpart C appropriate to its class.

b) Groundwater on-site shall meet the criteria set forth in Section 620.302 if such groundwater is otherwise classified as Class I: Potable Resource Groundwater or Class II: General Resource Groundwater.

c) The criteria described in subsection (b) shall apply at the vertical surface located at the hydraulically downgradient boundary that extends down into the groundwater underlying the source of contamination, if present at the site, or underlying other structures at the site.

d) Groundwater off-site shall meet the criteria set forth in Subpart C that is appropriate to its class.

e) Compliance with this Subpart shall be determined at any point at which groundwater is withdrawn from any water well or monitoring well that meets the following standards:

1) For a potable well other than a community water supply well, such potable well has been permitted by the Department of Public Health, or has been located and constructed (or reconstructed) to meet the Illinois Water Well Construction Code (Ill. Rev. Stat. 1987, ch. 111 1/2, pars. 116.111 et seq., as amended) and 35 Ill. Adm. Code 920.

2) For a community water supply well, such community water supply well has been permitted by the Agency, or has been constructed in accordance with criteria adopted by the Agency pursuant to 35 Ill. Adm. Code 602.115.

3) For a water well other than a potable water well (e.g., a livestock watering well or an irrigation well) such water well has been permitted by the Department of Public Health or the Department of Mines and Minerals, or has been located and constructed (or reconstructed) to meet the Illinois Water Well Construction Code (Ill. Rev. Stat. 1987, ch. 111 1/2, pars. 116.111 et seq., as amended) and 35 Ill. Adm. Code 920.

4) For a monitoring well:

The well meets the following requirements:

A) Monitoring wells must be constructed in a manner that will enable the collection of groundwater samples.

B) Well casings and screens must be made from durable material resistant to expected chemical or physical degradation, and must be made of materials that do not interfere with the quality of groundwater samples being collected. Well casings and screens must be made from fluorocarbon resins, stainless steel, or other similarly inert material in the saturated zone if the well casings or screens may interfere with the sampling results.

C) The annular space opposite the screened section of the well (i.e., the space between the bore hole and well screen) must be filled with gravel or sand if necessary to collect groundwater samples. The annular space above and below the well screen must be sealed to prevent migration of water from adjacent formations and the surface to the sampled depth.

f) For a spring, compliance with this Subpart shall be determined at the point of discharge.

Section 620.305 Monitoring and Analytical Requirements

a) Representative Samples

A representative sample shall be taken at the following locations:

1) For a potable well other than a community water supply well, the sample shall be taken at a sample tap located prior to any treatment or at the nearest tap to the potable water well.

2) For a community water supply well, the sample shall be taken at the sample tap prior to any treatment.

3) For a water well other than a potable water well (e.g., a livestock watering well or an irrigation well), the sample shall be taken at a point prior to any treatment or chemical addition.

4) For a monitoring well, the sample shall be withdrawn from the well and filtered prior to inorganic analysis with a 0.45 micron filter.

5) For a spring, the sample shall be taken at the point of discharge prior to any mixing with surface waters and shall be filtered prior to inorganic analysis with a 0.45 micron filter.

b) Sampling and Analytical Procedures

1) Samples shall be collected in accordance with the procedures set forth in the documents listed in Section 620.104(a)(4) through (a)(9).

2) Groundwater elevation in a groundwater monitoring well must be determined and recorded each time groundwater is sampled.

3) The analytical methodology used for the analysis of carcinogens denoted in Sections 620.301 or 620.302 must be consistent with both of the following:

A) The methodology must have a PQL at or below the groundwater criteria set forth in this Subpart; and

B) The methodology must be consistent with methodologies contained in the documents listed in Section 620.104(a)(8) and (a)(9).

c) Reporting Requirements

1) This subsection shall not apply to activities subject to Subpart B of 35 Ill. Adm. Code 615 or 616 or units subject to Subpart F of 35 Ill. Adm. Code 724.

2) At a minimum, groundwater monitoring analytical results must include information, procedures and techniques for:

A) Sample collection (including but not limited to name of sample collector, time and date of the sample, method of collection, and identification of the monitoring location);

B) Sample preservation and shipment (including but not limited to field quality control);

C) Analytical procedures (including but not limited to the method detection limits and the PQLs); and

D) Chain of custody control.

SUBPART D: NONDEGRADATION OF GROUNDWATER AND PREVENTIVE MANAGEMENT PROCEDURES

Section 620.401 Prohibition Against Downgrading of Any Groundwater Class

a) No person shall cause, threaten, or allow:

1) Class I: Potable Resource Groundwater to become Class II: General Resource Groundwater or Class III: Remedial Groundwater;

2) Class II: General Resource Groundwater to become Class III: Remedial Groundwater;

3) Class III: Remedial Groundwater to become contaminated so as to further limit the usability of such groundwater; or

4) Class IV: Naturally Limited Groundwater to become contaminated so as to further limit the usability of such groundwater. Nothing in this subsection (a)(4) shall limit underground injection pursuant to a permit issued by the Agency under the Act or the Department of Mines and Minerals under "An Act in relation to oil, gas, coal and other surface and underground resources and to repeal an Act herein named" (Ill. Rev Stat. 1987, ch. 96 1/2, pars. 5401 et seq., as amended).

b) Nothing in this section shall prevent the Board from reclassifying groundwater pursuant to Section 620.202.

Section 620.402 Initiating Preventive Management Procedures

a) Applicability

This section shall apply to:

1) New sites located within Class I: Potable Resource Groundwater or Class II: General Resource Groundwater.

2) Existing sites located within a setback zone.

b) Initiating Preventive Management Response

1) A preventive management response under Section 620.403 shall be undertaken:

A) For Class I: Potable Resource Groundwater, whenever a contaminant listed in:

i) Section 620.301(b) is detected, except due to natural causes; or

ii) Section 620.301(c) or (d) is detected.

B) For Class II: General Resource Groundwater, whenever:

i) Arsenic, cadmium, chromium, cyanide, lead, or mercury is detected, except due to natural causes; or

ii) A contaminant listed in Section 620.302(c) or (d) is detected.

2) A detection under subsection (b)(1) may be determined by any one or more of the following:

A) State agencies which are authorized to conduct or are recipients of groundwater quality monitoring data (e.g., Illinois Environmental Protection Agency, Department of Public Health, Department of Mines and Minerals, Department of Agriculture, Office of the State Fire Marshal, or Department of Energy and Natural Resources); or

B) The owner or operator of any regulated entity for which groundwater quality monitoring must be performed pursuant to State or Federal law or regulation, including but not limited to any owner or operator of a water supply well who conducts groundwater quality monitoring.

c) Definitions

For purposes of this section, the term:

1) "New site" means:

A) A parcel of land that, after the effective date of this Subpart, has changed property class to commercial business, commercial office, or industrial; or

B) Other than a site for agricultural production, a site that after the effective date of this Subpart:

i) Undergoes major reconstruction; or

ii) At which a new potential primary or secondary source is located.

2) "Existing site" means a site that is not a new site.

3) "Major reconstruction" means the fixed capital costs of new components constructed within a 2-year period exceed 50% of the fixed capital cost of a comparable entirely new facility. New components do not include any components necessary for pollution control.

4) "Parcel" means a contiguous area of land under one ownership and one general use as determined by a tax assessor for purposes of real estate taxes.

5) "Property class" means the class assigned by a tax assessor to real property for purposes of real estate taxes.

(Board Note: The parcel and property class [rural property, residential vacant land, residential with dwelling, commercial residence, commercial business, commercial office, or industrial] is identified on the property record card maintained by the tax assessor in accordance with the Illinois Real Property Appraisal Manual [February 1987], published by the Illinois Department of Revenue, Property Tax Administration Bureau.)

Section 620.403 Preventive Management Response Procedures

a) If a constituent identified under Section 620.402(b)(1) is detected by an owner or operator of a regulated entity for which groundwater monitoring is required under State or Federal law or regulation, or by a State regulatory agency or department, the detection shall be confirmed by resampling the water well or monitoring well. This resampling shall be made within 30 days of the date on which the first sample analyses are received. If the resample analysis confirms the detection, the appropriate agency shall be notified within 30 days of the date on which the results of the sample analyses are received, but no later than 90 days after the results of the first sample were received.

b) If the sampling location is a community water supply well and the Agency receives notice under subsection (a) that a detection has been confirmed, the Agency shall notify the owner or operator of any potential primary source, potential secondary source, potential route, or community water supply well known to the Agency that is located within 3,000 feet of the sampling location indicating the detection.

c) If the sampling location is a non-community water supply well or if multiple private water supply wells may be adversely affected, and the Department of Public Health receives notice under subsection (a) that a detection has occurred, the Department of Public Health shall conduct a sanitary survey within 500 feet of the sampling location.

d) The owner or operator notified under subsection (b) shall, within 30 days of the date of issuance of such notice, sample each of their own water wells or monitoring wells for the parameter identified in the notice if the parameter or material containing such parameter is or has been stored, disposed, or otherwise handled at the site. If a constituent identified under Section 620.402(b)(1) is detected, then the water well shall be resampled within 30 days of the date on which the first sample analyses are received. The results of each analysis shall be reported to the Agency within 90 days of the date of issuance of the notice.

e) If the Agency receives notice under subsection (a) that a contaminant identified under Section 620.402(b)(1)(A) has been detected, the Agency shall:

1) Conduct a well site survey pursuant to Section 17.1(d) of the Act, if such a survey has not been previously conducted within the last 3 years; and

2) Unless a groundwater protection needs assessment has been prepared pursuant to Section 17.1 of the Act, identify those sites or activities which represent a hazard to the continued availability of groundwaters for public use.

Section 620.404 Corrective Action

a) Class I: Potable Resource Groundwater

1) This subsection applies to owners and operators of regulated entities that are a source of the constituent detected under Section 620.402(b)(1)(A).

2) Except as provided otherwise in subsection (c), an owner and operator shall be subject to applicable corrective action if any of the following occurs:

A) The criteria set forth below are exceeded:

Constituent	Criteria (mg/l)

Pentachlorophenol	0.03
para-Dichlorobenzene	0.005
ortho-Dichlorobenzene	0.01
Ethylbenzene	0.03
Styrene	0.01
Toluene	0.04
Xylenes	0.02

(Board Note: The criteria set forth in subsection (a)(2)(A) are USEPA's Secondary Maximum Contaminant Levels ("SMCLs") for the listed constituents. These SMCLs are based upon taste and odor thresholds. The SMCLs are less than USEPA's Maximum Contaminant Levels ("MCLs"). USEPA's MCLs are health-based and are the criteria set forth in Section 620.301. The SMCLs listed in subsection (a)(2)(A) are less than the corresponding MCLs for such constituents because the taste and odor threshold is less than the health-based threshold of the MCLs.)

B) For a constituent other than those identified in subsection (a)(2)(A), the constituent is denoted as a carcinogen in Section 620.301(c) or (d) and equals or exceeds the criteria set forth in that section;

C) For a constituent other than those identified in subsections (a)(2)(A), (a)(2)(B), or (a)(2)(D), a statistically significant increase occurs above background (as determined pursuant to other regulatory procedures (e.g., 35 Ill. Adm. Code 616 or 724)) for a constituent listed in Section 620.301; or

D) For a chemical constituent of gasoline, diesel fuel, or heating fuel, the constituent exceeds the following:

Constituent	Criteria (mg/l)
Benzene	0.005
BETX	0.095

b) Class II: General Resource Groundwater

1) This subsection applies to owners and operators of regulated entities that are a source of the constituent detected under Section 620.402(b)(1)(B).

2) Except as provided otherwise in subsection (c), an owner and operator shall be subject to applicable corrective action if the constituent exceeds:

A) The criteria for arsenic, cadmium, chromium, cyanide, lead, or mercury listed in Section 620.301(b); or

B) The criteria listed in Section 620.301(c) or (d).

c) Exception

1) The owner or operator of a regulated entity shall be subject to applicable corrective action unless the owner or operator demonstrates that:

A) The contamination is as a result of contaminants remaining in groundwater from a prior release for which appropriate corrective action was undertaken in accordance with laws and regulations in existence at the time of the release;

B) The source of contamination is due to background; or

C) The detection resulted from error in sampling, analysis, or evaluation.

2) In making a demonstration under this subsection (c), the owner or operator must, when submitting the notification required under Section 620.403(a), submit a report to the Agency which demonstrates one or more of the circumstances described in subsection (c)(1).

Section 620.405 Adjusted Standard from Applicable Corrective Action

a) Except as provided otherwise in subsection (e), if a regulated entity is subject to applicable corrective action, the owner or operator of the regulated entity may file a petition for an adjusted standard pursuant to Section 28.1 of the Act as an alternative to such owner or operator proceeding with the corrective action.

b) A petition under this section must be filed within 90 days of the date on which the State regulatory agency notifies the owner or operator that corrective action is required. Notice of the filing of the petition must be served on the agency or department that issued the notice of corrective action, the appropriate general

purpose unit of local government, and any affected potable water supply.

c) The Board shall grant an adjusted standard as an alternative to corrective action if the petitioner reasonably demonstrates that significant adverse economic or social impacts will result from implementation of the corrective action and that residual environmental or health risks posed by the contaminant are not a significant hazard. The adjusted standard shall not exceed the minimum adjustment necessary as an alternative to corrective action, but in no case shall the adjustment exceed the numerical criteria set forth in Sections 620.301 (for Class I: Potable Resource Groundwater) or 620.302 (for Class II: General Resource Groundwater).

d) The Board may stay the applicable corrective action until the Board renders a final decision on the petition.

e) The Board shall not grant an adjusted standard under this section to the owner or operator of any regulated entity that is the subject of corrective action under 35 Ill. Adm. Code: 724 or 725, or under the Resource Conservation and Recovery Act of 1976 (P.L. 94-580, 42 USCS §6901 et seq., as amended).

SUBPART E: HEALTH ADVISORIES

Section 620.501 Purpose of a Health Advisory

This Subpart establishes procedures for the issuance of a Health Advisory that sets forth guidance levels that, in the absence of criteria under Section 620.301, must be considered by the Agency in:

a) Establishing groundwater cleanup or action levels whenever there is a release or substantial threat of a release of:

1) A hazardous substance or pesticide; or

2) Other contaminant that creates or may create an immediate danger to public health or the environment.

b) Determining whether the community water supply is taking its raw water from the "best available source which is economically reasonable and technologically possible" as mandated under 35 Ill. Adm. Code 604.501(a).

c) Developing Board rulemaking proposals for new or revised numerical criteria.

d) Evaluating mixtures of chemical substances, including but not limited to those substances for which numerical criteria have been set under Section 620.301.

Section 620.502 Issuance of a Health Advisory

a) The Agency shall issue a Health Advisory for a chemical substance or mixture of chemical substances if all of the following conditions are met:

1) A community water supply well is sampled and a substance or mixture of chemical substances is detected and confirmed by resampling;

2) There is no criterion under Section 620.301 for such chemical substance or there is no criterion for one or more substances contained in a mixture of chemical substances; and

3) The chemical substance or mixture of chemical substances is toxic or harmful to human health according to nationally accepted guidelines.

b) The Health Advisory shall contain a general description of the characteristics of the chemical substance, the potential adverse health effects, and a guidance level to be determined as follows:

1) If disease or functional impairment is caused due to a physiological mechanism for which there is a threshold dose below which no damage occurs, the guidance level for any such substance shall be the Maximum Contaminant Level Goal ("MCLG") adopted by USEPA for such substance. If there is no MCLG for the substance, the guidance level shall be the Human Threshold Toxicant Advisory Concentration for such substance as determined in accordance with Appendix A, unless the concentration for such substance is less than the lowest PQL for the substance. If the concentration for such substance is less than the lowest PQL for the substance, the guidance level is the lowest PQL.

2) If the chemical substance is a carcinogen, the guidance level for any such chemical substance shall be the lowest PQL for such substance.

3) If mixtures of similar-acting chemical substances are present, the level for such substances shall be determined in accordance with Appendices A, B, and C.

Section 620.503 Publishing Health Advisories

a) The Agency shall publish the full text of each Health Advisory upon issuance and make the document available to the public.

b) The Agency shall publish and make available to the public, at intervals of not more than 6 months, a comprehensive and up-to-date summary list of all Health Advisories.

Section 620.Appendix A Procedures for Determining Human Threshold Toxicant Advisory Concentration for Class I: Potable Resource Groundwater

a) Calculating the Human Threshold Toxicant Advisory Concentration

For those substances for which USEPA has not adopted a Maximum Contaminant Level Goal ("MCLG"), the Human Threshold Toxicant Advisory Concentration shall be calculated as follows:

$$HTTAC = \frac{ADE}{W_H} \times RSC$$

Where:

HTTAC = Human Threshold Toxicant Advisory Concentration in milligrams per liter

ADE = Acceptable Daily Exposure of substance in milligrams per day (mg/d) as determined pursuant to subsection (b).

W_H = Per capita daily water consumption equal to 2 liters per day (1/d)

RSC = Relative contribution of the amount of the exposure to a chemical via drinking water when compared to the total exposure to that chemical from all sources. Valid chemical-specific data shall be used if available. If valid chemical-specific data are not available, a value of 20% (=0.20) shall be used.

b) Procedures for Determining Acceptable Daily Exposures for Class I: Potable Resource Groundwater

1) The Acceptable Daily Exposure (ADE) represents the maximum amount of a threshold toxicant in milligrams per day (mg/d) which if ingested daily

for a lifetime results in no adverse effects to humans. Subsections (b)(2) through (b)(6) list, in prescribed order, methods for determining the ADE in Class I: Potable Resource Groundwater.

2) For those substances for which the USEPA has derived a Verified Oral Reference Dose for humans, USEPA's Reference Dose given in milligrams per kilogram per day (mg/kg/d) shall be used. The ADE equals the product of multiplying the Reference Dose by 70 kilograms (kg), which is the assumed average weight of an adult human.

3) For those substances for which a no observed adverse effect level for humans ($NOAEL_H$) exposed to the substance has been derived, the ADE equals the product of multiplying one-tenth of the $NOAEL_H$ given in milligrams of toxicant per kilogram of body weight per day (mg/kg/d) by the average weight of an adult human of 70 kilograms (kg). If two or more studies are available, the lowest $NOAEL_H$ shall be used in the calculation of the ADE.

4) For those substances for which only a lowest observed adverse effect level for humans ($LOAEL_H$) exposed to the substance has been derived, one-tenth the $LOAEL_H$ shall be substituted for the $NOAEL_H$ in subsection (b)(3).

5) For those substances for which a no observed adverse effect level has been derived from studies of mammalian test species ($NOAEL_A$) exposed to the substance, the ADE equals the product of multiplying 1/100 of the $NOAEL_A$ given in milligrams toxicant per kilogram of test species weight per day (mg/kg/d) by the average weight of an adult human of 70 kilograms (kg). Preference will be given to animal studies having High Validity, as defined in subsection (c), in the order listed in that subsection. Studies having a Medium Validity shall be considered if no studies having High Validity are available. If studies of Low Validity must be used, the ADE shall be calculated using 1/1000 of the $NOAEL_A$ having Low Validity instead of 1/100 of the $NOAEL_A$ of High or Medium Validity, except as described in subsection (b)(6). If two or more studies among different animal species are equally valid, the lowest $NOAEL_A$ among animal species shall be used in the calculation of the ADE. Additional considerations in selecting the $NOAEL_A$ include:

A) If the $NOAEL_A$ is given in milligrams of toxicant per liter of water consumed (mg/l), prior to calculating the ADE the $NOAEL_A$ must be multiplied by the average daily volume of water consumed by the mammalian test species in liters per day (l/d) and divided by the average weight of the mammalian test species in kilograms (kg).

B) If the $NOAEL_A$ is given in milligrams of toxicant per kilogram of food consumed (mg/kg), prior to calculating the ADE, the $NOAEL_A$ must be multiplied by the average amount in kilograms of food consumed daily by the mammalian test species (kg/d) and divided by the average weight of the mammalian test species in kilograms (kg).

C) If the mammalian test species was not exposed to the toxicant each day of the test period, the $NOAEL_A$ must be multiplied by the ratio of days of exposure to the total days of the test period.

D) If more than one equally valid $NOAEL_A$ is available for the same mammalian test species, the best available data shall be used.

6) For those substances for which a $NOAEL_A$ is not available but the lowest observed adverse effect level ($LOAEL_A$) has been derived from studies of mammalian test species exposed to the substance, one-tenth of the $LOAEL_A$ may be substituted for the $NOAEL_A$ in subsection (b)(5). The $LOAEL_A$ shall be selected in the same manner as that specified in subsection (b)(5). One-tenth the $LOAEL_A$ from a study determined to have Medium Validity may be substituted for a $NOAEL_A$ in subsection (b)(3) if the $NOAEL_A$ is from a study determined to have Low Validity, or if the toxicity endpoint measured in the study having the $LOAEL_A$ of Medium Validity is determined to be more biologically relevant than the toxicity endpoint measured in the study having the $NOAEL_A$ of Low Validity.

c) Procedures for Establishing Validity of Data from Animal Studies

1) High Validity Studies

A) High validity studies use a route of exposure by ingestion or gavage, and are based upon:

i) Data from animal carcinogenicity studies with a minimum of 2 dose levels and a control group, 2 species, both sexes, with 50 animals per dose per sex, and at least 50 percent survival at 15 months in mice and 18 months in rats and at least 25 percent survival at 18 months in mice and 24 months in rats;

ii) Data from animal chronic studies with a minimum of 3 dose levels and a control group, 2 species, both sexes, with 40 animals per dose per sex, and at least 50 percent survival at 15 months in mice and 18 months in rats and at least 25 percent survival at 18 months in mice and 24 months in rats, and a well-defined NOAEL; or

iii) Data from animal subchronic studies with a minimum of 3 dose levels and control, 2 species, both sexes, 4 animals per dose per sex for non-rodent species or 10 animals per dose per sex for rodent species, a duration of approximately 10 percent of the test species' lifespan, and a well-defined NOAEL.

B) Supporting studies which reinforce the conclusions of a study of Medium Validity may be considered to raise such a study to High Validity.

2) Medium Validity Studies

Medium validity studies are based upon:

A) Data from animal carcinogenicity, chronic, or subchronic studies in which minor deviations from the study design elements required for a High Validity Study are found, but which otherwise satisfy the criteria for a High Validity Study;

B) Data from animal carcinogenicity and chronic studies in which at least 25 percent survival is reported at 15 months in mice and 18 months in rats (a lesser survival is permitted at the conclusion of a longer duration study, but the number of surviving animals should not fall below 20 percent per dose per sex at 18 months for mice and 24 months for rats), but which otherwise satisfy the criteria for a High Validity Study;

C) Data from animal subchronic or chronic studies in which a Lowest Observable Adverse Effect Level (LOAEL) is determined, but which otherwise satisfy the criteria for a High Validity Study; or

D) Data from animal subchronic or chronic studies which have an inappropriate route of exposure (for example, intraperitoneal injection or inhalation) but which otherwise satisfy the criteria for a High Validity Study , with correction factors for conversion to the oral route.

3) Low Validity Studies

Low validity studies are studies not meeting the criteria set forth in subsection (c)(1) or (c)(2).

Section 620.Appendix B Procedures for Determining Hazard Indices for Class I: Potable Resource Groundwater for Mixtures of Similar-Acting Substances

a) This appendix describes procedures for determining the maximum amount of similar-acting substances which may be present as a mixture in Class I: Potable Resource Groundwaters for the protection of human health. Except as provided otherwise in subsection (c), subsections (d) through (h) describe the procedure for determining the Hazard Index for mixtures of similar-acting substances.

b) For the purposes of this appendix, a "mixture" means two or more substances which are present in Class I: Potable Resource Groundwater which may or may not be related either chemically or commercially, but which are not complex mixtures of related isomers and congeners which are produced as commercial products (for example, PCBs or technical grade chlordane).

c) The following substances listed in Section 620.301 are mixtures of similar acting substances:

1) Mixtures of ortho-Dichlorobenzene and para-Dichlorobenzene. The Hazard Index ("HI") for such mixtures shall be determined as follows:

$$HI = \frac{[\text{ortho-Dichlorobenzene}]}{0.6} + \frac{[\text{para-Dichlorobenzene}]}{0.075}$$

2) Mixtures of 1,1-Dichloroethylene and 1,1,1-trichloroethane. The Hazard Index ("HI") for such mixtures shall be determined as follows:

$$HI = \frac{[1,1\text{-Dichloroethylene}]}{0.007} + \frac{[1,1,1\text{-trichloroethane}]}{0.2}$$

d) When two or more substances occur together in a mixture, the additivity of the toxicities of some or all of the substances will be considered when determining health based criteria for Class I: Potable Resource Groundwater. This is done by the use of a dose addition model with the development of a Hazard Index for the mixture of substances with similar-acting toxicities. This method does not address synergism or antagonism. Guidelines for determining when the dose addition of similar-acting substances is appropriate are presented in Appendix C.

The Hazard Index shall be calculated as follows:

$$HI = \left(\frac{[A]}{ALA} + \frac{[B]}{ALB} + \ldots \frac{[I]}{ALI}\right)$$

Where: HI = Hazard Index, unitless.

[A], [B], [I] = Concentration of each similar-acting substance in groundwater in milligrams per liter (mg/l).

ALA, ALB, ALI = The acceptable level of each similar-acting substance in the mixture in milligrams per liter (mg/l).

e) For substances which are considered to have a threshold mechanism of toxicity, the acceptable level is:

1) The criteria listed in Section 620.301; or

2) For those substances for which criteria have not been established in Section 620.301, the Human Threshold Toxicant Advisory Concentration (HTTAC) as determined in Appendix A.

f) For substances which are carcinogens, the acceptable level is:

1) The criteria listed in Section 620.301; or

2) For those substances for which criteria have not been established under Section 620.301, the lowest PQL of USEPA-approved analytical methods for each substance.

g) Since the assumption of dose addition is most properly applied to substances that induce the same effect by similar modes of action, a separate HI shall be generated for each toxicity endpoint of concern.

h) In addition to meeting the individual substance objectives, a Hazard Index shall be less than or equal to 1 for a mixture of similar-acting substances.

Section 620.Appendix C Guidelines for Determining When Dose Addition of Similar-Acting Substances in Class I: Potable Resource Groundwaters is Appropriate

a) Substances shall be considered similar-acting if:

1) The substances have the same target in an organism (for example, the same organ, organ system, receptor, or enzyme).

2) The substances have the same mode of toxic action. These actions may include, for example, central nervous system depression, liver toxicity, or cholinesterase inhibition.

b) Substances that have fundamentally different mechanisms of toxicity (threshold toxicants vs. carcinogens) shall not be considered similar-acting. However, carcinogens which also cause a threshold toxic effect should be considered in a mixture with other similar-acting substances having the same threshold toxic effect. In such a case, an Acceptable Level for the carcinogen must be derived for its threshold effect, using the procedures described in Appendix A.

c) Substances which are components of a complex mixture of related compounds which are produced as commercial products (for example, PCBs or technical grade chlordane) shall not be considered mixtures, as defined in Appendix B. Such complex mixtures shall be considered to be equivalent to a single substance. In such a case, the Human Threshold Toxicant Advisory Concentration may be derived for threshold effects of the complex mixture, using the procedures described in Appendix A, if valid toxicological or epidemiological data are available for the complex mixture. If the complex mixture is a carcinogen, the Health Advisory Concentration shall be the lowest PQL of USEPA-approved analytical methods.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	PCB R89-
GROUNDWATER QUALITY STANDARDS	)	
(35 ILL. ADM. CODE 620)	)	

STATEMENT OF REASONS

Pursuant to 35 Ill. Adm. Code 102.120(b), the Illinois Environmental Protection Agency ("Agency") hereby submits to the Illinois Pollution Control Board ("Board") a statement of reasons in support of the attached proposal of regulations.

I. STATUTORY AUTHORITY

Section 2(b) of the Illinois Groundwater Protection Act ("IGPA") (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 7452(b)) sets forth that:

> . . . it is the policy of the State of Illinois to restore, protect, and enhance the groundwaters of the State, as a natural and public resource. The State recognizes the essential and pervasive role of groundwater in the social and economic well-being of the people of Illinois, and its vital importance to the general health, safety, and welfare. It is further recognized as consistent with this policy that the groundwater resources of the State be utilized for beneficial and legitimate purposes; that waste and degradation of the resources be prevented; and that the underground water resource be managed to allow for maximum benefit of the people of the State of Illinois.

To further this statutory purpose, Section 4 of the IGPA (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 7454) establishes within State government the Interagency Coordinating Committee on Groundwater. The Committee consists of ten agencies[1] and is required to review and evaluate State groundwater activities.

In addition, Section 5 of the IGPA (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 7455) creates the Groundwater Advisory Council. The Council consists of 9 public members appointed by the Governor and provides an independent review and evaluation of State groundwater activities.

Section 8(a) of the IGPA (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 7458(a)) requires the Agency (after consultation with the Interagency Coordinating Committee on Groundwater and the Groundwater Advisory Council) to propose, and the Board to adopt within two years:

> . . . comprehensive water quality standards for the protection of groundwater. In preparing such regulations, the Agency shall address, to the extent feasible, those contaminants which have been found in groundwaters of the State and which are known to cause, or suspected of causing cancer, birth defects, or any other adverse effect

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[1] The Illinois Environmental Protection Agency, Illinois Department of Energy and Natural Resources, Illinois Department of Public Health, Department of Mines and Minerals, Office of the State Fire Marshall, Division of Water Resources of the Illinois Department of Transportation, Illinois Department of Agriculture, Illinois Emergency Services and Disaster Agency, Illinois Department of Nuclear Safety, and Illinois Department of Commerce and Community Affairs.

> on human health according to nationally accepted guidelines . . .

Based upon the broad statutory mandate contained in the IGPA and the extraordinary measures provided in that law for interagency communication and cooperation, it is clear that the IGPA requires the Board to adopt "comprehensive water quality standards for the protection of groundwater" that apply even to such activities that may have in the past been primarily regulated by another State agency, department, or office. To be truly "comprehensive," the groundwater standards must be a body of regulations that form a regulatory "umbrella" under which these other State programs must operate. This point is further supported by the fact that the Board mandate to adopt the "comprehensive water quality standards for the protection of groundwater" was not merely added as an amendment to the Environmental Protection Act ("Act") (Ill. Rev. Stat. 1987, ch. 111 1/2, pars. 1001 et seq.), but rather was set forth in the IGPA, a free-standing body of statute containing its own stated policies and purposes.

While the IGPA does not directly specify the subject matter to be contained in the proposed regulations, Section 8(b) of the IGPA (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 7458(b)) does list the factors that the Board must consider when adopting these regulations:

> 1. recognition that groundwaters differ in many important respects from surface waters, including water quality, rate of movement,

direction of flow, accessibility, susceptibility to pollution, and use;

2. classification of groundwaters on an appropriate basis, such as their utility as a resource or susceptibility to contamination;

3. preference for numerical water quality standards, where possible, over narrative standards, especially where specific contaminants have been commonly detected in groundwaters or where Federal drinking water levels or advisories are available;

4. application of nondegradation provisions for appropriate groundwaters, including notification limitations to trigger preventive response activities;

5. relevant experiences from other states where groundwater programs have been implemented; and

6. existing methods of detecting and quantifying contaminants with reasonable analytical certainty.

Using this list as a guide, the Agency developed the regulations set forth in 35 Ill. Adm. Code 620.

II. REGULATORY DEVELOPMENT

In the development of 35 Ill. Adm. Code 620, the Agency actively invited comments and suggestions regarding the proposal from other State agencies, public interest groups, and the general public.

On February 2, 1988, the Interagency Coordinating Committee on Groundwater met in Springfield. At that meeting the Agency distributed a draft of the Issues/Options Paper for Comprehensive Water Quality Standards for Groundwater. The Agency provided a detailed explanation of

the paper and solicited comments from the Committee (see Exhibit 1).

On May 9, 1988, the Agency met with the Groundwater Advisory Council in Springfield. At that meeting the Agency distributed a draft of the Issues/Options Paper for Comprehensive Water Quality Standards for Groundwater. The Agency provided a detailed explanation of the paper and solicited comments from the Council (see Exhibit 2).

On July 7, 1988, the Interagency Coordinating Committee on Groundwater met in Springfield. At that meeting the Agency discussed the comments received from the Groundwater Advisory Council and from the Illinois Regulatory Group on the draft Issues/Options Paper for Comprehensive Water Quality Standards for Groundwater. Also the Agency solicited additional comments from the Committee (see Exhibit 3).

On September 12, 1988, the Interagency Coordinating Committee on Groundwater and the Groundwater Advisory Council met in Springfield. At that meeting the Agency discussed a draft of the Issues/Options Paper for Comprehensive Water Quality Standards for Groundwater (see Exhibit 4).

On November 14, 1988, the Interagency Coordinating Committee on Groundwater met in Springfield and the Agency discussed the comments received on the draft Issues/Options

Paper for Comprehensive Water Quality Standards for Groundwater (see Exhibit 5).

On December 1, 1988, the Groundwater Advisory Council sponsored a groundwater protection policy forum in Naperville. At this meeting the Agency participated in an overview of the Issues/Options Paper for Comprehensive Water Quality Standards for Groundwater that was presented by a panel of Groundwater Advisory Council members. In addition, implementation of groundwater quality standards in other States was discussed by representatives from several other states (see Exhibits 6 and 7).

On December 2, 1988, the Groundwater Advisory Council met with the Agency in Naperville and discussed the Council's response to the Issues/Options Paper for Comprehensive Water Quality Standards for Groundwater (see Exhibit 8).

On January 10, 1989, the Interagency Coordinating Committee on Groundwater met in Springfield. The Agency announced the establishment of an Interagency Groundwater Standards Technical Team to be comprised of members from other State agencies to assist in the development of 35 Ill. Adm. Code 620, and discussed the development of a Discussion Document for Comprehensive Groundwater Quality Standards (see Exhibits 9 and 10).

On January 11, 1989, the Interagency Groundwater Standards Technical Team met in Springfield. The Agency prepared a table of over 400 compounds that were known or suspected to occur in Illinois groundwater, and the Team discussed the table extensively. In addition, the Agency and the Team discussed the development of a Discussion Document for Comprehensive Groundwater Quality Standards and the basis for developing groundwater standards (see Exhibits 11 and 12).

On January 24, 1989, the Agency met with the Groundwater Advisory Council in Naperville. The Agency discussed the development of a Discussion Document for Comprehensive Groundwater Quality Standards, and responded to questions concerning the Issues/Options Paper for Comprehensive Water Quality Standards for Groundwater (see Exhibit 13).

On February 10, 1989, the Interagency Groundwater Standards Technical Team met in Springfield. The Agency described the statutory authority under the IGPA and the rationale behind the proposed groundwater classification system.

On February 21, 1989, the Interagency Groundwater Standards Technical Team met in Springfield. The Team provided comments on the compounds and criteria that should

be addressed in a draft Discussion Document for Comprehensive Groundwater Quality Standards.

On March 7, 1989, the Interagency Coordinating Committee on Groundwater met in Springfield. The Agency distributed a copy of the draft Discussion Document for Comprehensive Groundwater Quality Standards to the Committee, and provided a detailed explanation of the document (see Exhibit 14).

On March 8 and 16, 1989, the Interagency Groundwater Standards Technical Team met in Springfield. At these meetings the Agency explained the draft Discussion Document for Comprehensive Groundwater Quality Standards and solicited comments from the Team.

On April 21, 1989, the Agency met with the Groundwater Advisory Council in Springfield. At the meeting the Agency provided a detailed explanation of the final draft of the Discussion Document on Comprehensive Groundwater Quality Standards and solicited comments from the Council (see Exhibits 15 and 16).

On April 24, 1989, the Agency conducted a public rulemaking development session in Springfield. At this session the Agency described the content of the Discussion Document on Comprehensive Groundwater Quality Standards and solicited comments.

On May 3, 9, and 11, 1989, the Agency conducted open public workshops in Elgin, Springfield, and Collinsville respectively. At those workshops the Agency described the Discussion Document For Comprehensive Groundwater Quality Standards and solicited comments.

On May 8, 1989, the Interagency Coordinating Committee on Groundwater met in Springfield. At that meeting the Agency described the comments received from the Groundwater Advisory Council and the rulemaking development session, and solicited comments from the Committee (see Exhibit 17).

On May 30, 1989, the Interagency Groundwater Standards Technical Team met in Springfield. At that meeting the Agency discussed the comments received from the Interagency Coordinating Committee on Groundwater, Groundwater Advisory Council, rulemaking development session, and public workshops. In addition, the Department of Public Health and the Agency's Office of Chemical Safety discussed the research they had done on the groundwater quality criteria.

On July 12, 1989, the Agency met with the McHenry County Defenders and Citizens for A Better Environment in Springfield. At that meeting the Agency described options under consideration and solicited comments.

On July 17, 1989, the Interagency Coordinating Committee on Groundwater met in Springfield. At that meeting the Agency provided a detailed description of a

draft of 35 Ill. Adm. Code 620 and solicited comments from the Committee.

On August 8, 1989, the Agency met with the Illinois Environmental Regulatory Group in Springfield. At that meeting the Agency described a draft of 35 Ill. Adm. Code 620 and solicited comments.

On August 9, 1989, the Agency conducted a public rulemaking development session in Springfield. At that meeting the Agency described a draft of 35 Ill. Adm. Code 620 and solicited comments.

On August 15, 1989, the Agency met with the Illinois Coal Association and the Illinois Department of Mines and Minerals in Springfield. At that meeting the Agency described a draft of 35 Ill. Adm. Code 620 and solicited comments.

The Agency made numerous revisions to 35 Ill. Adm. Code 620 in response to the comments and suggestions received as a result of these public participation efforts.

III. DESCRIPTION OF THE PROPOSAL

A. Subpart A

Subpart A sets forth the general provisions applicable to the entire part.

Section 620.101 sets forth the purpose of Part 620. This expressed purpose is consistent with the mandate contained in Section 8 of the IGPA.

Section 620.102 contains the definitions that are applicable to Part 620.

Section 620.103 requires persons to comply with the Act and Board regulations.

Section 620.104 describes the documents that are incorporated by reference into Part 620.

Section 620.105 provides that groundwater is not required to meet the general use standards and public and food processing standards contained in Subparts B and C of 35 Ill. Adm. Code 302. This section clarifies the relationship between 35 Ill. Adm. Code 302 and 35 Ill. Adm. Code 620.

Section 620.106 excludes the listed activities from Subparts C and D of Part 620. These excluded activities include certain types of man-made conduits and certain types of dewatering operations. The discharge to surface waters from such activities are regulated under 35 Ill. Adm. Code: Subtitle C.

B. Subpart B

Subpart B establishes the groundwater classification system and sets forth procedures for reclassification of groundwater.

Section 620.201 describes the four classes of groundwater:

1. Class I: Potable Resource Groundwater
2. Class II: General Resource Groundwater
3. Class III: Remedial Groundwater
4. Class IV: Naturally Limited Groundwater

All groundwater within the State falls into one of these four classes.

Class I: Potable Resource Groundwater is groundwater within a certain specified distance from a community water supply well or other potable water supply well. As set forth in Section 620.201(b), this distance may vary depending on the type of well and the hydrogeology of the area around the well.

Class II: General Resource Groundwater is all groundwater that is not otherwise contained in one of the other three classes.

Class III: Remedial Groundwater is groundwater that due to contamination cannot meet the groundwater criteria set forth in Subpart C for an extended period of time. This

class includes groundwater contaminated by National Priorities List sites, State Remedial Action Priorities List sites, leaking underground storage tank sites, sites subject to corrective action approved by the Agency under 35 Ill. Adm. Code: Subtitle G, sites undergoing corrective action under 35 Ill. Adm. Code 615 or 616, permitted coal mining sites, or coal mining sites that were mined prior to current State land reclamation regulations.

It should be noted that under Section 620.303 remediation or reclamation efforts on Class III: Remedial Groundwater must result in such groundwater meeting Class II: General Resource Groundwater criteria on-site and meeting whatever criteria that is appropriate to the class of groundwater located off-site (i.e., Class I: Potable Resource Groundwater or Class II: General Resource Groundwater). It should also be noted that the status of groundwater as Class III: Remedial Groundwater ends when remediation or reclamation is completed.

Class IV: Naturally Limited Groundwater is groundwater that contains more than 10,000 mg/l of total dissolved solids due to natural conditions, or groundwater that the Board has designated as an exempted aquifer pursuant to 35 Ill. Adm. Code 730.104.

Section 620.202 sets forth the procedures by which the Board may reclassify groundwater by a site-specific rule.

For example, groundwater classified under this proposal as Class II: General Resource Groundwater may be reclassified by site-specific rule as Class I: Potable Resource Groundwater if the petitioner can demonstrate that the groundwater meets the standard set forth in Section 620.201(b)(5).

Section 620.203 sets forth the procedures by which the Board may reclassify certain groundwater by an adjusted standard. Under Section 620.201(b)(3) and (b)(4), within a specified period of time the area that is designated as Class I: Potable Resource Groundwater around certain community water supply wells will automatically increase to 3000 feet from the wellhead. Under Section 620.203, the Board must grant an adjusted standard resulting in an extension of Class I: Potable Resource Groundwater beyond 3000 feet from the wellhead if the petitioner demonstrates that the requested extension is within a "proximate aquifer" as defined in Section 620.203(e).

Section 620.204 authorizes the owner of a potable water supply well (other that a community water supply well) to obtain from an adjacent landowner a waiver of a Class I: Potable Resource Groundwater designation for groundwater contained on the adjacent site under certain specified conditions. This waiver process is similar in concept to the waiver provisions set forth in Section 14.2(b) of Act.

C. Subpart C

Subpart C sets forth the groundwater quality criteria for Class I: Potable Resource Groundwaters, Class II: General Resource Groundwater, Class III: Remedial Groundwater, and Class IV: Naturally Limited Groundwater.

The Agency based the health-related groundwater quality criteria in Subpart C on the Maximum Contaminant Levels ("MCLs") developed by the United States Environmental Protection Agency ("USEPA"). Where USEPA has proposed an MCL for a contaminant for which there is no existing MCL or where USEPA has proposed to modify an existing MCL, the Agency based its groundwater criteria on the proposed MCL. If USEPA adopts the proposed MCL as a final rule prior to the Board's adoption of this proposal, the Agency recommends that the Board adopt the MCL contained in USEPA's final rule, even if the MCL contained in the final rule differs from USEPA's proposed MCL.

Section 620.301 contains the inorganic and organic chemical constituents that are applicable to Class I: Potable Resource Groundwater. The inorganic constituent criteria for gross alpha and lead are based on USEPA's MCLs. Arsenic, barium, cadmium, chromium, copper, mercury, nitrate-nitrogen, and selenium are based on USEPA's proposed MCLs. The criteria for cyanide, manganese, and silver are based on the Maximum Allowable Concentration ("MAC") set forth in 35 Ill. Adm. Code 604.202. USEPA is proposing to

delete the MCL for silver and in its place adopt a Secondary Maximum Contaminant Level ("SMCL"). The criteria for chloride, iron, sulfate, and total dissolved solids are based on the 95 percent confidence concentration level from all of the groundwater monitoring conducted by the Agency from community water supply wells.

The organic chemical constituent criteria for benzene, carbon tetrachloride, endrin, para-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethylene, 1,1,1-trichloroethane, trichloroethylene, and vinyl chloride are based on USEPA's MCLs. The organic chemical constituent criteria for alachlor, alidicarb, atrazine, carbofuran, chlordane, heptachlor, heptachlor epoxide, lindane, 2,4-D, ortho-dichlorobenzene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, ethylbenzene, methoxychlor, monochlorobenzene, pentachlorophenol, polychlorinated biphenyls, styrene, 2,4,5-TP, tetrachloroethylene, toluene, toxaphene, and xylenes are based on USEPA's proposed MCLs.

USEPA proposed dual criteria for styrene because of the uncertainty of its carcinogenicity classification. The Agency utilized the less stringent criteria since USEPA's discussion of the uncertainty factors appears to support the less stringent criteria.

The complex organic chemical mixture criteria for gasoline, diesel fuel or heating fuel were selected

consistent with USEPA model procedures for effluent limitations. Benzene is used as a main pollutant of concern because of its solubility and because it is a carcinogen. Benzene can also be used as an indicator parameter for the removal of other related chemicals (e.g., propylene and naphthalene). The aggregate parameter of benzene, ethylbenzene, toluene, and the xylenes ("BETX") was also selected as an indicator since BETX is often used as the petroleum industry standard. The criteria for benzene was based on a USEPA MCL. The complex organic chemical mixture criteria for BETX was based on the summation of the USEPA's MCLs and proposed MCLs for benzene, ethylbenzene, toluene, and xylenes.

Section 620.302 contains the inorganic and organic criteria that are applicable to Class II: General Resource Groundwater. The general basis for the inorganic criteria in this section are the levels recommended to USEPA in "Water Quality Criteria: 1972, by the National Academy of Sciences - National Academy of Engineering.

The inorganic chemical constituent criteria for arsenic, cobalt, copper, cyanide, fluoride, lead, and mercury are based on recommended limits for livestock water supply. The inorganic chemical constituent criteria for cadmium and chromium are based on recommended water quality criteria for both livestock and irrigation concerns. The inorganic criteria for boron, selenium, and zinc are based

on recommended water quality criteria for intermittent irrigation on tolerant crops. These are similar to the conditions under which irrigation is used in Illinois. The inorganic constituent criteria for total dissolved solids are based on the 95 percent confidence concentration level from all of the groundwater monitoring conducted by the Agency at community water supply wells.

The organic chemical constituent criteria are based on a calculation that takes USEPA's MCLs or proposed MCLs and increases that level by a factor derived from either an 80% removal efficiency or USEPA's most cost-effective best available treatment ("BAT") removal percentage levels, with the exception of phenols[2] and xylenes[3]. Therefore, the upper limit for Class II: General Resource Groundwater would never exceed a treatable level for any organic constituent having a health-based Class I: Potable Resource Groundwater criteria.

The organic criteria for alachlor, aldicarb, atrazine, benzene, carbofuran, carbon tetrachloride, chlordane, endrin, heptachlor, heptachlor epoxide, lindane, 2,4-D, para-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethylene, trans-1,2-dichloroethylene, methoxychlor monochlorobenzene, pentachlorophenol, polychlorinated

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[2] The criteria established for phenols is based on 35 Ill. Adm. Code 302.208.

[3] The criteria for all three of the xylenes is based on USEPA's proposed MCL for any single xylene.

biphenyls, styrene, 2,4,5-TP, tetrachloroethylene, toxaphene, 1,1,1-trichloroethane, trichloroethylene, and vinyl chloride is derived from a 80 percent removal efficiency rate. The criteria established for ortho-dichlorobenzene is derived from a 40 percent removal efficiency rate. The criteria established for cis-1,2-dichloroethylene is derived from a 65 percent removal efficiency rate. The criteria established for ethylbenzene is derived from a 30 percent removal efficiency rate. The criteria established for toluene is derived from a 60 percent removal efficiency rate.

The complex organic chemical mixture criteria of gasoline and fuels is derived from the criteria established for each individual chemical. The criteria for BETX is based on adding the criteria for benzene, ethylbenzene, toluene, and xylenes as described above.

The alternate total dissolved solids ("TDS") criteria is based upon the maximum concentration of the ambient TDS concentration level resulting from past surface coal mining, but not to exceed 3000 mg/l. Such a TDS level will still allow the water to be used for irrigation, livestock watering, and other beneficial general uses. In addition, this level also corresponds to the lower limit established by USEPA as an exempt aquifer pursuant to 35 Ill. Adm. Code 730.104. Also, where coal mining activity creates groundwater where no significant resource groundwater

existed prior to mining, the TDS criteria for such groundwater is based upon the maximum concentration of the ambient TDS concentration level resulting from past surface coal mining, but not to exceed 5000 mg/l.

Section 620.303 establishes the groundwater quality criteria for Class III: Remedial Groundwater. This criteria is based on the existing concentration of contaminants in the groundwater underlying a site. The criteria that apply on-site after remediation or closure are the criteria for Class II: General Resource Groundwater. The criteria that applies off-site are the criteria appropriate to the class of groundwater off-site.

Section 620.304 establishes the procedures for determining compliance with the groundwater criteria. Section 620.304 describes where each criteria apply and describes the points where monitoring data can be obtained to determine compliance.

In general, criteria for a particular class of groundwater applies to that groundwater unless the groundwater is located on-site. All groundwater on-site must meet the criteria for Class II: General Resource Groundwater.

Groundwater criteria shall only apply down gradient of a contamination source or at the boundary of other structures (e.g., buildings). This exclusion recognizes

that monitoring and removal of contaminants under certain structures may not be feasible. In addition, appropriate criteria always apply off-site unless a waiver is provided under Section 620.204.

The criteria applies at appropriate wells or springs. An appropriate well is one permitted by a State regulatory agency or constructed (or reconstructed) in accordance with applicable codes or rules. In addition, monitoring wells must meet the specified technical criteria. These requirements are consistent with the Department of Public Health standards. The Department of Public Health is developing a monitoring well code. When the Department of Public Health codifies a monitoring well code, it is the Agency's intent to be consistent with those rules.

In addition, a spring discharging groundwater from an aquifer is a permissible monitoring point to determine compliance. This is not intended to allow seeps or other minor groundwater discharges as a monitoring point.

The technical requirements proposed in this section for wells and springs helps assure representative groundwater samples. The procedures standardize the monitoring locations, and better define the specific criteria applicable to those groundwaters.

Section 620.305 details groundwater monitoring, analytical, and reporting requirements. This section

establishes standards for a representative sample collection point for drinking water wells, wells other than drinking water wells, monitoring wells, and springs. Groundwater samples must be collected from drinking water wells and wells other than drinking water wells prior to any treatment. This section also requires that groundwater collected from a monitoring well or spring be filtered for inorganic chemical constituent analyses.

Section 620.305 also details sample collection procedures, water level collection requirements, and analytical laboratory methods. For organic compounds that are listed as carcinogens, the analytical standard requires the use of a methodology which has a practical quantification level ("PQL") at or below the groundwater criteria. In addition, all analytical methodology must be consistent with the methodologies incorporated by reference under Section 620.104.

Further, Section 620.305 sets forth specific groundwater monitoring information reporting requirements. The reporting requirements contained in this section do not apply to activities subject to Subpart B of 35 Ill. Adm. Code 615 or 616, or units subject to Subpart F of 35 Ill. Adm. Code 724.

D. Subpart D

Subpart D details groundwater non-degradation and preventive management procedures.

Section 620.401 describes the general regulation prohibiting the downgrading of a groundwater class. Thus, for example, Class I: Potable Resource Groundwater must not be degraded to non-potable use, while Class II: General Resource Groundwater must not be degraded to Class III: Remedial Groundwater.

Section 620.402 requires that preventative management procedures apply to new sites within Class I: Potable Resource Groundwater and Class II: General Resource Groundwater, and to existing sites within a setback zone. This section differentiates between new and existing sites. The requirements for new sites are more stringent than the requirements for existing sites. This approach is consistent with the application of nondegradation to "appropriate groundwaters" as described in Section 8(b)(4) of the IGPA (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 7458(b)(4)). By distinguishing between new and existing sites in the application of nondegradation requirements, Subpart D results in a gradual and manageable phase-in of these more rigorous requirements. This regulation is also consistent with 35 Ill. Adm. Code 615 and 616, and the IGPA

which prescribe more stringent provisions for those activities or sources that are not already in existence.

Section 620.402 describes when a preventative management response must be initiated for Class I: Potable Resource Groundwater and Class II: General Resource Groundwater. If a constituent listed in this section is detected by a regulated entity or regulatory agency or department, a preventative management response must be undertaken. This generally requires that the detection of a constituent be confirmed by additional monitoring.

In addition, Section 620.402 describes the person or entity that may determine a detection. A detection may be determined by a State regulatory agency or department, or by the owner and operator of a regulated entity for which groundwater monitoring is required pursuant to State or Federal law. Also, definitions are provided for terms used in this section.

Section 620.403 sets forth the preventative management response procedure responsibilities of regulated entities, the Agency, and the Department of Public Health. This section requires that a detection at a monitoring well or drinking water well must be resampled by a regulated entity or State agency or department and, if confirmed, the appropriate agency must be notified.

In addition under Section 620.403, the owner and operator of a regulated entity that has been notified must sample each of their own monitoring wells or drinking water wells if the site stores, disposes, or otherwise handles material containing the constituent that was detected. If the same constituent is detected again, the monitoring or drinking water well must be resampled and the results must be reported to the Agency. The results of monitoring under Section 620.403 is used to determine the nature, extent, and source of any contamination.

Section 620.403 also requires the Agency to conduct a well site survey if it receives notice that a contaminant has been detected, unless a well site survey has been conducted within the last 3 years or a groundwater protection needs assessment has been conducted. This information will help determine if sources, routes, or activities might be a possible cause of the contamination.

Section 620.404 specifies the conditions and criteria which trigger applicable corrective action at sites that are subject to the preventive management procedures of Section 620.402. This section is a specific response to Section 8(b)(4) of the IGPA (Ill. Rev. Stat. 1987, ch. 111 1/2, par. 7458(b)(4)). The applicable corrective action is that which is required by other law or regulations governing the regulated entity that is a source of the contamination. In other words, this section establishes a groundwater

"trigger" for corrective action under other State or Federal programs.

Section 620.404(a) describes the corrective action trigger for Class I: Potable Resource Groundwater. Applicable corrective action must be undertaken in Class I: Potable Resource Groundwater if (1) the Secondary Maximum Contaminant Level ("SMCL") are exceeded for the seven listed constituents which have organoleptic thresholds less than the health-based threshold of the Class I: Potable Resource Groundwater criteria, (2) a carcinogen denoted in Section 620.301(c) or (d) is exceeded, (3) benzene exceeds 0.005 mg/l or BETX exceeds 0.095 mg/l[4] for fuels, or (4) a statistically significant increase above background for any other constituent listed in the Class I: Potable Resource Groundwater criteria (i.e, Section 620.301).

Exceeding an SMCL will trigger potable groundwater protection at the first indication of taste or odor impacts upon the groundwater. Triggering corrective action whenever a PQL is exceeded for constituents denoted as carcinogens in Section 620.301(c) or (d) essentially requires corrective action whenever one of these constituents can be quantified. The statistically significant increase trigger is consistent with the requirements set forth in 35 Ill. Adm. Code 616 and 724.

[4] Note that the value of 0.095 mg/l for BETX was derived from the sum of the SMCLs for ethylbenzene, toluene, and xylenes.

Section 620.404(b) describes the corrective action trigger for Class II: General Resource Groundwater. Applicable corrective action must be undertaken in Class II: General Resource Groundwater if the Class I: Potable Resource Groundwater criteria (Section 620.301) for organics, complex organic chemical mixtures and selected inorganics are exceeded. This trigger for Class II: General Resource Groundwater is intended to help assure that groundwaters of this class which already comply with Class I: Potable Resource Groundwater criteria are maintained at this better water quality level. Detection of constituents exceeding this criteria would cause preventative management procedures and corrective action to be initiated.

The exceptions set forth in Section 620.404(c) provide regulatory relief if the regulated entity can demonstrate that the source of the contamination is due to background or due to sampling error. In addition, this subsection grandfathers all levels established by appropriate prior corrective action, thus assuring that final determinations that were previously made regarding prior closure actions will be recognized. This subsection requires that the demonstration thereunder must be made to the Agency.

Section 620.405 provides for an adjusted standard from applicable corrective action. If a regulated entity is subject to applicable corrective action the owner or operator can file a petition with the Board and the State

regulatory agency or department that issued the notice of corrective action. The Board must issue an adjusted standard if the owner and operator of a regulated entity demonstrates that significant adverse economic and social impacts will result from implementation of the corrective action, and that the residual environmental or health risks posed by the contaminants are not a significant hazard. This section does not allow an adjusted standard option for any regulated entity that is the subject of corrective action under 35 Ill. Adm. Code 724 or 725, or under the Resource Conservation and Recovery Act of 1976 (P.L. 94-580, 42 USCS §6901 et seq., as amended).

E. Subpart E

Subpart E establishes procedures for developing and issuing a Health Advisory. A Health Advisory is a means for the Agency to establish a guidance level for a chemical substance or a mixture of chemical substances for which criteria have not yet been set under Section 620.301. This advisory process is intended to mirror the procedure used by USEPA to account for substances detected in groundwater that do not have promulgated criteria. Also, it should be noted that this Subpart codifies existing practice by the Agency.

The Health Advisory procedure will begin when such a chemical substance or mixture of chemical substances is detected in a community water supply. The Agency will then

develop a guidance level for this chemical substance or mixture of chemical substances using the procedures described in Appendices A, B, and C. These procedures are derived from USEPA's guidelines for assessing risk to human health, including guidelines on developing Maximum Contaminant Level Goals ("MCLGs") and Oral Reference Doses (RfD_O), and National Academy of Sciences' guidelines for assessing adverse effects to human health from drinking water contaminants. The Agency will publish the Health Advisories in documents which will be available to the public.

Section 620.501 states that the guidance level developed from the Health Advisory process will be used by the Agency in setting groundwater cleanup or action levels and proposing new or revised groundwater quality criteria to the Board. The Health Advisory guidance level will also be used by the Agency to determine whether the community water supply is being taken from the best available raw water source as required by 35 Ill. Adm. Code 604.501(a).

Section 620.502 states that a Health Advisory will be issued if a chemical substance or mixture of chemical substances is found in a community water supply well, has no criteria under Section 620.301, and is harmful to human health.

The Health Advisory guidance level will be equal to the MCLG, if it exists, for noncarcinogens or the PQL for carcinogens. If the chemical substance does not have an established MCLG or a mixture of chemical substances is present, the guidance level is determined using the procedures specified in Appendices A, B, and C.

Section 620.503 states that the full text of the Health Advisory will be published and made available to the public.

F. Appendices

Appendix A sets forth specific procedures for calculating Human Threshold Toxicant Advisory Concentrations for a chemical substance for which the Board has not adopted a groundwater standard for Class I: Potable Resource Groundwater and for which USEPA has not adopted an MCLG. These procedures reflect the preference stated in the IGPA for the use of "nationally accepted guidelines" in implementing that act.

Subsection (a) of Appendix A describes the calculation of the Human Threshold Toxicant Advisory Concentration. The methodology is identical to the procedures used by USEPA to calculate Lifetime Health Advisories for drinking water. The Human Threshold Toxicant Advisory Concentration is calculated from an estimation of the Acceptable Daily Exposure (determined in subsection (b)), which is then distributed into the normal amount of drinking water

consumed by humans. There is an adjustment made to this acceptable concentration for the relative contribution of the amount of a person's exposure to a chemical from drinking water when compared to their exposure to that chemical from all other sources. Chemical-specific information on the relative contribution of drinking water and all other sources of exposure to a chemical must be used, if available. If such data are not available, the default value specified is the default value used by USEPA to develop its drinking water Health Advisories.

Subsection (b) of Appendix A lists procedures for determining the Acceptable Daily Exposure to be used in calculating the Human Threshold Toxicant Advisory Concentration in subsection (a). Subsection (b)(1) describes the Acceptable Daily Exposure as the maximum amount of a threshold toxicant, in units of milligrams per day, which if ingested daily for a lifetime is expected to result in no adverse effects to humans. Subsections (b)(2) through (b)(6) describe methods for deriving the Acceptable Daily Exposure. Preference is given to the use of USEPA's Verified Oral Reference Dose where available. This value is a peer-reviewed estimate of the human no-effect "dose", developed by USEPA for chemicals which cause toxic effects for which there are identifiable thresholds for the toxic effects. For chemicals which lack a Verified Oral Reference Dose, preference is given in descending order to health

effects data from: investigations of human exposures in which a No Adverse Effect Level is identified; investigations of human exposures in which a Lowest Adverse Effect Level is identified; animal studies in which a No Adverse Effect Level is identified; and animal studies in which a Lowest Adverse Effect Level is identified. Guidance is also provided for animal studies to convert study results into the form (i.e., in units of milligrams per kilogram per day) required to be used in subsection (a), if necessary, and to correct for less-than-full time exposure. When animal studies must be used, preference is given to studies determined to have High Validity, as specified in subsection (c).

Subsection (c) of Appendix A outlines procedures for establishing the validity of data from animal studies. A rating of High Validity is given to animal studies in which the animals are exposed to the chemical for their lifetime, or, if the study design calls for less-than-lifetime exposure, in which a No Observable Adverse Effect Level may be identified for the chemical. Minimum requirements for various aspects of the study designs are also specified for a study of High Validity. Studies in which minor deviations from the requirements of a High Validity study are found, but which satisfy all other requirements for a study of High Validity, are considered to have Medium Validity. Low

Validity studies are those not meeting the requirements for High or Medium Validity studies.

Appendix B describes procedures for calculating the Hazard Index for mixtures of similar-acting substances in Class I: Potable Resource Groundwater. The Hazard Index calculations rely on procedures very similar to those used by USEPA to assess the potential health hazards from mixtures of chemical substances. The Hazard Index is an estimator of the combined effect of two or more similar acting substances in a mixture on human health.

In subsection (b) of Appendix B, "mixture" is defined as two or more substances which may or may not be related chemically or commercially, but which are not complex mixtures of closely related chemicals which are intentionally produced as a commercial product, such as PCBs or technical grade chlordane.

Subsection (c) of Appendix B specifically identifies the Hazard Index calculation for two mixtures of similar acting substances for which both members of the mixture have had groundwater standards for Class I: Potable Resource Groundwater proposed in Section 620.301. For any other mixtures in which one or more of the members do not have groundwater standards proposed in Section 620.301, the procedures outlined in subsections (d) through (g) of

Appendix B identify the Hazard Index calculations for such mixtures for similar acting substances in the mixtures.

Subsection (d) of Appendix B sets forth the method of calculating the Hazard Index, using a dose addition model[5]. The Hazard Index is calculated by summing two or more fractions, which are calculated by dividing the measured concentration of each similar acting substance in the mixture by its respective acceptable level.

Subsection (e) of Appendix B identifies the acceptable levels to be used in subsection (d) for substances which have a mechanism of toxicity for which there is a threshold for the toxic effect.

Subsection (f) of Appendix B identifies the acceptable levels to be used in subsection (d) for carcinogens.

Subsection (g) of Appendix B requires that a separate Hazard Index be calculated for each toxicity endpoint of concern for the chemical substances in a mixture. This follows from the use of a dose addition model, which is most properly applied to cases in which two or more substances induce the same toxic effect by the same or similar mode of action.

Subsection (h) of Appendix B lists the health-based goals for the individual substances in a mixture and the

[5] This model does not take into account possible synergistic or antagonistic effects of chemicals in a mixture.

goal for those chemicals in a mixture which are similar acting substances.

Appendix C sets forth guidance for determining when two or more chemical substances in a mixture shall be considered to be similar acting. This guidance is provided since the use of the dose addition model in Appendix B to address the combined toxicities of two or more chemicals in a mixture is most appropriate when the chemicals cause the same toxic effect by the same or similar mode of action.

Subsection (a) of Appendix C describes instances in which substances will be considered to be similar acting. This will occur when it can be shown that the substances have the same target in an organism or when the substances have the same mechanism of toxicity.

Subsection (b) of Appendix C cautions against including substances in a mixture which are fundamentally different in their mechanism of toxicity. Specifically, substances which cause toxic.effects for which there is a threshold for the toxic effect shall not be included in mixtures of chemicals which exert their effects through a nonthreshold mechanism (i.e., carcinogens), and vice-versa. This subsection, however, does provide for the inclusion of a carcinogen in a mixture with "threshold" substances if it can be shown that the carcinogen also causes the same threshold effect as the other substances in the mixture. In this case, the

acceptable level for the threshold effect of the carcinogen is calculated the same as the Human Threshold Toxicant Advisory Concentration in Appendix A.

Subsection (c) of Appendix C directs that certain complex mixtures, which are composed of closely related compounds and which are produced commercially as specific products, be treated as if they are a single chemical substance. In such cases, the Health Advisory for these complex mixtures shall be derived using the procedures of Appendix A for mixtures which cause threshold effects, and shall be equal to the lowest PQL for those mixtures which are carcinogens.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: _____

Scott O. Phillips
Senior Attorney
Enforcement Programs
Division of Public Water Supplies

DATED: September , 1989

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217/782-5544

SOP: SORD3.DOC

E X H I B I T 1

February 2, 1988

The meeting was called to order at 9:00 a.m. at the Illinois Environmental Protection Agency in Springfield.

The following Agency representatives were in attendance:

Bob Clarke	Illinois Environmental Protection Agency
Roger Kanerva	Illinois Environmental Protection Agency
Karen Witter	Governor's Office
George Fitz Gerald	Illinois Department of Nuclear Safety
Harry Hendrickson	Illinois Department of Energy and Natural Resources
David Baker	Illinois Department of Energy and Natural Resources
Mitch Beaver	Illinois Department of Energy and Natural Resources
Keros Cartwright	Illinois State Geological Survey
Dick Schicht	Illinois State Water Survey
Dick Berg	Illinois State Geological Survey
John Shafer	Illinois State Water Survey
Bob Schwarberg	Illinois Department of Agriculture
David Antonacci	Illinois Department of Public Health
Roger Selburg	Illinois Environmental Protection Agency
Jack Moore	Office of the State Fire Marshal
John R. Washburn	Illinois Department of Transportation, Division of Highways
Gary R. Clark	Illinois Department of Transportation, Division of Water Resources
John Plunk	Illinois Emergency Services and Disaster Agency
Lynn E. Dunaway	Illinois Environmental Protection Agency
Carl Kamp	Illinois Environmental Protection Agency
Anthony Dulka	Illinois Environmental Protection Agency
Stewart Schrodt	Illinois Department of Commerce and Community Affairs
Rick Cobb	Illinois Environmental Protection Agency
Brian Kimpel	Illinois Department of Energy and Natural Resources
Karen Miller	Illinois Department of Energy and Natural Resources
Bruce Phillips	Illinois Department of Mines and Minerals
Carol Sinnott	Illinois Environmental Protection Agency

The committee was chaired by Roger Kanerva in the absence of IEPA Director, Richard Carlson.

Mitch Beaver, ENR moved for approval for the minutes of the December 1, 1987 meeting. Stewart Schrodt, DCCA, seconded the motion and they were approved unanimously.

Per request, an official Agency contact list was drafted. Roger Kanerva requested the list be reviewed by each Agency and edited if necessary.

Implementation Plan

The final draft of the Plan was mailed prior to the meeting with edits to the schedule reflecting the delay in GAC appointments. The final version was approved at the December 1, 1987 meeting.

The Progress Report was distributed prior to the meeting. Roger Kanerva explained the purpose and development of the report. It is intended to provide the Committee with the progress of the Plan. Only major action items were included to keep the report brief. The report can be used in the ICCG evaluation process. Roger reviewed each item and the rating system which was applied. The rating system is open for changes because it assumes the progress of other agencies.

Roger proposed that the report be updated prior to every committee meeting to reflect changes in progress. The lead agency for each task will be contacted for any changes that need to be reflected in the report. Mitch Beaver approved of the Progress Report design as long as it can remain objective. Mitch stated the report allowed for tracking and an explanation for action items that may have slipped behind schedule. Karen Witter, Governor's Office, also agreed the Report could be used to help evaluate the ICCG and allow the Governor's Office to report with confidence on the success of the Groundwater Program and its major components.

Bob Schwarberg, DOA, commented it would be helpful for Committee members to explain negative ratings at the meetings. Roger responded that the action item status could be used to flag problems and changes which could be explained at each meeting. Roger stated the report should be kept brief and informal. Lead agencies will be contacted for progress of routine, inhouse operations which the Committee would not be aware of. Such progress will be reflected in status and rating.

Mitch's final comment concerned progress of items that are short term and already completed. The example was ENR's Research Program. The task outlined in the Implementation Plan called for the development of a strategy, which is complete. In this case, the progress report would not reflect the status of the research program itself. Roger commented that when tasks for the Plan are complete, the lead agency will use its strategy to keep the project on schedule.

> Summary -- There was general agreement on the progress report. IEPA will contact members prior to each meeting for input.

Groundwater Advisory Council

Karen commented on the delay of the GAC appointments. Approvals are still not confirmed. The number of people interested in participating was greater than anticipated.

Primer

Copies of "A Primer Regarding Certain Provisions of the Illinois Groundwater Protection Act" were distributed. Roger reviewed the format, layout of the legal language and the sections used to interpret the Act. Bob Clarke, IEPA, reported the Primer has been circulated to community water well owners, County Board Chairmen and County Health Department officials. IEPA expects to expand

circulation. Roger thanked the Committee members for their editorial input and review.

Minimal Hazard Certification - Discussion

Roger Kanerva presented the Minimal Hazard Certification Package which included copies of letters sent to Kathy Patriquen, Chemical Industries Council of Illinois; Tom Reid, Illinois Manufacturers Association; and Sidney Marder, Illinois Environmental Regulatory Group.

IEPA has received comments from the Chemical Industries Council of Illinois. The certification package is on the Illinois Environmental Regulary Group's agenda for discussion so IEPA expects to receive additional comments soon. Comments have not yet been received by the Illinois Manufacturers Association. Roger noted the package is still under revision by IEPA and asked for assistance from Committee members.

Several components still need reworking, such as those companies who may have experienced a "significant release." A worksheet has been drafted to help answer questions on releases.

Jack Moore, OSFM, suggested Part 170 rules could be reviewed for additional input. Roger commented IEPA's Division of Land Pollution Control reviewed the rules for development of the guidelines but, perhaps, a more detailed review is in order.

Roger invited anyone with detailed comments or wishes to assist in a detailed review to contact Bob Clarke or his staff to arrange a session.

Karen Witter inquired if the form and guidelines need to be developed into rules. Roger responded that they could go either way, but a decision will be made before the packet is finalized. Roger speculated the forms would probably not have to be made into rules while it's more likely rules would be established for the guidelines.

Roger requested ENR's and DOA's input for details. ENR will review and Mitch Beaver will provide a response. DOA will present the package to the Illinois Fertilizer and Pesticide Association for discussion. The Association is in the process of developing design criteria with the Secondary Containment Committee.

Gary Clark, IDOT, made an editorial comment for consistency of terms used to describe Conditions of Certification.

> Summary -- The Certification Forms and Guidelines have been drafted and are still under review. IEPA's awaiting comments from business entities and Committee members.

Groundwater Quality Standards - Discussion

Roger Kanerva distributed drafts of "Issue/Options: Comprehensive Water Quality Standards for Groundwater". The rationale for the document was

explained. Roger reviewed the major segments of the draft. For each issue, a range of options was discussed to stimulate reactions. An appendix was added to clarify confusion over detection levels and what role they play in a numerical standards approach. It could be eliminated and inserted as a technical piece for the appropriate issue. An analysis of Wisconsin's law was not included, but is available and could be added as an appendix or a technical piece for the issue.

Bob Schwarberg, DOA, asked who is the target audience. Roger responded the intended audience will be a mixture of people. The document should not be too complex for the general public but not too simplistic for technical people. Roger stated he would like to use the networking system to get local or regional parties involved, but avenues for distribution still need to be developed.

Karen Witter asked what steps are next in the process. Roger responded once the Issue/Option paper is polished, the draft should be distributed to the GAC to get a range of comments and reactions from a group that is more encompassing and covers the interest groups. The draft should also go to the Education Subcommittee to blend in with other information being developed and distributed throughout the State.

Roger said it would also be helpful to incorporate regional workshops into the process, similar to those used in "A Plan for Protecting Illinois Groundwater." The workshops can provide very positive input.

John Shafer, ISWS, asked what process is used to get from the Issues/Options document to a proposal. Roger responded that in the Environmental rulemaking system, IEPA would like its proposal to the Board to be sanctioned by the ICCG and GAC. IEPA would like to use outreach process, such as the workshops, to gain as much consensus as possible.

John Shafer asked if IEPA was obligated to accept the opinion of the Committee. Roger stated the IEPA is not obligated, but wants as much consensus as possible before the proposal is submitted to the Board. John also asked if the proposal will be reviewed and accepted by interest groups prior to Board hearings. Roger responded that the GAC is the only group to which IEPA is committed. The Council is comprised of all of the interest groups involved so, indirectly, they will be included in the process.

Roger discussed the review of information from other state programs. IEPA will incorporate ENR's Survey Report into the Issues/Options paper.

The discussion turned to development of the ECIS process. Roger suggested the process should begin upon appointment of the GAC and the Education Subcommittee can play its role to get it moving as soon as its ready. Mitch Beaver reported Fast Track ECIS hasn't begun yet but upfront work on economic alternatives can begin. Mitch speculated there would be no problem keeping on target with the schedule. The Education Subcommittee should be able to deliver the message with the issues and options. The Subcommittee's role would be to facilitate the standard setting process. Roger stated the outreach program will have to start this summer.

A draft regulatory proposal should be done by September of 1988 which would incorporate comments from various groups and individuals encountered in workshops. Between September, 1988 and July, 1989, additional outreach and ongoing editing and review can take place. This allows everyone adequate time and opportunity to make their statements. The summer can be used to lay out issues and begin getting reactions to options.

Karen Witter stated the importance of making sure people understand the implications of all the issues and options. Roger added that the agricultural community should pay close attention to the development process to make sure they are happy with the output. Roger suggested alot of input by DOA will ensure something workable, acceptable and technically feasible for Illinois.

Roger asked the Committee to read and discuss within each agency and return comments in one month. The first editing stage should be substantive to make sure all issues/options have been addressed, full range of options and neutrality exists for each issue, its readable, and can be absorbed by the audience. The draft is condensed enough now that additional explanations can be inserted if needed.

Roger cautioned the members on the distribution of the draft. It is still in its early stages and should be reviewed internally only. When the content of the draft is acceptable, detailed wordsmithing can polish it up. It can then be sent to GAC and incorporated in the Education Subcommittee's workplan.

> Summary - The draft Issues/Options paper was presented for internal review and comments were requested in one month. Once the draft has been reviewed by the Committee, it will be forwarded to GAC and available to the Education Subcommittee. IEPA will conduct regional workshops during the summer, 1988, in cooperation with the Education Subcommittee. A preliminary standards proposal will be developed by September, 1988. Additional outreach efforts and refinements will be made from September, 1988 to July, 1989.

Report of the Education Subcommittee

Mitch Beaver reviewed the status and progress of the Education Subcommittee and distributed copies of the minutes from the last meeting. IGPA logo guidelines were mailed prior to the meeting. Mitch noted edits made by the Subcommittee and called for a vote of approval of the logo guidelines as ammended.

Mitch moved for approval and Gary Clark seconded the motion. The guidelines were approved unanimously.

The Subcommittee held an IGPA workshop January 13, 1988 at DOA. Ninety-five people representing fifteen agencies attended the workshop. This workshop will be a prototype for the March series of workshops. ENR has received alot of positive feedback but will incorporate a few changes to make it more productive.

Harry Hendrickson, ENR, distributed the draft brochure for the March workshops and reviewed the agenda. Harry asked for each agency to send a representative to participate in the Question and Answer Panel session for each workshop.

Roger Kanerva expressed concern regarding the listing of participating agencies. While its a positive effort to have all members present and active, it may be hard for agencies with minimal roles to attend each meeting. Harry said the agenda was designed to cover the entire series. The panel will vary from workshop to workshop and each agency has the option of participating. Roger said because all agencies are listed, people may think those not present are not participating. It is important to avoid any negative image from being formed about any ICCG member agency. Mitch suggested that a separate agenda could be developed for each meeting to list those agencies present. John Plunk, ESDA, agreed with concerns expressed by DNS who decided not to participate. ESDA is not as involved and therefore not as committed as the other agencies but will continue to be active because at some point in the future their role may be expanded. John suggested DNS be listed although they will not be attending the sessions. Mitch Beaver said it was doubtful the registration form could be changed at this point.

Karen Witter said all agencies were put on the Committee to create a more positive, united and comprehensive program. It is up to each agency to decide when and how much they should participate. Mitch Beaver suggested that all 10 agencies be listed on all future publications because they are all included in ICCG and IGPA. Lead agencies should be sensitive to and accommodate the others in terms of participation and agency specific priorities.

Other progress made by the Subcommittee included:

- IGPA display completed and exhibited at Committee meeting.
- IGPA brochures completed and distributed to Committee.
- ISGS slide set is ready for final edits and review by Committee members.
- A draft of the referral system was distributed. Mitch asked for comments or changes by February 9, 1988.
- A list of all available materials that have been approved by the Subcommittee has been published. The materials will now receive the IGPA logo.
- Dick Schicht, ISWS, discussed the outcome of a work group designed to develop a sample screening program for state fairs. The group decided the liability was too great regarding test results. As an alternative, IDPH kits will be prepared for distribution at fairs. The Farm Bureau will participate and help coordinate the effort. The number of kits available will depend on what IDPH can handle. The display will be part of the groundwater education booth.

Groundwater Protection Month

The Subcommittee has developed a proclamation for groundwater month, May, 1988.

A work group has been established to develop press releases and a general theme. The group will meet February 5th; other members are welcome to participate.

Considerable discussion took place on the proclamation and other materials developed for distribution through the Committee. Roger Kanerva felt some of these materials send the wrong message. The Act was much more extensive in statutory and regulatory authority than it appears and more emphasis should be placed on the enforceable components of IGPA. The proclamation package should include all work associated with IGPA and the regulatory process should not be downplayed. The material just needs to be presented differently to balance all of the components.

Karen Witter said the activities presented during groundwater month can also be used to balance the components of IGPA, both regulatory and non-regulatory. The proclamation is used to send the message that groundwater is important to the Governor and the State of Illinois. Mitch Beaver added that they tried to cover what the Governor emphasizes environmentally such as not over stressing regulatory authorities to avoid upsetting the business sector. Roger agreed with Mitch regarding the Governor's historical role in environmental issues but IGPA is a step beyond the traditional approach as is a legitimate groundwater protection effort. Since a regulatory agency was charged to chair the ICCG, it is obviously intended to focus on regulatory aspects. Roger also agreed that the intent is not to upset business. Environmental groups would also become upset if regulations were downplayed. Dave Baker, ENR, felt the environmental groups would see the balance. John Plunk stated some materials stressing regulatory aspects should be going to those who need to understand it but, for the general public, materials don't need to overemphasize tough regulations. Dave Antonacci, DPH, stated those in the business of regulating must sometimes emphasize such authority. These agencies have the responsibility to enforce certain actions. The intent of the law should be clearly stated so people know up-front what penalties exist for non-compliance. Roger Kanerva emphasized the concern the legislature had about contaminated wells and means to keep such situations from occurring in the future. Regulations can be presented in a positive manner such as protecting citizens from drinking contaminated water.

Karen Witter agreed that all of the tools of the Act need to be used in a postive manner. She added that the diversity of information used should reflect the targeted audiences and their specific needs. Mitch Beaver concluded the discussion by saying the role of the Education Subcommittee was to represent ICCG members, therefore they will try to present materials of those concerned as best as they can. Mitch also asked members to assertively raise these concerns in the Education Subcommittee. Harry Hendrickson informed the Committee of another brochure in development that deals with common questions and answers of IGPA which focuses on regulatory aspects.

Summary -- It was generally agreed that there should be a balanced approach which recognizes the importance of regulatory components of IGPA.

The next Committee meeting is scheduled for April 5, 1988 from 9:00 a.m. to 12:00 p.m. at IEPA (1340 N. 9th, Springfield, IL).

CS/mls/sp0484j/1-8

E X H I B I T 2

MAY 9, 1988

The meeting was called to order at 9:30 a.m. at the Illinois Environmental Protection Agency, the following were in attendance:

Roger Kanerva	Illinois Environmental Protection Agency
Jerry Paulson	McHenry County Defenders
John Pitz	Water Well Contractors
Mel Dahl	City of Elgin
Harold Reetz	Illinois Fertilizer and Chemicals Association/Potash and Phosphate Institute
John A. Baker	Waste Management, Inc.
Allen Panek	City of Naperville, Water Utility
Cathy Patriquen	Chemical Industries Council
Jackie Bruemmer	Southwestern Illinois Planning Commission
Kevin Greene	Citizens for a Better Environment
Bernie Killian	Illinois Environmental Protection Agency
Karen Witter	Governor's Office
Joanna Hoelscher	Citizens for a Better Environment
James Onken	Illinois Department of Agriculture
Dennis McKenna	Illinois State Geological Survey
Mitch Beaver	Illinois Department of Energy and Natural Resources
John S. Moore	Office of State Fire Marshal
Bob Schwarberg	Illinois Department of Agriculture
Roger Selburg	Illinois Environmental Protection Agency
Bob Clarke	Illinois Environmental Protection Agency
Carol Sinnott	Illinois Environmental Protection Agency

Opening statements were given by Karen Witter, Governor's Office and Bernie Killian, IEPA.

Interagency Coordinating Committee on Groundwater

Roger Kanerva reported the ICCG has met 4 times and reviewed major accomplishments and implementation measures of each meeting. Committee members are currently working on the funding problem for the pesticide study and the possibility of holding a fall conference for groundwater quality standards. The Council may want to help design and sponsor workshops. The next ICCG meeting will be July 7, 1988. Minutes from meetings can be provided for those who wish to have copies.

Implementation Plan

Roger Kanerva reviewed the Implementation Plan, each action item and the status of each. The Plan is used as a working outline for members. Most items include a review and approval by GAC for increased interaction. While many activities have been completed, many items still have much room for input and consideration. An evaluation process was suggested by Karen Witter to measure levels of achievement. The process still requires establishment of indicator methods.

Progress Report

Roger Kanerva presented the Progress Report and rating system developed for tracking major items of the Implementation Plan. Prior to each ICCG meeting, the rating for each item is updated and major delays or advancements are discussed during the meeting.

Regulatory Agenda

Roger Kanerva presented the Regulatory Agenda prepared by IEPA and recommended to ICCG. It covers issues that were not previously resolved. Roger described each issue included on the agenda and stated there are presently mixed feelings on the list and the agencies designated to pursue regulatory action.

Jerry Paulson, McHenry County Defenders, asked for a report of budget activites for carrying out the Act. Roger said the mandated funding programs could easily be pulled together; they include: hazardous waste fund, special waste hauling fee and private water well permit fee. Allen Panek, City of Naperville, asked for an overview of funds for all programs and trouble areas. Roger said most of it could be covered during the meeting. Karen Witter added that there is a shortage of funds for most programs especially those considered long-term.

Setback Protection and Development of Primer

Bob Clarke, IEPA, presented a slide show on setback provisions of IGPA, 200' and 400' delineations and explained the process of notifying owners of assigned setbacks. Bob also explained the development of the Primer used to explain IGPA and educate people on groundwater, who uses groundwater, how groundwater becomes contaminated, levels of contamination, and the importance of protecting groundwater. Bob reviewed IEPA's monitoring program for VOC's and pesticides and results to date. John Baker, Waste Management, Inc. asked if operators were confused on delineations and how many errors were found that could alter setbacks. Bob responded that most operators know their well construction data and understood delineations. There were a few hydrogeologic errors but most were due to misinformation on well number, and locations. There were also several unpermitted wells. Allen Panek asked how many surveys are done and how many does the Agency intend to complete. Bob said a survey will be completed for every well in the State. Development of a priority system is underway. Roger added that a reporting system for survey progress is being developed to keep people informed. Bob concluded by saying every county, municipality, well owner, and County Health Dept. will receive survey packet when complete.

Groundwater Education Program

Mitch Beaver, ENR, presented the Education Program and welcomed ideas and input from Council members. Mitch reviewed:

-- education plan
-- targeted groups
-- materials republished for distribution
-- purpose and function of groundwater Education Subcommittee

-- press releases developed for IGPA
-- development of traveling displays
-- establishment of Groundwater Month and scheduled activities
-- development of Speakers Bureau
-- groundwater slide set
-- education work plan and responsible party for each activity
-- IGPA workshops and participants

When reviewing list of participants for workshops, Kevin Greene, CBE, asked why there was little participation by the general public. Roger Kanerva responded that this workshop was not geared toward general public but toward interest groups and those more deeply involved. Mitch Beaver added that there are probably better avenues than workshops to reach general public. Jerry Paulson asked if there would be municipal legal council workshops. Mitch answered that the Subcommittee felt there was not yet enough interest. Cathy Patriquen, CIC, announced they have an education program and every year incorporate environmental issues into teachers conferences; she suggested the Subcommittee make contact with this group. Jerry Paulson asked how the Education Program is funded and suggested working with local groups and planning agencies to conserve funds. Mitch Beaver responded there is approximately $40,000 available for the Program and ENR has hired a full-time coordinator. They have been making contact with local groups. Mitch Beaver introduced Harry Hendrickson, ENR's Groundwater Education Program Coordinator. Harry reviewed materials currently available for distribution and the traveling display.

Strategy for Recharge Area Mapping and Pesticide Evaluation

Mitch Beaver and Dennis McKenna, ISGS, presented research strategies for recharge area mapping and pesticide evaluation. The long-term program will be presented at the next meeting. Dennis reviewed the legislative mandates and groundwater basics prior to explaining the status of each study.

Dennis presented several computer generated maps analyzing components used to prioritize recharge area mapping. The definition of appropriate recharge areas should meet legislative mandate.

For the pesticide evaluation, the Surveys will examine nitrate and pesticide contamination and recharge systems in relation to agricultural practices that may affect the degree to which pesticides can reach groundwater. They will use existing surface water and soil literature and try to analyze in terms of groundwater. The Surveys may incorporate a random stratified sampling design and begin with a pilot study to implement analytical methods for pesticide sampling and test recommendations of statewide plan. By year #3, sample selection will begin representing typical areas of the State. Actual sampling would take place randomly throughout the year on a two week basis.

John Baker asked how the recharge mapping system would compare to USEPA's DRASTIC system. Dennis answered the Surveys weren't in total agreement with the parameters used in DRASTIC. Jerry Paulson, asked if gathered information will be placed into GIS and, if so, to what degree of accessibility. Dennis answered that the information will be placed in GIS, but at varying levels of

accessibility. The susceptibility information was not intended for site specific use and some areas experience natural fluctuations of different parameters. Jerry also asked how the Surveys will interact with USEPA's pesticide study and if there will be any overlap with University of Illinois' studies on conservation tillage. Dennis responded that the Surveys will be cooperating with USEPA but studies won't be compatible due to design variations and timeliness of sample collection. There will be some overlap with U of I studies; there are four on-going programs which can all be pulled together and pieces can be used to prototype studies. Mitch Beaver will send copies of research compendium to Council members.

Mitch Beaver reviewed current budget and attempts to increase funding for research programs. They currently receive $350,000 from Hazardous Waste Research Fund for research and education. ENR is asking for an extra $210,000 per year for three years from the Environmental Protection Trust Fund. Roger Kanerva added that another project has just been added to the Trust Fund which may affect what can be allocated to new research efforts.

Issues and Options for Groundwater Quality Standards

Roger Kanerva presented the draft Issues/Options and explained the mandate, rulemaking, importance of outreach process, and IEPA's front-end work for developing groundwater standards. Roger stressed if more work is done now the process will proceed much smoother. The Agency would like the Council to review the document and present it to the groups they work with to gather some input. When a more polished draft is available, it can be presented at regional workshops. Roger reviewed legislative guidance and development of issues. All issues were included to reinforce what's already been agreed upon. To assure orderly progress, the Agency doesn't want to debate issues previously resolved.

Roger reviewed each issue in detail, explained how the range of options were decided, what the middle of the road option could be, and reviewed comments from ICCG. One agency suggested a technical subcommittee be created to deal with toxicology and other technical aspects needed to resolve issues. Roger anticipates one more discussion on the draft with the ICCG. The draft was designed not to be too technical nor too general.

A front-end piece will be drafted to cover general information regarding groundwater standards. Roger stressed that there will be a non-degredation provision but what it will consist of is yet to be determined. The Agency is suggesting a creative multiple-tier classification with a groundwater alert to trigger a broad response. Roger also wants to deal with the environmental and business group's concerns and provisions up-front. He feels it is more constructive to deal with the spectrum at the beginning of the process. After review by members, IEPA would like a formal response from the Council.

John Baker commented that it is critical at what point standards are applied and what reaction to take when contamination occurs. Joanna Hoelscher, CBE, stated it is important that standards don't appear as a license to pollute groundwater.

Cathy Patriquen, CIC, asked what industry and others need to be doing at this point, and in what time frame should comments be returned. Roger responded it would be helpful to begin dialogue but doesn't want a debate about details. The issues should be reviewed in a general sense. Fine-tuning can take place later and comments can be sent by July 1, 1989, following legislative session.

Considerable discussion took place on the processes used to reach consensus by Council to advise IEPA on Issues/Options. The group agreed to study the issues, consult other groups and make all comments available to other members. After more discussion and research, the consensus reached can be presented to IEPA. Most members felt the draft was acceptable with some refinement. Joanna Hoelscher suggested the draft be carefully reviewed to remove any biases that may be present in Options. Most members also agreed that general standards workshops are appropriate and the issues should be taken out and discussed as much as possible. This allows individuals to express views and make comments. Allan Panek summarized the process: first, the group must decide if draft is complete and unbiased; second, the Council can select options based on feedback and detailed discussions.

Roger Kanerva asked if any members objected to presenting the draft to IERG. He had some concern over the way the group might proceed with draft. There were no objections. Cathy Patriquen requested that Council be informed if anything distributed should not be circulated or is confidential. Roger stated all materials present can be distributed.

Minimal Hazard Certification

Bob Clarke presented the process and intent of the Certification Program and the development of guidelines. The package is still in development. Bob reviewed what units are eligible for Certification and reviewed a worksheet developed to help applicants determine if on-site release(s) have occurred. The guidelines will be finalized and submitted to JCAR as rules. For the interim, emergency rules are being considered. Several questions were asked on enforcement and compliance. The rules are enforceable. If operators fail to comply with Conditions of Certification, it can be revoked or, in some cases, forced to move from within the setback.

Election of Chairperson

Allen Panek nominated Mel Dahl, City of Elgin, to be Chairperson and suggested an alternate be chosen in the event of his absence. Cathy Patriquen seconded the nomination. The vote was unanimuous. Jerry Paulson nominated Allen Panek as Vice Chairperson; Jackie Bruemmer, Southwestern Illinois Planning Commission, seconded the nomination and he was elected unanimously.

The discussion on selection of alternates for Council members ended in a decision to use a proxy system to avoid legal discrepancies. John Pitz, Water Well Contractors, said he felt the Council should not designated alternates until legality is confirmed and agreed with the selection of a proxy system.

Other Business

Carol Sinnott, IEPA, reviewed the Agency's support and travel arrangements for GAC. Roger Kanerva announced Carol has been designated as liason to the Council. She will be preparing minutes for this meeting and future meetings unless Council decides to do them on their own. Carol will keep track of Council activities and be available as a resource.

Jerry Paulson stated the Council needs to decide how to handle public participation. Mel Dahl suggested time be added to the agenda for public comment for the good of the order. Council will consider sponsoring workshops and discussed the possibility of holding a joint meeting with ICCG.

Council members requested to receive ICCG Education Subcommittee minutes hence forward.

A group photo was taken of Council members.

Next Meeting

The next Council meeting is scheduled for Monday, September 12, 1988 at 9:30 a.m. at IEPA, 1340 North 9th Street, Springfield.

CW:dks/1474j, 66-71

EXHIBIT 3

The meeting was called to order at 9:00 a.m. at the Illinois Environmental Protection Agency in Springfield.

The following Agency representatives were in attendance:

Carol Sinnott	Illinois Environmental Protection Agency
Harry Hendrickson	Illinois Department of Energy and Natural Resources
David Baker	Illinois Department of Energy and Natural Resources
Bob Schwarberg	Illinois Department of Agriculture
Bob Clarke	Illinois Environmental Protection Agency
Keros Cartwright	Illinois State Geological Survey
Dick Schicht	Illinois State Water Survey
Allen Oertel	Illinois Department of Mines and Minerals
John Washburn	Illinois Department of Transportation - Division of Highways
Jack Moore	Office of State Fire Marshal
David Antonacci	Illinois Department of Public Health
Roger Kanerva	Illinois Environmental Protection Agency

The Committee was chaired by Roger Kanerva in the absence of IEPA Acting Director, Bernie Killian. Allen Oertel, IDMM, moved for approval for the minutes from the April 5, 1988 meeting. Jack Moore, OSFM, seconded the motion and they were unanimously approved.

Groundwater Advisory Council

Roger Kanerva discussed the first meeting of the GAC held in Springfield on May 9, 1988. The agenda planned by ICCG was followed. The agenda was used to help acquaint the Council members with IGPA and the work being done by ICCG members. Through the program discussions, Council members began expressing concern of over budgetary constraints, such as the research program for pesticides in groundwater.

IEPA has received comments from various Council members and IERG on the Issues/Options draft. There should be sufficient responses to begin revising the standards paper. Some Council members suggested the Issues/Options draft be revised to a question and answer format. Roger said that idea is a possibility. The Council was favorable to idea of a regional outreach approach to present the standards process. They will consider assisting the ICCG in such a process.

The Council elected Mel Dahl, Director of Elgin Public Works as Chairman of the Council. Allen Panek, Naperville Department of Water and Wastewater Utilities was selected as Vice Chairman. IEPA will make sure there are no legal problems with the election of a Vice Chairman.

The Council's next meeting is scheduled for Monday, September 12, 1988. Karen Witter, Governor's Office suggested ICCG and GAC hold a joint meeting. It would give Council members the opportunity to meet Agency respresentatives and observe ICCG operations.

Roger also reported the suggestion that the Council sponsor a fall seminar to commence the standard's process. He felt the Council was interested. IEPA would like to see a seminar in October which means planning would need to begin prior to the Council's next session. The format could include general discussion of technical issues and an idea exchange between those present. The Committee could co-sponsor or hold something on its own. Issues to discuss could include: research, mapping, pesticides, surveys, and standards. Members were receptive to both a fall groundwater seminar and joint meetings with ICCG and GAC. Jack Moore, OSFM, felt they were good ideas and we should take advantage of an opportunity to meet together. Dave Antonacci, IDPH, asked Roger what kind of format would be considered for the joint meeting. Roger responded that the ICCG could go through the major issues, hold a regular meeting and conclude with an open session for both groups. This time could also be used to discuss the fall seminar.

USEPA Proposal for Pesticides and Groundwater

Roger Kanerva began the pesticide discussion by announcing that funding for the pesticide evaluation from the General Assembly will be $210,000 per year to be divided between IEPA and DENR. Funds were reprogrammed to get initial phase completed and it appears more money will be available in 1990 than anticipated. The legislature also added additional projects that were not anticipated. The Agency is working with the Governor's Office to straighten out overprogrammed money. There is still $95,000 for a cooperative network design for monitoring South East Chicago and money for a cooperative with Department of Mines and Minerals. Bob Schwarberg, DOA asked to be notified when pesticide funding is finalized.

Bob Schwarberg then presented USEPA's basic strategy for pesticides and the comments received. Bob prepared an executive summary of the proposal, distributed it and reviewed the major provision. Several other states were also present at the June 7, 1988 meeting and provided comments on the proposal and their own successes/failures with their pesticide programs.

USEPA announced there will be no money for the states to develop a program. They felt the states should be more stringent than MCL's and asked for input on use of health based risks, MCLG's and negligible risks. USEPA is pushing for the states to get their own funding. If the states fail to implement a plan, a chemical may be restricted statewide. Bob reported on the procedures used by Florida and Wisconsin to implement their programs and the roles of different state agencies in development of standards. Both states established a Pesticide Review Council responsible for program funding and oversight of the lead agency. Bob was unsure of the implementation costs, but it takes $1 million per year to maintain the program. Enforcement and Implementation are on a county by county or chemical by chemical basis.

Bob then asked the Committee for suggestions on how the state should respond to the proposal and what agency should take the lead. Bob felt the Governor could choose an agency or designate the lead Agency as the same one which regulates FIFRA. In either case, the lead will need the cooperation of other agencies.

Roger Kanerva agreed and stated Karen Witter had also expressed alot of interest in a State response. Roger agreed the Committee should take an active role and nominated DOA as the lead agency with EPA, DNR, DPH participating. Bob anticipated a draft response would be presented to DOA's Director within the next week. The draft can then be reviewed by other agencies.

Summary

Bob Schwarberg reviewed USEPA's proposal and asked the ICCG and member agencies to assist with a State response. A Subcommittee was then formed. The Pesticide Subcommittee will function as a Pesticide Review Council. There were no objections to establishing the Subcommittee to be lead by DOA. DOA will draft a response to USEPA's proposal and finalize it through participation with ICCG.

Report of the Education Subcommittee

Dave Baker, DENR, presented the report for the Education Subcommittee. The group's last meeting was on June 17, 1988. Nine agencies were present. The focus of the meeting was on the program survey and development of next year's workplan. Harry Hendrickson, DENR, distributed program evaluation summaries. Dave reviewed Subcommittee thoughts on which areas should be de-emphasized, new activities that should be undertaken, rank of constituency groups, and methods of outreach.

Harry reviewed the draft work plan; items completed during the first year have been removed:

- -- Groundwater slide prepared by ISGS show finalized - Copies will be made available
- -- Question/Answer Brochure should be ready for the Illinois State Fair
- -- Groundwater video being discussed; an outline was distributed
- -- After concern over Speakers Bureau, participants are now limited to state agency personnel and GAC
- -- State Fair exhibit under construction; looking for volunteers to assist
- -- Review of Groundwater Protection Month and plans for next year's expansion
- -- Technical Groundwater Institutes; a prospectus is being prepared

The workplan can be officially adopted when reviewed by ICCG and GAC. If a joint meeting is held, the agenda could include time for discussion and approval of the workplan.

Keros Cartwright, ISGS, suggested an edit to the workplan relative to materials prepared for the Technical Institutes versus general technical information developed for practitioners and professionals.

Roger Kanerva suggested the Education Subcommittee consider helping with the planning and development of a fall seminar. If the Council is interested, an agenda and location can be prepared in August and finalized in September. Harry suggested IEPA take the lead on this project since the seminars will be dealing with the standards process.

Harry also announced a inter-state meeting is being planned for water resource administrators.

Well Site Survey Progress Report

Roger Kanerva distributed the Survey Progress Report and explained its development. If members want copies on a monthly basis they should contact IEPA. Dave Antonacci suggested they be distributed at each ICCG meeting. Bob schwarberg suggested they could also be sent out quarterly.

Groundwater Standards Technical Team

Roger Kanerva proposed to ICCG the establishment of a technical team to help begin the standards process. The team would report to ICCG. DOA had originally suggested the idea in their review of the Issues/Options paper. There were no objections; Roger asked the agencies for candidates by the end of July so the group can begin meeting.

Other Business

Roger Kanerva distributed comments on the Issues/Options paper and the ICCG Progress Report.

Allen Oertel relayed concern from groundwater consultants over the installation and construction of monitoring wells. There is some confusion among the industry over the definition of monitoring wells and and of those who install them. IDMM is working with IDPH on a resolution. Allen asked Committee members for suggestions. Roger said if the issue needs more discussion it can be added to the next meeting agenda.

Harry Hendrickson, DENR, then raised questions on the definition of a boring. Dave Antonacci said IDPH is working on defining borings and developing procedures for closure.

Next Meeting

The next Committee meeting is scheduled for September 12, 1988 at 9:00 a.m. It will be held at IEPA, 1340 North 9th Street, Springfield, unless other arrangements need to be made to accommodate the GAC.

CS:jas/2106j,1-4

E X H I B I T 4

On Groundwater and the
Groundwater Advisory Council

September 12, 1988

The session was called to order at 9:00 a.m. at the Illinois Environmental Protection Agency, the following were in attendance:

Karen Witter	Governor's Office
C. Lawsen Corlew	Illinois Department of Commerce and Community Affairs
Duane Pulliam	Illinois Department of Mines and Minerals
Gary R. Clark	Illinois Department of Transportation-Division of Water Resources
John R. Washburn	Illinois Department of Transportation-Division of Water Resources
Bob Schwarberg	Illinois Department of Agriculture
Mitch Beaver	Illinois Department of Energy and Natural Resources
Gretchen Bonfert	Governor's Office
David Antonacci	Illinois Department of Public Health
Allen Panek	GAC, City of Naperville, Water Utility
John Pitz	GAC, Water Well Contractors
Jerry Paulson	GAC, McHenry County Defenders
Kevin Greene	GAC, Citizens for a Better Environment
Mel Dahl	GAC, Elgin Public Works
Roger Kanerva	Illinois Environmental Protection Agency
Bernie Killian	Illinois Environmental Protection Agency
Jackie Bruemmer	GAC, Southwestern Illinois Planning Commission
David Baker	Illinois Department of Energy and Natural Resources
Joanna Hoelscher	Citizens for a Better Environment
Dennis P. McKenna	Illinois State Geological Survey
Roger Selburg	Illinois Environmental Protection Agency
Dick Schicht	Illinois State Water Survey
John Baker	GAC, Waste Management, Inc.
Robert Clarke	Illinois Environmental Protection Agency
Harold Reetz	GAC, Potash and Phosphate Institute/Illinois Fertilizer and Chemical Association
Harry Hendrickson	Illinois Department of Energy and Natural Resources
Carol Sinnott	Illinois Environmental Protection Agency

Opening statements were given by Karen Witter, Governor's Office.

Mitch Beaver, ENR, moved for approval for the minutes from the July 7, 1988 meeting. Dave Antonacci, IDPH, seconded the motion and they were approved unanimously.

ICCG Session

State's Response to USEPA's Proposal for Pesticides in Groundwater

Bob Schwarberg, IDOA, distributed drafts of IDOA's response to USEPA's proposal for review by ICCG. Bob asked for comments to be returned by September 19 so the draft can be finalized and returned to USEPA. Bob reviewed the major sections of the draft and the revised funding proposal.

Dennis McKenna, ISGS, reviewed their mapping procedures and the elements of DRASTIC. ISGS has difficulty using USEPA's parameters, such as depth to aquifer and their definition of an aquifer. There are additional problems with adopting the parameters to Illinois and will affect the use of standards. The Survey is developing a response to the section on Mapping/DRASTIC.

DOA included an auditing program as well as monitoring by the registrant to verify results and provide quality control. A Best Management Plan will require considerable resources to implement and maintain and may need legislation for funding.

Roger Kanerva, IEPA, commented that USEPA developed a generic plan for comments, and responses are based on a chemical by chemical basis. Illinois' response is on the entire program, not just specifically on Aldicarb. Bob Schwarberg added that it is important to comment now because the next pesticide may be of more concern in Illinois. The Plan also requires cooperation of all agencies involved.

Karen Witter, Governor's Office, suggested if there is a general consensus, then the proposal should be sent by the Director of IEPA as the Chairman of the ICCG. Roger Kanerva suggested a section be added explaining the ICCG, agency participation and the lead role taken by IDOA.

Jerry Paulson, McHenry County Defenders, asked what agency would be responsible for developing the Plan. Bob answered that USEPA suggests a Governor's delegate but normally development would be by the Agency administering FIFRA.

Summary

Bob Schwarberg reviewed the response to USEPA's pesticides in groundwater proposal and asked for comments by September 19th. The proposal will be sent by ICCG.

Groundwater Quantity Report from the State Water Plan Task Force Subcommittee

Gary Clark, IDOT, provided an update of the Groundwater Quantity Subcommittee, which has met several times since February, 1988. The Subcommittee has reviewed recommendations from the Plan, recent aquifer management research, 1983 Water Use Act, and defined its work efforts. Gary distributed and reviewed outlines of the 2 major products (see Attachments). The report and "white papers" will be used to educate Committee members on all issues and to help address overlaps or issues that may have been overlooked. The Committee's goal is to draft a set of recommendations by the end of December, 1988 in the event of a legislative initiative.

Roger Kanerva asked if the Subcommittee plans to have any outreach efforts. Gary responded the Subcommittee will be meeting with the Illinois Farm Bureau, Illinois irrigation associations and water well drillers and contractors, and Illinois Municipal League to begin addressing the issues. The Subcommittee welcomed requests to meet with other interest groups. The Subcommittee also hopes to have larger outreach meetings early in 1989. Roger suggested holding discussions with the GAC.

Gary concluded his report by explaining the Subcommittee's two areas of responsibility: 1) management of large/high yield/high use aquifers and 2) resolutions of one on one well conflict. Because the drought has heightened awareness, Gary anticipates introduction of quantity legislation by someone; therefore, the Subcommittee would like to be prepared for a well thought-out product.

Groundwater Standards: Issues and Options

Roger Kanerva reported on the progress of the Issues/Options paper. IEPA received several comments from GAC members. Due to the nature of the comments, the details of the paper will need to be re-written.

General observations made by review of comments:

1. The GAC comments indicated the paper needed expansion.

2. The paper did not adequately address why certain issues were being raised and it was not apparent why certain comments were being made. The comments were based on the difficulty of getting such an enormous package through the rule-making process. To rectify this concern, IEPA will try to explain the rule making process and its associated effects.

3. Several comments were made on the use of "buzzwords" in describing the options. Those can be removed, but the options will still be designed to stimulate ideas.

4. The draft will also be revised to incorporate new and updated information.

Roger concluded the discussion by announcing the draft is being totally rewritten and is near completion. Following in-house review, the Issues/Options paper will be distributed for one last review.

Permit Procedures for Monitoring Wells

Dave Antonacci, IDPH, reviewed the history of changes in the permit procedures from IDMM to IDPH. Most agencies drill their own monitoring wells. Dave felt there should be one agency designated to be the repository for all information and data on wells being drilled.

Dave suggested the agencies involved get together and decide how to keep these wells from falling through the cracks. Perhaps those agencies regulating contamination sites should permit their own wells. Dave reported that Dick Schockley, IDMM, felt strongly that IDMM maintain permit control over wells surrounding sites they regulate.

Roger Kanerva suggested that IDPH take the lead and pull together the agencies involved to figure out what can be done administratively.

Other Business

IEPA presented its recently completed video on well site protection. The video encompasses the basics of IGPA, the survey program and an introduction to the groundwater protection needs assessment.

Groundwater Technical Policy Forum
Joint Session: ICCG and GAC

Roger Kanerva and Mel Dahl, Chairman of GAC, introduced the concept of a seminar which was discussed at the GAC's first meeting and reviewed the major components suggested in the agenda. The Council will be the sponsor of the seminar, serve as moderators and handle questions. The agenda also includes a summary response panel at the end of the day. The Council is considering having its third session of the year the day following the Forum.

Roger and Mel asked for input on the date, place and proposed agenda. Arrangements, such as room rental, can be covered by support to the GAC; others who participate will need to cover their own expenses. Several Council members suggested the Elgin or Naperville areas for easy access and interest from those areas.

Jackie Bruemmer, Southwestern Illinois Planning Commission, asked about the intended audience. Roger said, due to the nature of the Forum, the audience should be those who are actively involved in the issues. The Forum is not necessarily designed for a general orientation to standards.

John Baker, Waste Management, Inc. offered the use of their new laboratory facility to hold the GAC's meeting following the Forum. The Council is also welcomed to tour the new facility.

Summary

Roger Kanerva and Mel Dahl presented the Forum and asked for response on the date, place and proposed agenda. The GAC will work with IEPA to organize and make necessary arrangements.

Tentative dates for the Forum and GAC meeting are December 1 and 2.

Next Meeting

The next Committee meeting is scheduled for November 14, 1988 at 9:00 a.m. It will be held at IEPA, 1340 N. 9th Street, Springfield.

GAC Session

Procedural Issues

The Council was chaired by Mel Dahl. Jackie Bruemmer moved for an approval of the May 9, 1988 minutes; John Pitz seconded the motion and they were unanimously approved.

Mel suggested the Council form a Subcommittee to finalize the agenda; Jerry Paulson volunteered to chair the Subcommittee.

The Subcommittee will meet October 3, 1988 at 2:00 p.m. at NALCO. Carol Sinnott will begin checking potential locations.

Roger Kanerva reported on three legal issues raised at the Council's first meeting:

Issue 1: The Council is not authorized to elect a Vice Chair.
Issue 2: Based on the Civil Administrative Code, the Council has authority to adopt rules; therefore, a rule can be adopted for members to vote by proxy.
Issue 3: The Council does not have authority to adopt alternates.

Jerry Paulson asked what are the procedures for resignation. Mel stated that resignation and re-appointments would be made by the Governor's Office.

ENR's Long Term Research Program

Mitch Beaver, ENR, distributed copies of the program and reviewed the budget for the long term research effort. Mitch reported there is not adequate funds available for research and education; at a minimum ENR needs $250,000 just to maintain progress on the basic assessment of pesticide impacts on groundwater and recharge area mapping.

Fiscal Year 1989

Expanded Pesticide Impact Study:

A total of $210,000 from Environmental Protection Trust Fund has been allocated. IEPA and ENR have each been allocated $105,000. ENR Water Survey and Geological Survey will perform the work under contract to IEPA and ENR through the University of Illinois.

Research and Education:

A total of $210,000 is available from the Hazardous Waste Research Fund. Groundwater research receives $155,000 and education receives $55,000.

Total for FY'89 - $420,000

Fiscal Year 1990

For research and education, ENR expects to receive $50,000 per quarter as its anticipated increase as a result of IGPA. A total of $360,000 for research and education will be available if ENR receives anticipated funds.

Dick Schicht, ISWS, reviewed ENR's mandated programs: Recharge Area mapping and pesticide impact study.

Recharge mapping is on schedule and will be done by February, 1989. A series of maps will display areas prone to contamination. Another set, yet to be defined, will be developed showing aquifers. ISWS is estimating 15 years to do detailed recharge mapping. The Surveys are also involved in groundwater research not dependent on IGPA funds:

- movement of contamination through geologic materials
- aquifer restoration and remediation technologies

Dick reviewed statewide groundwater quantity and quality assessments and the six major tasks for the monitoring program.

Al Panek asked if sampling protocol and lab procedures are the same for most agencies. Dick responded that most were the same except new procedures that would be incorporated.

Jackie Bruemmer asked if recharge area maps will be general and usable to set up regional planning commissions. Roger Kanerva said they were designed to be general to help designate those commissions.

Dick stated the following programs are on hold for funds:

- Statewide Groundwater Quality and Quantity Assessment
- Statewide Groundwater Quality Monitoring
- Database Automation and Maintenance

Jerry Paulson asked how technical assistance would be given to local governments. Dick stated the process would vary based on how in depth the assistance would be. If more detailed information is needed, the Surveys would require funds from local governments for assistance.

Dennis McKenna, ISGS, presented ENR's pesticide research efforts. The Surveys will be examining compounds most frequently used in Illinois (44 compounds). The methodology and philosophical basis will be similar to USEPA's National Pesticide Survey. The Surveys will use stratified random sampling similar to DRASTIC as well as contamination potential maps. The Program is designed for drilled wells. Using NPS methods, a 3 year pilot study has been designed to get the program running. The pilot study will provide background research that can apply to all counties in the state and information can be expanded or deleted based on results of pilot study. The primary emphasis the first year will be on purchasing equipment and inventorying wells.

Cathy Barnard asked if information would be used to develop risk levels. Dennis said that USEPA determines those levels. Roger Selburg, IEPA, added that pesticide risk levels should be out by the time the NPS results are published.

Jerry Paulson asked if the legislative report is behind schedule and, if so, by how much. Dennis said they should be on schedule with an initial report on the pilot study but the statewide impacts study is on hold.

Bob Schwarberg, IDOA, discussed a cooperative with the Surveys to pull together fragmented monitoring data. Bob felt it was imperative for Best Management Plans for specific pesticides to pull together data to define pesticide use problems.

Jerry Paulson was concerned about approving a research plan that violates the Law by being incomplete. Mitch Beaver reassured the Council that an initial report will be done; the law specifies an initial report and ENR will meet the deadline.

John Pitz made a motion to accept the long term research program but noting Council's concern over lack of funding and recommend appropriate funding. Harold Reetz seconded the motion and the program was unanimously approved.

Cathy Barnard expressed political concern over recommendations on available funding.

Summary

The long term research program was reviewed by ENR and approved by the Council while concerns were raised over lack of appropriate funding and preparation of legislatively mandated reports.

Subcommittee Education Program

Mitch Beaver, ENR, updated the Council on the Education Subcommittee's efforts and announced their next meeting would be held at DOA, September 19 at 10:00 a.m.

Mitch distributed a list of the Subcommittee's accomplishments since its inception. The FY89 workplan was then distributed and Mitch asked for GAC approval. The workplan has been approved by the Subcommittee and ICCG.

Kevin Greene expressed concern that Public Health Fact Sheets had not yet been developed. Harry noted it was a recognized concern but no progress has been made. Harry will express this concern at next Subcommittee meeting.

Dave Baker, ENR, announced the Natural History Survey is working on IPM brochures and they may be available next year. Harry announced the availability of an overhead slide set and the ISGS slide show on groundwater and IGPA.

Jerry Paulson recommeded a short quarterly newsletter be developed and distributed to reach local officials. Mel Dahl suggested the use of existing newsletters, such as IML's.

Jerry Paulson moved for approval of the education workplan with considerations for the various suggestions. Jackie Bruemmer seconded the motion and the workplan was approved unanimously.

Summary

The Education Subcommittee's accomplishments and FY89 Workplan were distributed and reviewed. After recommendations were made, the FY89 workplan was approved.

Well Site Survey Report

Bob Clarke, IEPA, presented a draft community well site report and reviewed its development. The surveys are completed by IEPA field geologists. Topographic maps and aerial photographs are used to help owners and operators comprehend the survey system. The majority of the report are technical appendices that provide additional background information on the water system. The survey process was prototyped by Southwestern Illinois Planning Commission and then tested in Winnebago County on both large and small water systems. The most interesting observation is the number of wells located in close proximity to contamination hazards.

Roger Kanerva added that the regional planning commissions can use the report to help characterize the area as well as by the Agency for issuing hazard reviews.

John Baker asked if information and corrections could be shared. Bob said they can be shared; many of the corrections have already been transferred to DENR's system. Cathy Barnard asked how transfer of information is handled. Bob explained the 5-digit well numbering system and how it is keyed to latitude and longitude and quarter, quarter, quarter sections; these variables are used to transfer the information.

Al Panek asked how long it would take to complete the entire survey process. Bob estimated 2 years. Priority is based on wells having VOC detections. There are approximately 80 such wells which have background information complete. Once procedures are finalized, IEPA will attempt to complete 100 per month.

Kevin Greene suggested use of terms "Needs Assessment" and "Hazard Review" in cover letter. Roger said IEPA would review changes. Those terms may have legal implications down the road if regulatory action is ever conducted. For now it is just baseline information and sets the stage for future actions. Roger also said the Agency can expand on follow-up to survey results during the Forum.

Next Meeting

The next Council meeting will be held on December 1 and 2, 1988. Locations to be finalized.

CS:jmm/sp5225H/1-9

E X H I B I T 5

Interagency Coordinating
Committee on Groundwater

November 14, 1988

The session was called to order at 9:00 a.m. at the Illinois Environmental Protection Agency. The following were:

Present:

Roger Kanerva	Illinois Environmental Protection Agency
Carol Sinnott	Illinois Environmental Protection Agency
Robert Clarke	Illinois Environmental Protection Agency
Duane Pulliam	Illinois Department of Mines and Minerals
Bruce Phillips	Illinois Department of Mines and Minerals
David Antonacci	Illinois Department of Public Health
Roger Selburg	Illinois Environmental Protection Agency
Gary Clark	Illinois Department of Transportation-Division of Water Resources
John R. Washburn	Illinois Department of Transportation-Division of Highways
David Baker	Illinois Department of Energy and Natural Resources
Bob Schwarberg	Illinois Department of Agriculture

Not Present:

Illinois Fire Marshal (Jack Moore)
Emergency Services and Disaster Agency (John Plunk)
Illinois Department of Commerce and Community Affairs (Stewart Schrodt)
Illinois Department of Nuclear Safety (Dave Ed)
Governor's Office (Gretchen Bonfert)

The meeting was chaired by Roger Kanerva, IEPA. Dave Baker, ENR, moved for approval for the minutes from the September 12, 1988 meeting. Dave Antonacci, IDPH seconded the motion and they were approved unanimously.

Groundwater Standards Issues/Options

Roger Kanerva announced that the only comments IEPA received on the draft were from CBE. The new draft satisfies their concerns. Comments received were primarily editorial. IEPA plans to finalize unless additional comments are received. The Committee had no further comments on the document.

Groundwater Quantity Subcommittee

Gary Clark reported the Subcommittee met on September 13 and 14, 1988 with some of the major interest groups involved, which included: Illinois Farm Bureau, Illinois Municipal League, Illinois Water Well Drillers and Illinois Irrigation Association. The groups anticipated groundwater quantity legislation would be introduced regardless of the State's efforts and therefore, were pleased the Agencies were getting involved early.

The Subcommittee will be meeting with Iroquois and Menard Counties; GAC on December 2, 1988 and tentatively with Mason County on November 29, 1988. Some members have met with Representative Tim Johnson and constituents whose artisian wells are no longer flowing due to large producers. The drought has really heightened the quantity issue.

The Subcommittee is working on issue papers to finalize recommendations. They're also developing initiative papers to accompany each issue. A list of final recommendations by the Subcommittee will be complete in January.

The Subcommittee is dealing with:

1. Conflicts between large and small well owners.

2. GWMA's - Need to identify conflict areas and determine how to legislatively set-up the areas and decide how they will be managed.

Roger Kanerva asked what the schedule is for legislation from administration. Gary responded that the Governor's Office intends to be pro-active; therefore, the Subcommittee has decided to put together a legislative package. Gary also reviewed Iowa and Indiana's legislation which is being analyzed to assist Illinois.

Gary announced that the next meeting will be held November 22, 1988 and he plans to suggest the Subcommittee meet with interest groups a second time to give them an update and ask for their assistance.

Groundwater Protection Policy Forum

Roger Kanerva reviewed the Forum agenda. Carol Sinnott reviewed the major groups who received Forum brochures. They were mailed much later than hoped.

Bob Schwarberg, IDOA, discussed issues to be covered under "agri-chemical issues." USEPA's pesticide strategy will be available for the Forum; Dave Baker will provide ENR's pesticide proposal as well. IEPA will have pump test procedures and applications available.

Regulation of Monitoring Wells

Dave Antonacci reviewed recent discussions regarding regulation of monitoring wells. The water well construction code will be changed to include a set of standards addressing installation and construction of monitoring wells. The Surveys feel there should be some type of record-keeping, therefore, licensing requirements shall be amended to collect location information which will be forwarded to the Surveys.

Political and interest group concerns lead to this agreement. IDPH needs to work closely with IDMM, IEPA and the Surveys to develop monitoring well installation and construction codes. The agencies will eventually need to address test holes and exploration drilling holes. IDPH is working with IDMM on legislation for the permitting of non-potable wells and hope to introduce something this spring.

Roger Kanerva requested a supply of drafts to member when available for official ICCG coordination. Dave agreed.

Technology Regulations

Roger Kanerva reported that the regulations are in a rough draft form. IEPA plans to present a more polished version to GAC by December 2, 1988. When the draft becomes available, Roger encouraged a serious review by ICCG members. The proposed regulations will not be filed on time. Roger said the Agency is trying to coordinate prohibitions and setbacks with the draft. Certain phase-outs may have serious implications on the regulated community but IEPA found it difficult not to phase-out various activities and be consistent with IGPA.

Report of the Education Subcommittee

Dave Baker, ENR, reviewed the activities of the Subcommittee. Their next meeting is scheduled for November 21, 1988 at the Geological Survey. The member agencies have released 4 new publications:

1. IEPA - Groundwater Quality Protection: Community Water Supply Planning.

2. ENR - Product of a contract with the Environmental Education Association. The packet includes 8 or 9 materials to help teachers address groundwater.

3. ENR - IGPA Question and Answer Booklet

4. ENR - Illinois Groundwater Gazette

ENR is planning to create an IGPA video. A discussion of the video will be held at the next Subcommittee meeting.

Dave thanked IEPA for participating in hosting foreign guests from Germany.

Update: Pesticide Pilot Study

Dave Baker, ENR, reported the pilot study is finally getting off the ground. The agencies are now finalizing procedures to jointly manage the project. The Study will officially begin December 1, 1988. DDA is working closely with the Surveys on testing procedures. Most details for the scope of work have been agreed upon.

Roger said the agencies need to coordinate funding activities since funding has been made a priority. Roger is concerned about others tapping into the Environmental Trust Fund which would endanger funds already committed. It is a limited source of funds, therefore, agencies need to coordinate activities that have already been agreed upon.

Other Business

Roger encouraged Forum speakers to have documents or outlines available for December 1, 1988.

Roger was also concerned about keeping up ICCG participation levels. He suggested the minutes reflect agencies not participating. This can be used to spot tendencies and report to the Governor's Office.

Roger also asked members to decide if the progress report should be maintained or dispensed. The issue can be discussed at January meeting. If members find it useful, it will be continued.

Next Meeting

The next ICCG meeting will be held on January 10, 1989 at 1340 N. 9th Street, Springfield.

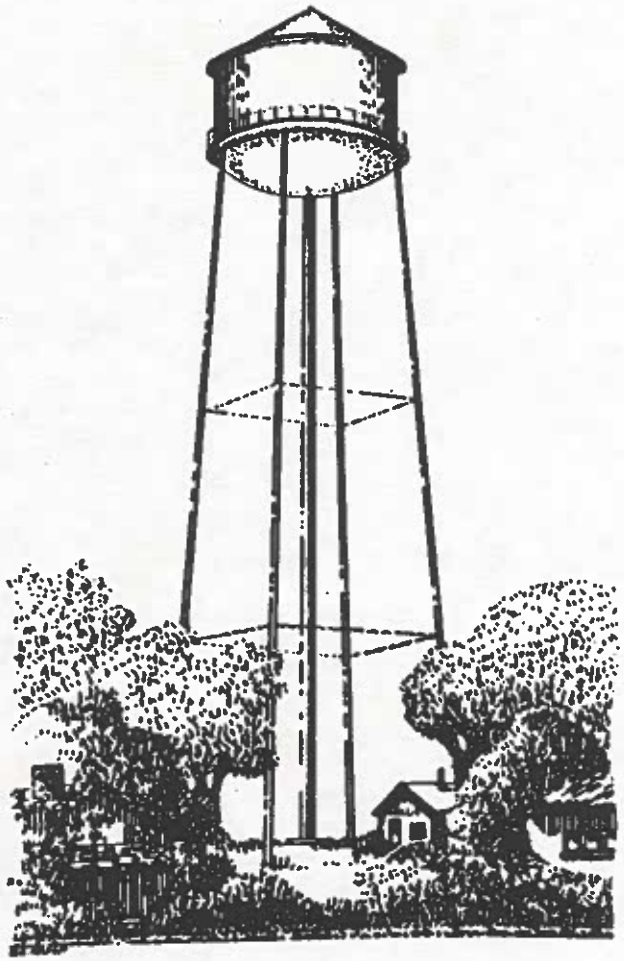
CS:jmm/5273H/59-62

E X H I B I T 6

Illinois State Water Survey
2204 Griffith Drive
Champaign, IL 61820

GROUNDWATER PROTECTION POLICY FORUM, DECEMBER 1 1988

IGPA GROUNDWATER ADVISORY COUNCIL



GROUNDWATER PROTECTION POLICY FORUM DECEMBER 1, 1988 HILTON INN, LISLE/NAPERVILLE

GROUNDWATER PROTECTION POLICY FORUM

The Forum is designed to provide information regarding the major provisions of the Illinois Groundwater Protection Act. It is hoped the Forum will foster dialogue on various technical and policy issues relating to groundwater protection and the groundwater quality standards-setting process. The Forum offers policy makers the opportunity to hear first hand what is coming down the road and to have an open exchange with key officials who are working on the implementation of important provisions of the Act.

The Groundwater Policy Forum is sponsored by the Governor-appointed Groundwater Advisory Council. Members of the Council are as follows:

Jerry Paulson, McHenry County Defenders
Kevin Greene, Citizens for a Better Environment
Catherine Barnard, NALCO Chemical Co.
John Baker, Waste Management, Inc.
Dr. Harold Reetz, Potash & Phosphate Institute
Melford Dahl, Public Works Director, City of Elgin
Jacqueline Bruemmer, S.W. Planning Commission
Allen Panek,Naperville Dept. of Water & Wastewater Utilities
John Pitz, Water Well Drillers Industry

The Council assists the State in its efforts to protect groundwater by reviewing, evaluating and making recommendations regarding:

.State laws and regulations for groundwater protection,
.Implementation of the Illinois Groundwater Protection Act,
.Groundwater research, data collection and analyses.

WHO SHOULD ATTEND:

.county and municipal officials
.water well contractors
.environmental organizations
.industrial and commercial representatives
.agribusiness representatives
.land use planning and zoning officials
.regional planners
.groundwater consultants
.state and federal agency personnel
.other groundwater professionals

AGENDA

8:30 *REGISTRATION/COFFEE*

8:45 *WELCOME/OPENING REMARKS*
Melford Dahl, Chairman, GAC

GROUNDWATER QUALITY STANDARDS

9:00 *OVERVIEW OF ISSUES AND OPTIONS*
Moderator: Catherine Barnard, GAC
Panel: Roger Kanerva, IEPA
Joanna Hoelscher, CBE
Max McCombs, Monsanto Chemical
Ted Bergeson, City of Batavia
Open Discussion

10:30 *BREAK*

10:45 *IMPLEMENTATIONS OF GROUND WATER QUALITY STANDARDS IN OTHER STATES*
Moderator: Kevin Greene, GAC
Panel: Richard Kelley, Iowa Dept. of Natural Resources
Kevin Kessler, Wisconsin Dept. of Natural Resources
Speaker: To Be Announced
Open Discussion

11:45 *LUNCH*

GROUNDWATER PROTECTION

1:00 *AGRICHEMICAL ISSUES*
Moderator: Dr. Harold Reetz, GAC
Status Report of the ICCG Pesticide Subcommittee
Robert Schwarberg, IDOA
Pesticides in Groundwater Evaluation
Dennis McKenna, ENR
Open Discussion

1:45 *REPORT ON WELLHEAD PROTECTION PROGRAM*
Moderator: John Pitz, GAC
Well Site Surveys: Robert Clark, IEPA
1,000' Setback Zones: Experience of Pleasant Valley
Sandy Moldovan, P.E., Clark Engineering MW, Inc.
Groundwater Protection Needs Assessments
Allen Panek, GAC, City of Naperville
Open Discussion

2:45 *RECHARGE AREA PROTECTION*
Moderator: Jacqueline Bruemmer, GAC
Planning for Recharge Area Protection
Gary Schaefer, NIPC
Recharge Area Mapping Progress Report
Richard Berg, ENR
Open Discussion

3:30 *BREAK*

3:45 *RESPONSE PANEL*
Moderator: Melford Dahl, GAC
Panel: John Baker, GAC
Jerry Paulson, GAC
Karen Witter, Director, ENR

4:30 *ADJOURN*

GENERAL INFORMATION

LOCATION:
The Forum will be held at the Hilton Inn, Lisle/Naperville, IL (2 miles West on Warrenville Road at I-88).

FORUM FEE:
The fee of $25.00 includes materials, coffee and lunch.

REGISTRATION AND PROGRAM INFORMATION:
Registration is limited to 125 on a "first come-first served" basis so preregistration is strongly encouraged. To register, complete and return the attached registration form with your payment, purchase order or voucher or call Steve Hilberg at 217/333-8495 and we will bill your organization. Your lunch cannot be guaranteed unless your registration is received by November 23, 1988. Walk-in registrations will also be accommodated on a "first come-first served" basis. For information on the Forum program, contact: Carol Sinnott, telephone 217/785-4787.

CANCELLATION POLICY:
Your registration fee will be refunded in full if we receive your cancellation no later than Friday, November 25, 1988. You may send someone in your place if you are unable to attend.

ACCOMODATIONS:
A block of rooms has been reserved at the Hilton Inn (312)369-0900 until November 16, 1988. Special rates apply for government employees with ID cards.
(State: $50 single, $62 double)
(Federal: $60 single, $72 double)

REGISTRATION FORM

GROUNDWATER PROTECTION POLICY FORUM
DECEMBER 1, 1988

To register, complete and return this form with y pa to:
Steve Hilberg, Illinois State Water Survey
2204 Griffith Drive
Champaign, Illinois 61820
Attn: Groundwater Protection Forum

or call, 217/333-8495 and we will be happy to re: er y and bill your organization.

Please register me for the Groundwater Protection P For

☐ December 1, 1988 Lisle/Naperville

____ Registrations at $25.00 each

Total amount enclosed $ _____

Make checks payable to:

University of Illinois c/o ISWS

Name _____

Name _____

Organization _____

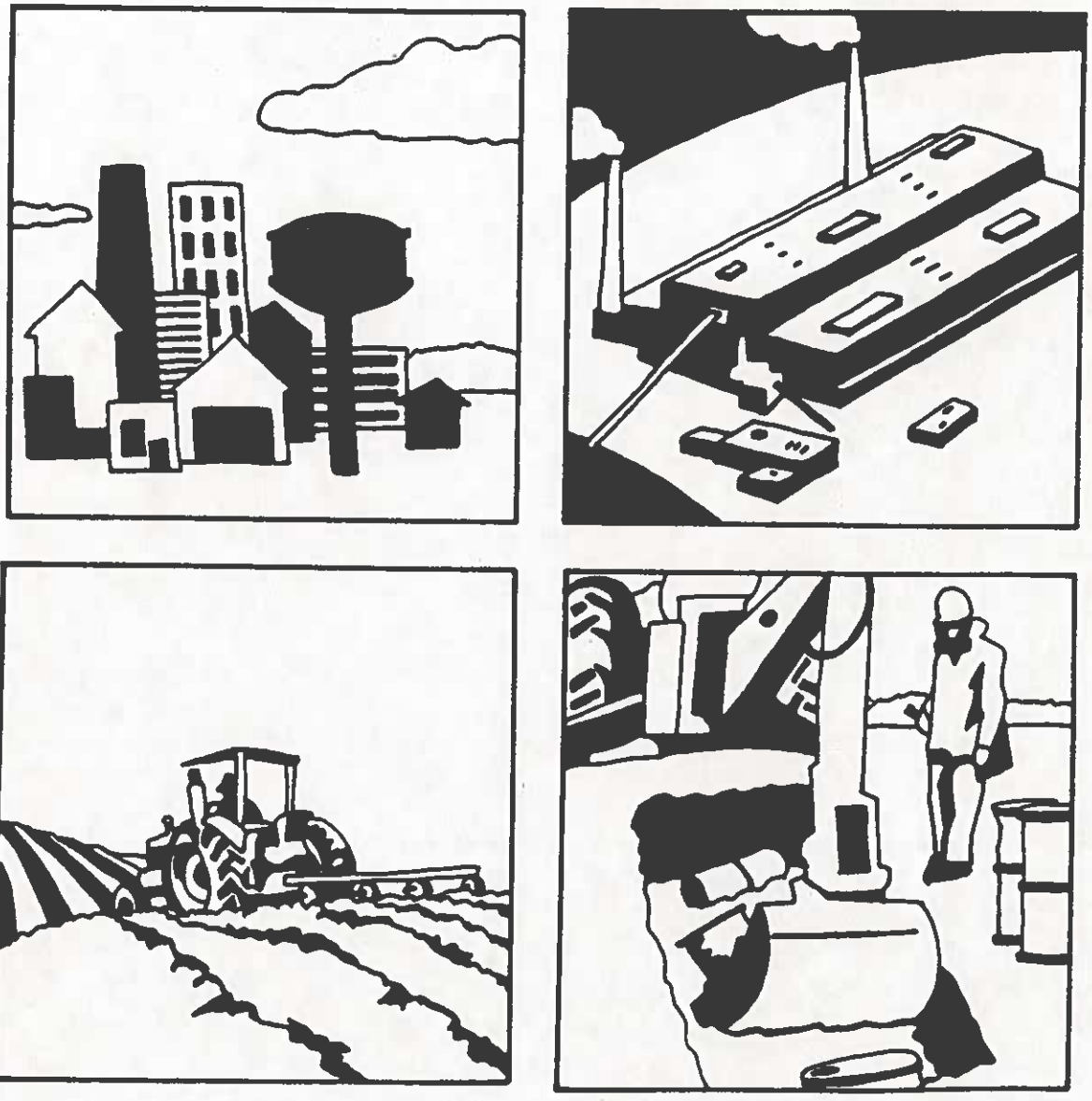
Address _____

City _____ State _____ Zi

Telephone: AC ____/ _____

EXHIBIT 7

An Issues / Options Paper for Comprehensive Water Quality Standards for Groundwater



Prepared by
Interagency Coordinating
Committee on Groundwater

An

ISSUES/OPTIONS PAPER

for

Comprehensive Water Quality Standards for Groundwater

Prepared by

Interagency Coordinating
Committee on Groundwater

November, 1988

The Illinois Groundwater Protection Act (IGPA) was passed by the General Assembly and was signed by the Governor on September 24, 1987. The IGPA establishes a comprehensive program for the protection of groundwaters. Some parts of the program, such as minimum setbacks for wellhead protection, have already been implemented based directly upon detailed authority in the law. Other parts of the program, however, require more development work and rulemaking by the Pollution Control Board in order to be implemented. The comprehensive water quality standards for groundwater are an example of the latter type of provision.

The Interagency Coordinating Committee on Groundwater (ICCG) was established by the IGPA as a means of fostering greater cooperation among state agencies involved with groundwaters. The ICCG recognizes the far-reaching implications and importance of these new standards. Accordingly, the ICCG has developed this issue/options paper in anticipation of the need for extensive dialogue about this matter. The overall intent of the Committee is to facilitate not limit such dialogue. However, some structure was thought to be useful to ensure that key conceptual matters receive proper attention as the public participation process unfolds.

The Groundwater Advisory Council (GAC) has also participated in the development of this paper. The Council is composed of nine public members who are appointed by the Governor. Under the IGPA, the Council plays an advisory role in various implementation activities, including the development of the groundwater standards. Members of the GAC have reviewed and commented upon this paper. Many of their suggestions have been incorporated into the final document.

This paper has been designed to [illegible] each issue is all about. A purposeful effort has been made not to overwhelm the reader with an exhaustive array of options or a barrage of technical details. Within these constraints, we sincerely hope that the reader will find this paper useful and stimulating.

BACKGROUND

Establishment of comprehensive groundwater quality standards is a critical component of the groundwater protection program. Such standards are ultimately necessary to give us a practical means of defining expectations for groundwater quality and determining the adequacy of the protection program. In particular, groundwater standards are useful in four ways:

1. General water quality goals (e.g., drinking water) must be translated into chemical and biological parameters which can be monitored and analyzed. Upon scientific and regulatory acceptance of these parameters as "standards," we then have a way of determining the relative "goodness" or "badness" of actual groundwater around the State. Over time, we can also keep track of the progress being made to achieve or maintain desirable groundwater quality. The regulatory process of setting these standards can be greatly impacted by the complexity of the proposal. For example, does one address tens, hundreds or even thousands of chemicals which could potentially contaminate groundwaters? Should one use composite measures (total toxic organics, total dissolved solids, etc.) in lieu of or in addition to numbers for individual chemical substances?

2. Certain facilities and activities need to be designed and operated so as to minimize the potential for contaminating groundwaters. Groundwater standards can be used to determine the performance expectations and characteristics of control technologies which are utilized. In setting such standards, one must work out many procedural details. For example, at what point or location do the standards become applicable to a facility or portions thereof? How does one sort out changes in background water quality as opposed to site related impacts?

3. Use of groundwaters at specific geographic locations, such as withdrawal of water from a well for municipal usage, should be compatible with the characteristics or suitability of such waters. Thus, determinations regarding the particular characteristics of quality to be ascribed to groundwaters has direct implications for the acceptable uses which may be pursued at some point.

4. Where significant contamination of groundwaters has occurred, water quality standards can be useful in setting site cleanup objectives. Such restoration of groundwaters often involves complex evaluations of applicable treatment technology, institutional mechanisms and economic implications of alternative cleanup scenarios. Central to these considerations are cost-effective decisions regarding the suitability of resultant groundwaters. As part of this process, standards serve as a necessary reference point.

The standards setting process could consider the health effects of contaminants along with the variability of water quality, natural background levels and other factors. Standards for ambient groundwater quality usually establish the upper limit of concentrations (ppm, ppb, etc.) of substances which may be present. Water quality standards could involve numerical or narrative limits. In general, a preference for numerical standards is often expressed because of a concern for targeting certain chemical substances, for consistency with how water quality monitoring is usually done, and for reaching an up-front consensus about regulatory goals. However, narrative standards could serve a useful role too. For example, a set of general criteria (e.g., toxicity) and a technical evaluation procedure could be specified such that one could derive suitable water quality limits for mixtures of substances.

Uniform groundwater quality standards could apply to all groundwaters or different standards could be used for specific waters, areas, aquifers or uses. Domestic water supply could receive prominent attention since its

use is very important in Illinois. In fact, finished drinking water standards are sometimes applied to groundwaters, especially since most groundwater does not receive treatment prior to use.

The fact that groundwater quality standards will be enforceable is important to keep in mind. Serious regulatory consequences (corrective orders, penalties, etc.) may stem from actions which result in a violation of these standards once they are established. This characteristic of enforceability is one of the principal reasons why the groundwater quality standards will be the subject of an extensive rulemaking process. Thus, setting these standards will likely involve careful consideration of the adequacy of protection afforded to groundwaters as well as what is technically feasible and economically reasonable.

THE POLICY FRAMEWORK

Section 8 of the Illinois Groundwater Protection Act sets forth a requirement to adopt "...comprehensive water quality standards which are specifically for the protection of groundwater." The Illinois EPA is mandated to prepare and propose these regulations by July 1, 1989, and the Pollution Control Board is mandated to promulgate the regulations within two years thereafter. The IGPA also provides specific guidance regarding the nature and content of these regulations via the following:

- A detailed policy statement regarding groundwater protection;
- A directive for the Agency to address certain contaminants; and
- Various factors and considerations for the Board.

Section 2(b) of the IGPA states the general policy of the State of Illinois with respect to groundwaters:

> "(b) Therefore, it is the policy of the State of Illinois to restore, protect, and enhance the groundwaters of the State, as a natural and public resource. The State recognizes the essential and pervasive role of groundwater in the social and economic well-being of the people of Illinois, and its vital importance to the general health, safety, and welfare. It is further recognized as consistent with this policy that the groundwater resources of the State be utilized for beneficial and legitimate purposes; that waste and degradation of the resources be prevented; and that the underground water resource be managed to allow for maximum benefit of the people of the State of Illinois."

Specific portions of this policy are further described as follows:

1. "To restore, protect, and enhance" - These words serve to frame the comprehensive nature of this policy, including protection of existing desirable groundwater quality and improving and upgrading groundwaters that are contaminated.

2. "As a natural and public resource" - These words serve to reinforce the inherent value of groundwaters and their availability for contribution to the common good.

3. "Role of groundwater in the social and economic well-being" - These words remind us of the fundamental need for useable water both to sustain life and to foster many kinds of economic activities. About 5.5 million people in Illinois rely upon groundwater for their drinking water. Industries which use groudwater from their own source withdraw over 24% of the total groundwater used in the State.

4. "Be utilized for beneficial and legitimate purposes - These words establish a direct tie between groundwaters as a natural resource and their utility for usage. The concept of beneficial use has long been recognized as a management tool and provides an operative, practical focus to the policy.

5. "That waste and degradation of the resources be prevented" - These words establish prevention as a central theme of the IGPA. As has been well documented, groundwaters are not easily remediated once they have been significantly contaminated.

6. "That the underground water resource be managed to allow for maximum benefit" - These words reinforce the expectation that groundwaters will be the subject of organized public and private efforts to ensure the greatest good for the most people over the longest period of time.

Beyond the overall policy framework, Section 8 of the IGPA provides seven specific considerations for the Illinois EPA and/or the Pollution Control Board to address for groundwater standards. For the purposes of this paper, these seven considerations form the core issues for discussion. Within each issue, illustrative options are identified and described to facilitate the dialogue. However, the reader is also cautioned not to limit their thinking to the bounds described herein, and is encouraged to creatively build upon this analysis. Appendix A provides a condensed summary of these issues and options for ease of reference and review.

The reader should also be sensitive to the nature of the rulemaking process by which these standards will be adopted. Any proposal which is introduced will likely be subjected to intensive legal and technical scrutiny, including formal presentation of testimony and extensive cross-examination. Rigorous burdens of proof must often be met and professional judgements defended. Such activities can be very resource intensive and time consuming. In reality, such concerns can become a factor in shaping the initial proposals which are submitted for consideration. In particular, the reader should not assume that the submitter of a proposal for rulemaking will receive any special "benefit of the doubt."

This paper presents a wide range of regulatory options. Some of these options, because of the interests and constituencies affected, could be more controversial than others and, as a result, could be more prone to extended debate and vigorous challenge during the course of the regulatory

proceedings. Consequently, in considering any one option versus another, the proponent should also keep in mind the commitment of resources and time that could be necessary in order to successfully transform that particular option into a rule.

ISSUE ONE - Addressing contaminants which have been found in Illinois groundwaters and which are known to cause or suspected of causing cancer, birth defects or any other adverse effect on human health.

This issue has two parts. The first part involves a determination as to exactly when a contaminant has been "found" in the groundwaters of the State. In considering this part, one should keep in mind the great variety of governmental and private participants involved in groundwater monitoring in Illinois. The complexities associated with data analysis and usage are also important, especially given the evolving technology for groundwater monitoring. Illustrative options include the following:

- Any contaminant that has ever been detected by sampling and analysis of groundwaters could be addressed. This approach would give the most comprehensive coverage for the initial step of the standards setting process. Using such an approach, however, would necessitate extensive coordination of a great variety of data sources and addressing of inconsistencies in quality control procedures and sampling and analysis protocols. Given such potential problems, this approach might be viewed as being too burdensome.
- Priority emphasis could be placed upon contaminants for which action was taken in conjunction with the public water supply and land pollution

control programs which are operated by the IEPA. This approach would have the advantage of relating standards to actionable problems, ensuring a more consistent sampling and analytical protocol, and providing a more manageable universe of data. Using this approach, however, could under value data from other sources that clearly identify contaminants of concern, and, thus might be viewed as offering insufficient protection.

- Identified contaminants from all available data bases could be selectively considered using an agreed upon screening protocol. This approach would attempt to target the "best" information from all readily available sources recognizing that certain inconsistencies would need to be accommodated. The screening process would emphasize high quality data. This approach could result in a fairly wide range of information without taxing available resources. Using this approach, however, would probably necessitate an extensive effort to justify the design of the screening process.

The second part of this issue involves a determination as to which of the identified contaminants are known or suspected of having adverse effects on human health. The IGPA provides some direction regarding the source of such information by specifying the use of "nationally accepted guidelines." In the case of carcinogens, the listings and methodology used by the National Toxicology Program, the International Agency for Research on Cancer and OHEA's Health Assessment Group are commonly accepted sources. In the case of birth defects and other adverse health effects, the potential pool of sources is not as well defined or structured. USEPA has been active in

this area with the development of the IRIS data base and the operation of the Reproductive Affects Assessment Group in OHEA. In addition, the ATSDR has helped with its toxicological profiles. Illustrative options include the following:

- Priority emphasis could be placed on contaminants which are known to or suspected of causing cancer or birth defects. This approach would focus the standards proposal on the most severe health concerns. In one sense, this could be viewed as strengthening the standards proposal. On the other hand, such an approach might be viewed by some as offering insufficient protection given the broad mandate of the IGPA.
- Priority emphasis could be placed on the contaminants which are known to or suspected of causing cancer or birth defects and other targeted health concerns. This approach would broaden the scope of the standards proposal. The targeting process could be designed as a team approach under the purview of the ICCG. Using this approach, however, would probably necessitate extensive effort to justify the design of the targeting process.
- All chemical substances which are suspected of having any adverse effect on human health could be addressed. Such an approach would provide the broadest protective coverage and literally would fulfill the total intent of the IGPA. This approach would, however, forego any attempt to sort out the important from the less important health concerns. Some might view this lack of prioritization as being a weakness since not all health concerns are equally worthy of attention. Furthermore, the supporting information for some health effects may not be adequate for quantitative standards setting.

Issue #4 - Recognizing that groundwaters differ in many important respects from surface waters.

The IGPA provides guidance regarding this matter by listing examples where groundwaters differ from surface waters. Included in this listing are "... water quality, rate of movement, direction of flow, accessibility, susceptibility to pollution, and use." The following discussion of these factors has been adapted from the 1986 report by the Pollution Control Board regarding development of a groundwater protection program for Illinois.

1. Variability of water quality - Groundwaters in Illinois have a wider range of variability in natural chemical quality than is normally found in surface waters. For example, some groundwaters are of better quality than minimum standards for drinking water and may be so used without treatment. Such waters of exceptional quality represent a very valuable resource which many believe should be maintained. Other groundwaters have higher amounts of dissolved substances than does seawater and are not practically useable. Still other groundwaters have radioactive constitutents which emanate from geologic materials that generally do not impact surface waters.

2. Rate of movement - Groundwaters usually have substantially slower rates of movement than surface waters. Typically, surface water flow rate is measured in feet per second whereas rates of feet per day or year are often encountered for groundwaters. The overall effect is to greatly slow down the responsiveness of groundwaters to change. Thus, while it may take longer to initially contaminate groundwaters, it also takes much longer to remove contamination once it occurs. This slow response time for groundwaters is clearly a factor to consider in establishing the standards. In practical terms, an attempted upgrade of use for groundwaters (e.g., general use to drinking waters) to accommodate new needs may not be possible once some degradation has taken place. In contrast, surface waters usually respond to changes quickly enough that protecting for current uses is not as likely to preclude the attainability of other uses in the future.

3. Direction of flow - Groundwater flow is best described as three-dimensional; that is, groundwaters may flow various directions in a horizontal sense and may also move up or down vertically all in response to often complex local hydrogeologic conditions. Dispersion or mixing of contaminants in groundwaters is constrained by geological structure and by often unequal rates of movement in three dimensions. Consequently, groundwater contaminants often

tial protection policy that recognizes that different ground-waters require different devels of protection. A three-tiered classification system was established as the vehicle for implementing this policy. Through the process of classification, ground-water resources are separated into hierarchial categories on the basis of their value to society, use, and vulnerability to contamination. Groundwater classes will be a factor in deciding the level of protection or remediation the resource will be provided. State agencies responsible for managing ground water will not be required by EPA to adopt the classification system for general use. In fact, many states have already developed ground-water protection approaches tailored to their particular land use and hydrogeologic conditions..."

The IGPA calls for classification using "an appropriate basis." Inherent in this guidance is the recognition that there are differences among groundwaters in Illinois. Key terms, such as "potable resource groundwater" and "resource groundwater" are used within the IGPA to distinguish between groundwaters with differing characteristics (see definitions section of the IGPA). Studies done around the State have also documented a variety of conditions including the existence of very pristine waters, heavily contaminated waters resulting from human activities, and waters whose quality is adversely affected by natural geologic conditions.

In evaluating the basis which should be used to differentiate among groundwaters, the IGPA provides additional guidance by citing two examples of criteria for classification. The first one, "utility as a resource," represents a management concept that is articulated in the Act's policy statement. This approach focuses upon the overall utility of the groundwater resource by determination of existing and potential water usage. Integration of many hydrogeologic, engineering and economic factors into the classification design may also be emphasized using this approach. The second one, "susceptibility to contamination", represents a management concept

that is included in the policy statement as well. This approach involves detailed characterizing and mapping of geologic strata and/or aquifers. With this approach, one may emphasize the protection of groundwater using the natural capabilities and limitations of hydrogeologic systems. Such an approach may sometimes be focused on priority areas because of the demanding nature of the required analytical work. Clearly then, both utility and susceptibility merit consideration in the effort to classify groundwaters in Illinois.

Within this framework provided by the IGPA, one could conceive of a multitude of classification schemes. Visualize, if you will, taking a "snapshot" of Illinois' groundwaters as they are today (or were at some point in the past), and using that picture as a starting point for describing the status of our groundwaters and for charting a course towards what we want them to be in the future. Illustrative options include the following:

- A unitary classification system could be provided by specifying all groundwaters as being actually or potentially available for drinking water (highest beneficial use). This approach has considerable appeal because it could provide the greatest protection for future needs. Having no differentiation among types of groundwaters, however, could also generate false expectations regarding groundwaters that are already known to be of poor quality due to natural causes. Thus, excessive protection might be seen as a weakness of this approach, or perhaps as a strength depending on one's point of view.
- A two-tier classification system could be provided by limiting a drinking water designation to just existing points of domestic use and grouping all other groundwaters together. This approach would not impose any

approach preference regarding protection of future groundwater uses. A sort of "first in time, first in right" rule would then be applicable regarding the siting and/or retrofitting of potential causes of contamination and new or expanded domestic usage for drinking water. Such an approach, however, would have great potential for essentially precluding future domestic uses, since groundwaters are often very difficult to restore once contamination occurs. In addition, not differentiating the naturally poor quality groundwaters would be misleading with respect to whatever future uses could occur. Thus, insufficient protection might be seen as a weakness of this approach.

- A multi-tier classification system could be provided to distinguish among major groupings of groundwaters. One could start by identifying those groundwaters that have very limited or no beneficial use because of their impaired quality. Within this grouping of "other groundwaters," one could further distinguish between waters that are of poor quality due to natural geologic conditions and those waters that are contaminated due to human activities. This distinction could prove useful in determining the expectations for these respective waters; that is, one could strive for eventual restoration of those waters where human activities caused degradation of quality. The next step would involve identifying those groundwaters that presently have or could have in the future a beneficial use due to their suitable quality. Within this grouping of "resource groundwaters," one could further distinguish between waters that were of sufficient quality to be potable (drinkable) and those waters whose quality was more suitable for general (non-domestic) usage. In addition to the categories described above,

there could also be special provisions for certain "recharge areas." Recharge areas would be associated with potable resource groundwaters. Such areas could be described in terms of their susceptibility to contamination and their relative importance (sole source of water supply as opposed to multiple sources). This approach would have the advantage of providing for far more differentiation among Illinois' groundwaters. However, some concern might develop over the availability of sufficient information to make so many technical judgements and the perception that one would be "writing off" certain groundwaters.

- The USEPA's classification system could be adopted for use in Illinois. This system consists of three general classes of groundwater as follows:

> "Class I - Special Ground Waters"; These are resources of unusually high value that are highly vulnerable to contamination and are either irreplaceable sources of drinking water or ecologically vital.
> "Class II - Current and Potential Sources of Drinking Water and Water Having Other Beneficial Uses"; All non-Class I waters which are currently used or potentially available for drinking water and other beneficial uses are given this designation irrespective of how vulnerable they are to contamination.
> "Class III - Ground Water Not a Potential Source of Drinking Water and of Limited Beneficial Use"; This includes waters that are highly saline or otherwise so contaminated that use for drinking or other beneficial purposes is not feasible. The causative agent may be either naturally occurring conditions or broad-scale human activity that cannot be cleaned up using reasonably available treatment technology.

This system is generally based upon drinking water as the highest beneficial use of the resource and is designed to be used on a site-by-site basis. Due to legal and policy constraints, the USEPA's system is focused more towards case and site-specific decisions involving issuance of permits, cleanup projects, and enforcement activities. For example, a "classification review area" (typically a two-mile radius from the site boundaries) is used in the absence of regional or aquifer-specific

hydrogeologic mapping. USEPA does assert, however, that this system "...attempts to be generally consistent..." with broader, anticipatory classification systems. This option would have the advantage of building in more consistency with the operations of the USEPA. On the other hand, considerable difficulties could result from scale-up of this site-oriented system to a statewide classification system. These scale-up measures would be necessary to counter concern that USEPA's system, if left unchanged, might result in insufficient protection of groundwaters in Illinois.

ISSUE FOUR - Providing preference for numerical as opposed to narrative standards.

The IGPA prescribes the application of such a preference "...where specific contaminants have been commonly detected in groundwaters or where federal drinking water levels or advisories are available." It should be noted that these federal numbers are designed to be minimum standards for "finished" drinking waters prior to their distribution to the water users. Thus, various kinds of physical and chemical treatment can be utilized to ensure that raw waters meet the safe drinking levels. Some raw groundwaters, in their natural state, are of a lesser quality than the drinking water standards, and it may be necessary to design a system that does not render such waters unusable at the very outset of the regulatory process. Please see Appendix B for more discussion of this matter.

Illustrative options include the following:

- Numerical standards could be provided for as many substances as possible. This approach has some appeal because it would seem to produce the most clear-cut and rigorous protection system. However, there are also practical limits to the utility of numerical standards: that is; (1) the number of chemical substances in commercial usage far exceeds the number of substances for which sufficient data exists to sustain a rulemaking; and (2) it may be ineffective handling complex mixtures of substances via specific numerical standards. Furthermore, the IGPA puts special emphasis on detection of contaminants and the availability of federal criteria which implies that a more targeted approach will be used for numerical standards.
- Use of numerical standards could be limited to only those instances where formal federal drinking water numbers are available. This option has some appeal since the burden for justifying specific numbers would probably be reduced. One could argue, however, that the IGPA did not envision such a restrictive approach, especially since special emphasis was placed upon detection of contaminants irrespective of whether or not federal drinking water criteria were available. Thus, some might contend that this approach would not provide sufficient protection.
- A modest number of numerical standards could be provided beyond the federally available ones. Such an approach would attempt to achieve a balance between the general preference for numerical standards and the expected need to address in a generic fashion, via narrative standards, some situations where contamination has been found. The perception of relative strengths and weaknesses of this approach would

probably depend upon one's view of whether or not an acceptable balance had been achieved.

- In concert with the adoption of some numerical standards, one could also establish a regulatory presumption that zero would be applicable in the absence of specific numerical limits. This approach could be advantageous in that potential polluters might be encouraged to work aggressively and cooperatively to establish numerical standards so as to avoid the potential for excessive protection. On the other hand, this approach could be seen as preempting the use of narrative standards which receive specific mention in the IGPA. Some might also perceive a weakness with this approach over what is meant by "zero." Does one mean below a practical detection limit? How is such a limit defined and enforced?

ISSUE FIVE -Applying nondegradation provisions for appropriate groundwaters.

The policy statement in the IGPA makes a clear reference to this matter. The fact that groundwaters are usually so difficult and expensive to remediate once significant contamination occurs also supports the need for a preventive orientation. The IGPA further reinforces this concern by specifying that such provisions include "...notification limitations to trigger preventive response activities." The intent here is obviously to head in the direction of anticipating problems so as to prevent or minimize adverse impacts. The IGPA does specify that "appropriate" groundwaters are to be subject to application of nondegradation provisions. The question here, of course,

becomes how wide or narrow does one design this coverage. Illustrative options include the following:

- Any reduction in quality of groundwaters (no adverse change on a numerical basis) could be prohibited. Such an approach has some appeal because it presumes that the best way to prevent excessive contamination of groundwaters is not to take any risks at all. However, certain practical implications of such an approach are worth noting. One can envision, for example, that any form of underground injection of wastes could be unacceptable under this approach. Land application of certain pesticides and fertilizers, and treated wastewater effluent and sludges might also be precluded or greatly curtailed. The use of septic tanks for home sites could even be questioned. Natural processes could also result in reduced groundwater quality which would not be accounted for using this approach. Thus, this approach might be seen by some as excessive protection of our groundwaters.
- Use of this provision could be targeted to only the high quality groundwaters (e.g., drinking water levels or better). This approach has the advantage of directly linking the potentially most rigorous protective provision with the groundwaters of greatest value. It may also strengthen the regulatory rationale. However, one could also question the wisdom of leaving all other groundwaters without any added protection. Given the strong preventive emphasis of the IGPA, some might consider this as not providing sufficient protection.
- A tiered provision for nondegradation could be provided. For all groundwaters, one could first prohibit any degradation which would result in the downgrading of a designated use. Secondly, for drinkable groundwaters one could establish the background water quality as the

was statistically significant (RCRA approach), could be just cause for triggering a regulatory response. Response actions could be selected from an approved menu which would include appropriate mitigative measures by regulated sites and/or facilities as well. Such actions would be enforceable unless a timely determination was made that significant adverse economic or social impacts would result. Such undue adversity determinations could be the responsibility of the Pollution Control Board based upon a petition filed by a general purpose unit of local government. However, such determinations would not be applicable in instances where a conflict would occur with federal requirements (e.g., RCRA). Such an approach would have the advantage of providing both a baseline of protection for all classes of groundwaters and special additional protection for certain priority waters. A weakness with this approach might develop depending upon the nature of the menu of response actions which was adopted.

- An approach similar to the groundwater law in Wisconsin could be adopted. Therein, a "preventive action limit" (PAL) is used to trigger various mitigative response actions. As a matter of statutory policy, the PAL is set at 50%, 20% or 10% of the enforcement standard depending upon the adverse effect being addressed. By regulation, the Wisconsin DNR has also established procedures for determining compliance using detection levels in lieu of PALs if application of the percent factor would generate a limit that was below detection. The PAL approach has the advantage of sanctioning the use of a margin of safety as part of the statutory design of the protection program. Thus, regulatory responses are triggered before contamination exceeds the actual use-based

factors (50%, 20% and 10%) were set by the legislature as a policy decision. Such a context is notably different from a formal rulemaking process such as is applicable here in Illinois. Certain features of this approach, such as the extent and form of such safety factors, could be described as strengths or weaknesses depending upon one's point of view.

ISSUE SIX - Considering relevant experiences from other states.

As has been documented by the USEPA and others, many states have undertaken groundwater protection programs. The Illinois EPA has already studied some aspects of these programs. In fact, some provisions of these programs, such as the use of setback zones, have already been incorporated into the design of the IGPA. With respect to groundwater quality standards, however, more rigorous technical and legal analysis is required to truly understand the workings and subtle implications of other states' requirements. In the Fall of 1986, the DENR conducted a survey of groundwater quality standards in other states and provided a report of its findings. Another relevant report (February, 1988) is available from the U.S. General Accounting Office. This report involved state activities relating to groundwater protection. These documents provide some indication of the approaches being taken, but more follow-up work is needed. Illustrative options include the following:

- All fifty states could be surveyed and studied in detail to determine the nature of each regulatory system for groundwater protection. This approach would have the advantage of providing the most complete data

... of use in the standards setting process. Given our current general knowledge of other states, however, there is reason to believe that this approach would not be necessary to gain sufficient benefit from experiences in other states.

- One or two states could be selected to evaluate in detail from each of the ten regions operated by the USEPA. This approach would ensure wide geographic coverage and probably a good mixture of programmatic designs as well. However, considerable redundancy could be encountered as well as some relevancy problems (drastically different geological conditions as compared to Illinois).
- Screening criteria could be developed to rank the states according to the general utility of their programs for our standards setting effort. From this ranking, a cut-point could be set so as to evaluate only those programs which would be most likely to yield useful information. Of course, this approach would necessitate some limited review of all the states, but would have the advantage of focusing the detailed study on just a priority subset of the whole.

ISSUE SEVEN - Considering existing methods of detecting and quantifying contaminants.

The inclusion of this matter in the IGPA serves to reinforce the importance of real world technical constraints. This consideration is also consistent with the general factors which are included in Title VII of the Environmental Protection Act pertaining to rulemaking by the Pollution Control Board. In fact, environmental regulations in Illinois have a long history of proper concern for technical feasibility.

upon the testing matrix (e.g., water versus soil), the testing method, the type of equipment and the skills of the operator. What can be accomplished in a research setting with experimental equipment and/or techniques usually exceeds what can be reasonably expected in a routine regulatory or business setting. The latter situation, of course, represents the real world constraints faced by the Illinois EPA and the regulated community.

Illustrative options include the following:

- The program could be designed independently of the detection factor. In the broadest sense, this approach could be viewed as a technology-forcing strategy. Whatever could be justified on a theoretical basis would set the regulatory pace irrespective of whether or not related analytical capability was available. In this case, one would have to count on technology catching up in a timely manner. Such an approach could, however, subject the program to considerable uncertainty. Numerical protection levels that would be below detection limits could be judged to be unenforceable in a practical sense.
- Detectability could be directly provided for in the program design. This approach has the advantage of taking this issue head-on as a programmatic constraint as opposed to dealing with it indirectly. On the other hand, some interests might view such an approach as too near-sighted; that is, not building enough stretch into the program initially. After all, what is not practically measurable today may be so a year from now and so on.
- A hybrid approach could be provided. This would utilize detectability as a prerequisite for real-time enforceable action and leave open the possibility of recognizing unmeasurable levels for protection of human health or the environment in some other meaningful way.

REFERENCES

1. Illinois Groundwater Protection Act. P.A. 85-863, 1987.

2. Report of the Board. In the Matter of: A Plan for Protecting Illinois Groundwater. August 28, 1986.

3. Guidelines for Ground-Water Classification under the EPA Ground-Water Protection Strategy (Final Draft). U.S. Environmental Protection Agency, Washington, D.C. November, 1986.

4. Groundwater Quality Standards in Other States: A Survey Report. Illinois Department of Energy and Natural Resources, Springfield, Illinois. January, 1988.

5. Groundwater Quality: State Activities to Guard Against Contaminants. U.S. General Accounting Office, Washington, D.C. February, 1988.

APPENDIX A
SUMMARY OF ISSUES/OPTIONS

For ease of reference and review, the core issues and illustrative options are summarized in this appendix. For future consideration, the reader may also want to fill out the opinion portions of this summary, describe any alternative options which come to mind, and jot down any related notes which are pertinent to an issue.

Issues/Options

ISSUE ONE -- Addressing contaminants which have been found in Illinois groundwaters and which are known to cause or suspected of causing cancer, birth defects or any other adverse effect on human health.

Agree	Disagree	Not Sure	Illustrative Options
____	_____	_____	Any contaminant that has ever been detected by sampling and analysis of groundwater could be addressed.
____	_____	_____	Priority emphasis could be placed upon contaminants for which action was taken in conjunction with the public water supply and land pollution control programs which are operated by the IEPA.
____	_____	_____	Identified contaminants from all available data bases could be selectively considered using an agreed upon screening protocol.
		(Alternative)	_____
			_____
			_____
____	_____	_____	Priority emphasis could be placed on contaminants which are known to or suspected of causing cancer or birth defects.
____	_____	_____	Priority emphasis could be placed on the contaminants which are known to or suspected of causing cancer or birth defects and other targeted health concerns.

___ _____ _____

All chemical substances which are suspected of having any adverse effect on human health could be addressed.

(Alternative) _____

_____

_____

Notes -- _____

_____

_____

_____

ISSUE TWO -- Recognizing that groundwaters differ in many important respects from surface waters.

Agree	Disagree	Not Sure

Illustrative Options

___ _____ _____

Apply the system currently used for surface water quality standards, as much as possible, to the new groundwater quality standards.

___ _____ _____

The system of water quality standards for groundwater could be different, in many respects, from that used for surface water including more emphasis upon preventive features.

(Alternative) _____

_____

_____

Notes -- _____

_____

_____

_____

ISSUE THREE -- Classifying groundwaters on an appropriate basis.

Agree	Disagree	Not Sure	Illustrative Options
____	_____	_____	A unitary classification system could be provided by specifying all groundwaters as being actually or potentially available for drinking water (highest beneficial use).
____	_____	_____	A two-tier class system could be provided by limiting a drinking water designation to just existing points of domestic use and grouping all other groundwaters together.
____	_____	_____	A multi-tier classification system could be provided to distinguish among major groupings of groundwaters.
____	_____	_____	The USEPA's classification system could be adopted for use in Illinois.

(Alternative) _____

_____

_____

Notes -- _____

_____

_____

_____

ISSUE FOUR -- Providing preference for numerical as opposed to narrative standards.

Agree	Disagree	Not Sure	Illustrative Options
____	_____	_____	Numerical standards could be provided for as many substances as possible.
____	_____	_____	Use of numerical standards could be limited to only those substances where formal federal drinking water numbers are available.

____ _____ _____

In concert with the adoption of some numerical standards, one could also establish a regulatory presumption that zero would be applicable in the absence of specific numerical limits.

(Alternative)

_____

_____

_____

Notes --

_____

_____

_____

_____

ISSUE FIVE -- Applying nondegradation provisions for appropriate groundwaters.

Agree	Disagree	Not Sure	Illustrative Options
____	_____	_____	Any reduction in quality of groundwaters (no adverse change on a numerical basis) could be prohibited.
____	_____	_____	Use of this provision could be targeted to only the high quality groundwaters (eg., drinking water levels or better).
____	_____	_____	A tiered provision for nondegradation could be provided.
____	_____	_____	An approach similar to the groundwater law in Wisconsin could be adopted.

(Alternative)

_____

_____

_____

Notes --

ISSUE SIX -- Considering relevant experiences from other states.

Agree	Disagree	Not Sure	Illustrative Options
____	_____	_____	All fifty states could be surveyed and studied in detail to determine the nature of each regulatory system for groundwater protection.
____	_____	_____	One or two states could be selected to evaluate in detail from each of the ten regions operated by the USEPA.
____	_____	_____	Screening criteria could be developed to rank the states according to the general utility of their programs for our standards setting effort.

(Alternative)

Notes --

ISSUE SEVEN -- Considering existing methods of detecting and quantifying contaminants.

Agree	Disagree	Not Sure	Illustrative Options
____	_____	_____	The program could be designed independently of the detection factor.
____	_____	_____	Detectability could be directly provided for in the program design.
____	_____	_____	A hybrid approach could be provided.

(Alternative) _____

_____

_____

Notes -- _____

_____

_____

_____

RAK:rd/3548j/41-46

APPENDIX B

Ambient Groundwater Quality and Drinking Water Standards

Groundwater quality is affected by various factors including precipitation, chemical, biological and geological effects and interaction. Apparent water quality can also be affected by well construction features and sampling procedures. Groundwater quality can be highly variable even within a single aquifer. Increased depth of a well or land location can greatly change the natural chemical characteristics of well water. Water quality can also be affected by the activities occurring on or around the recharge areas which replenish the water. Therefore, groundwater quality and water characteristics are often determined by the location of a well, the formations penetrated, and the depth of the well. The majority of private wells and some public water wells are drilled in shallow water-bearing formations.

Studies were undertaken by the State Water Survey and the Environmental Protection Agency to characterize aquifers utilizing 40 years of water quality data. Variations of inorganic chemicals were plotted in relation to the state's aquifer groups. Figure 1 demonstrates the variability of nitrates in wells less than 50 feet. Figure 2 demonstrates that the patterns across the state are different for deeper wells in the same glacial drift aquifer. The variability of this common chemical is evident. It is noted that the drinking water standard of 10 mg/l would not be achieved in substantial areas of Illinois.

Figure 1. Nitrates in Glacial Drift Wells <50 feet Deep

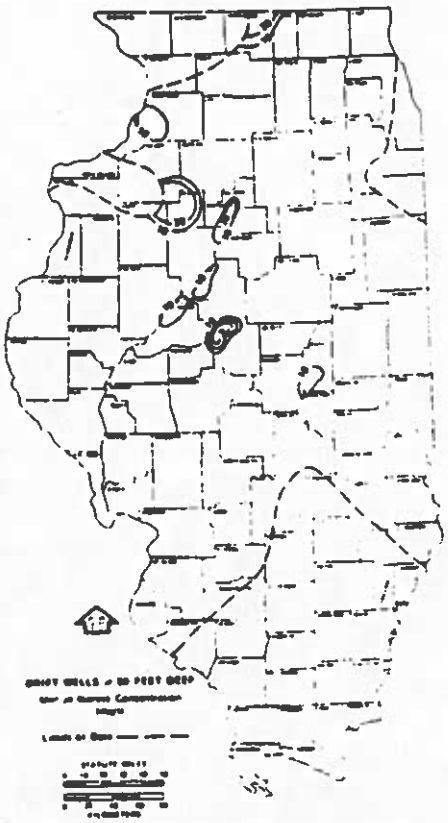


Figure 2. Nitrates in Glacial Drift Wells >50 Feet Deep

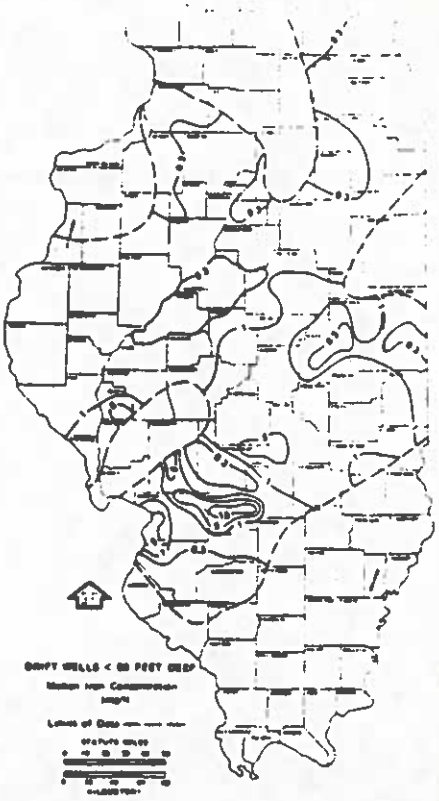


Figure 3. Iron Concentrations In Drift Wells <50 Feet Deep

Figure 4 illustrates community water supply wells included for this evaluation showing arsenic concentrations.

Figure 4. Arsenic Concentrations In Community Water Wells Above 1 µg/l

Figure 5 displays radium in groundwater from bedrock aquifers.

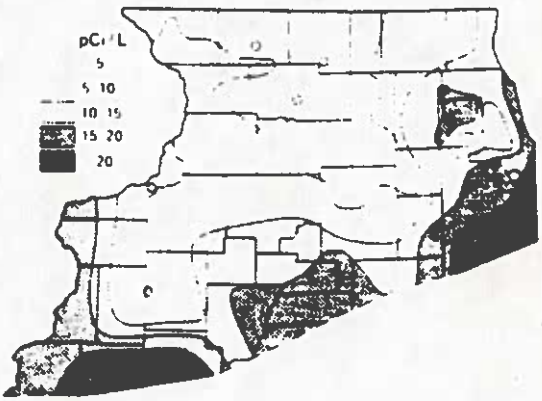


Figure 5. Radium Concentrations Relative To 5 pCi/L Drinking Water Standard From Bedrock Aquifers

Eighty-two community water wells have shown quantifiable levels of organic chemicals based upon sampling and analysis performed by the IEPA over the past several years. This represents eight percent of the 1,098 community wells included in this evaluation. (See Figure 6)

Figure 6. Statewide Distribution of Active Community Wells Affected by Organic Chemicals

The extensive use of volatile organic compounds (VOCs) in industrial, chemical, commercial, and household applications has resulted in wide distribution of these compounds in the environment.

The Agency conducted [illegible] a summary of the results of this study which compares the ambient quality of wells to the Pollution Control Board Standards. Generally groundwater quality is good; however, several of the inorganic parameters measured routinely would violate general use or other applicable standards. Groundwater withdrawn for drinking water should meet Public and Food Processing Water Supply Standards. The Maximum Allowable Concentration (MAC) standards must be met in the distribution system of water supplies.

Table I. ANALYSES FOR 700 PUBLIC WATER SUPPLY WELLS DURING 1985-86

Parameter	Numeric Standard (mg/l) & Reference*	Maximum Concentration Observed (mg/l)	% of Samples That Exceed Standards
Arsenic (As)	0.05 (P,M)	0.074	<1.0%
Barium (Ba)	1.0 (P,M)	11.0	<1.0%
Cadmium (Cd)	0.010 (P,M)	0.017	<1.0%
Chromium (Cr)	0.05 (P,M)	0.13	<1.0%
Copper (Cu)	0.02 (G)	0.17	--
Cyanide (CN)	0.02 (M)	0.12	<1.0%
Fluoride (F)	1.8 (M)	4.5	<1.0%
Iron (Fe)	1.0 (G,M)	22.0	47%
Lead (Pb)	0.05 (P,M)	0.36	--
Manganese (Mn)	0.15 (P,M)	2.2	22%
Mercury (Hg)	0.0005 (G)	0.0006	<1.0%
Nitrogen (N)	10.0 (P,M)	19.0	--
Selinium (Se)	0.01 (P,M)	0.025	<1.0%
Zinc (Zn)	5.0 (M)	2.7	--
Chloride (Cl)	250.0 (P)	0.41	<1.0%
Phenols	0.001 (P)	0.02	<1.0-3.0%
Sulfate (SO_4)	250.0 (P)	1,400	12-13%
Total Dissolved Solids (TDS)	500.0 (P)	2150	49%

*Reference

G=General Use	Subtitle C
P=Public And Food Processing	Subtitle C
M=Maximum Allowable Concentration	Subtitle F

It becomes obvious that many water wells do not routinely meet standards for iron, manganese, and total dissolved solids. Iron and manganese are very common elements found in many rocks and soils of the earth's crust.

EXHIBIT 8

December 1-2

The GAC-sponsored Groundwater Protection Policy Forum was held at Lisle/Naperville on December 1, 1988. It was well attended and provided an excellent opportunity for dialogue on various technical and policy issues.

John A. Baker conducted a GAC tour of the new environmental monitoring laboratory for Waste Management, Inc. The facility was dedicated in October of 1988. The tour started at 9:00 a.m. on December 2, 1988.

The GAC meeting was called to order at 10:00 a.m. at the WMI facility; the following were in attendance:

Cathy Barnard	Nalco Chemical Company
John Pitz	Water Well Contractors
Allen Panek	City of Naperville, Water Utilities
Harold Reetz	Potash & Phosphate Institute
Kevin Greene	Citizens for a Better Environment
Melford Dahl	City of Elgin
Jerry Paulson	McHenry County Defenders
John Baker	Waste Management, Inc.
Jackie Bruemmer	Southwestern Illinois Planning Commission
Robert Clarke	Illinois Environmental Protection Agency
Carol Sinnott	Illinois Environmental Protection Agency
Gary Clark	Illinois Department of Transportation
Bill Barbel	Illinois Department of Transportation
Joanna Hoelscher	Citizens for a Better Environment

Chairman Dahl gave an opening statement regarding the apparent success of the Forum and reviewed the minutes of the previous meeting. Jackie Bruemmer made a motion to accept the minutes, John Baker seconded, and the motion carried unanimously.

State Water Plan Task Force

Groundwater Quantity Committee

Gary Clark (IDOT, Division of Water Resources) briefed the Council on the progress relating to the quantity problems. He presented a listing of "white paper" issues for information topics, policy and management topics, and legal aspects. Schedules of compeltion were provided in a handout. Kevin Greene questioned whether the "interest group" outreach was sufficient to adequately inform the public. Mr. Clark explained that DOWR plans to hold a hearing in February of 1989 to get input from the general public. The Council agreed that all white papers and any legislative packages be made available for information. The GAC will monitor progress on these related matters. If any particular interest group desires to be involved, Gary Clark indicated they would respond.

Mr. Robert Clarke (IEPA) briefly described the Agency's efforts to develop regulations under Section 14.4 of the Act. He indicated that the Agency has developed a preliminary draft. However, the submission to the Pollution Control Board will be delayed till the end of January, 1989. Drafting of the regulations was partly delayed because regulations for existing and new activities must be developed separately. In addition, complex issues involving retrofit aspects and possible activity phase-out require additional time.

The Council recognized the significance of these aspects, but generally expressed support to address these critical issues. Cathy Barnard indicated that certain activities within the setback zones (minimum and maximum) might need to be evaluated in regard to continuance of operations. However, she expressed serious concern regarding such actions in Regulated Recharge areas. The Council will have an opportunity to review the package.

General Discussion

The Council requested assistance in receiving copies of the materials available at the Forum. Materials of interest to the Council can be sent to Robert Clarke. He will attempt to secure copies for distribution to the Council (i.e., Washington Package, Iowa Law, etc.).

Mr. Panek requested the state agencies prepare a one-page summary of available funding under the IGP. This could be discussed at the next meeting to better understand if fiscal issues are a significant impairment to implementation. Other members agreed that this needs further discussion. Concern was raised regarding the Department of Public Health funding which needs to be "earmarked" for IGPA and not withheld on used for other purposes.

Mr. Paulson indicated that the compliance point and monitoring point are different concepts and need to be recognized in the Standards-setting process.

It was noted that the Forum was taped by DENR for the ECOS contractor.

Kevin Greene and others discussed what is the Council's next step on the standards. The Agency responded that a response by the GAC at this time is appropriate. The Issues/Options Paper could provide a logical focus of response. Extensive discussion on procedures followed. The GAC could have separate opinions, or a consensus. Although the latter is most desirable, no agreement was reached as to protocals. All members did agree to address all aspects in the next meeting. They requested the Agency to have Mr. Kanerva (IEPA), Mr. Clarke (IEPA), and Mr. Berg (SGS) present to facilitate a detailed issue by issue discussion. Other agencies could also send representatives if meeting space is adequate.

The next meeting is scheduled for January 24, 1989 (Tuesday), 9:30 a.m. at Naperville.

A tentative agenda was suggested, as follows:

1) IGPA funding status and needs
2) Discussion Issues/Options on standards
3) Regulations for activities under Section 14.4

The Agency will advise the Council on a final agenda and schedules.

EXHIBIT 9

Interagency Coordinating

January 10, 1989

The session was called to order at 9:05 a.m. at the Illinois Environmental Protection Agency. The following were:

Present:

Roger Kanerva	Illinois Environmental Protection Agency
Robert Clarke	Illinois Environmental Protection Agency
Scott Phillips	Illinois Environmental Protection Agency
Harry Chappel	Illinois Environmental Protection Agency
Gary R. Clark	Illinois Department of Transportation-Division of Water Resources
Dick Schicht	ENR-State Water Survey
Keros Cartwright	ENR-State Geological Survey
Bob Schwarberg	Illinois Department of Agriculture
Dick Berg	ENR-State Geological Survey
David Baker	Department of Energy & Natural Resources
David Antonacci	Illinois Department of Public Health
Mitch Beaver	Department of Energy & Natural Resources
Stephen Nussbaum	Department of Mines & Minerals
Rick Cobb	Illinois Environmental Protection Agency
C.L. Corlew	Department of Commerce and Community Affairs
Michael Klebe	Illinois Department of Nuclear Safety

Not Present:

Illinois Fire Marshal (Jack Moore)
Governor's Office (Gretchen Bonfert)

The meeting was chaired by Roger Kanerva (IEPA). Mitch Beaver (DENR) moved for approval of the minutes from the November 14, 1988 meeting. Bob Schwarberg (DOA) seconded the motion and they were approved unanimously.

Groundwater Technical Rules

Roger Kanerva reported that the Section 14.4 technology regulation proposal is still in draft form. A final draft will be available within 3-4 weeks. Roger stated that we preferred having a more polished proposal. Therefore, our submission to the Pollution Control Board will be delayed rather than submit the draft in its present form. The main difficulty is the distinction between sources and activities prescribed by law. Roger said that these rules focus on what was unaddressed by the current setback provisions. Section 14.4 of the Groundwater Protection Act prescribes rules for activities currently exempted or not covered by existing authorities.

a detailed introduction to the proposed regulation. Part 615 addresses "existing" on-site activities within setback zones and regulated recharge areas. Part 616 addresses "new" activities.

Roger provided a rationale for the rules which distinguish between new and existing activities. This is in response to the legislative mandate to consider, where appropriate, notification limitations to trigger preventative response activities. Thus, the monitoring and compliance aspects for new activities incorporates a background water quality concept. This has greater validity in a scientific basis than establishing a trigger upon an arbitrary percent of a standard. In addition, the provision of the proposed rules to not continue certain on-site practices for special waste is consistent with the general concept used in the setback elements of the law.

Keros Cartwright (ISGS) requested a clarification of the 2,500 foot cutoff in Regulated Recharge Areas. This is consistent with the legislation.

D. Baker (DENR) commented that abandonment of a water well may be an option rather than close-out a regulated activity.

It was also pointed out that the rules for activities involving fertilizers and pesticides refer to the DOA rules under development.

Groundwater Standards Update

Roger Kanerva reported that the GAC protection policy forum was successful and that the Issues/Options Paper was well received and helpful.

Roger stated that the members of a Groundwater Standards Technical Team have been picked. The first official meeting of the team will be tomorrow, January 11, 1989. The Agency is developing a discussion document that picks a couple of the options from the Issue/Options Paper. The discussion paper will describe and include the following elements:

I) Classification System
II) Non-degradation Policy
III) Numerical Standards
IV) Narrative Standards
V) Applicability Section

The groundwater standards development time table was presented as follows:

- The Interagency Technical Standards Team will hold its first meeting on January 11, 1989.
- Draft of a Discussion Document completed by the first week of February;
- Circulate the draft Discussion Document to all the committee members as soon as possible. Roger encouraged that the committee members review the Discussion Document very thoroughly;
- The March committee meeting will focus on the Discussion Document and is intended to be an open-ended, all-day dialogue;

to provide dialogue and begin the outreach program;
- In April, the Agency will sponsor three public workshops to discuss groundwater standards in the north, central and southern portions of the state as part of its public outreach program. We anticipate the need for DENR Educational Committee Assistance;
- In May we hope to have taken all the input and have a draft rule and;
- By July 1 have a polished regulatory proposal ready for the Pollution Control Board.

Roger stated that it's imperative that this proposal be on time because the groundwater standards are the driving force behind a lot of other programs.

Karen Miller (DENR) reported that Camp, Dresser and McKee (CDM) has been selected to study the Economic Impact of Groundwater Standards. Bob Schwarberg (DOA) commented that he was concerned that CDM may not have an Agriculture Specialist. Dave Baker (DENR) replied that they questioned CDM about that. Roger Kanerva stated that the ECIS process will occur concurrently with the proposal to the Board. Roger strongly encouraged that the contractor be present at the Regulatory Development Session in March. Roger also invited anyone who was interested to attend the Groundwater Technical Team meeting on January 11, 1989.

Pesticides Subcommittee Update

Bob Schwarberg (DOA) reported on the meeting held at USEPA Region V concerning the Aldicarb document and the National Pesticide Strategy. Bob stated that he didn't expect USEPA's Aldicarb document to change much by the time it's finalized in June. He also stated that DOA was still going to develop a generic plan and they'd like to see it be operable within existing state regulations. The generic plan is already consistent with the following baseline being developed by the State:

- Standards
- Classification System
- Mapping

Bob (DOA) stated that they also preferred DENR mapping v.s. the federal DRASTIC System. The real problem concerns monitoring and who was going to do the monitoring. Should the registrant or the state pay? Bob also stated that they need to decide between all involved if they still need a plan. Roger Kanerva stated that we should still focus our efforts on standards and just wait to see what USEPA's final process looks like.

Update: Pesticide Pilot Study

Dave Antonacci (IDPH) reported that he thought that the ENR Pesticide Chemical Study Proposal looked good. However, the funding issue needs to be addressed. Dave also stated that IDPH wasn't fully informed of their role in the study prior to the proposal being finalized.

proposal. Dick Berg (ISGS) stated that the study proposal paper has been finalized.

Mitch Beaver (DENR) stated that IDPH should have been contacted and more fully informed. Dave Baker (DENR) reported that he did contact IDPH. Mitch replied that he would further evaluate the situation.

Roger Kanerva (IEPA) stated that it's a good idea to contact people prior to releasing a study which impacts other agencies. Dave Antonacci (DPH) reiterated his suggestion that funding is the main issue and that we need to prioritize ICCG efforts.

Mitch Beaver (DENR) stated that maybe ICCG should possibly prioroitze phases of the proposal that aren't adequately funded to report to the General Assembly. The GAC could be considered as a possible sounding board for these issues.

Bob Schwarberg (DOA) stated that the State of Florida uses a similar mechanism for funding of programs.

Monitoring Wells and Borings

Dave Antonacci (IDPH) reported that they have revised the rules as to what a boring and monitoring well is. Dave stated that they have drafted a monitoring well code revision which requires modification of their law to not register drillers of monitoring wells. The rule would provide technical guidance for construction of wells. Dave stated that the code will enable us to track locations where drilling has occurred and allow for that information to be submitted to the surveys.

Roger Kanerva stated that it would be useful to distribute copies of the proposed rule to all committee members as it is.

Report of the Education Subcommittee

Mitch Beaver (DENR) reported that they have added USDA to their committee. They've also prepared the following materials:

- Question/Answer Document;
- Groundwater Education Material;
- Water Quality and Hydrologic Cycle Brochure;
- Groundwater Protection Gazette
- Workshop (CES) for Staff
- Video On How To Understand The IGPA

Other Business

Gary Clark (IDOT) reported on the status of the Groundwater Quantity Protection efforts and schedule for public meetings.

January 24 in Naperville. The topics on the agenda for discussion at that meeting are the following:

- Standards Issues/Options;
- Technology Regulations Position;
- Funding aspects.

Roger (IEPA) stated that the GAC hasn't made the intent of the requested funding summary from each agency known yet.

Roger asked that the next ICCG meeting focus entirely upon the Groundwater Standards issue. Keros (ISGS) asked if the completed regional recharge mapping project could be included as a topic. Roger Kanerva replied that it depended on how much detail they were intending to present. Dick Berg (ISGS) stated that it would just be in the form of presenting a map.

Keros (ISGS) asked if there was any way to address the funding issue. Roger stated that he would need to discuss that issue with the Director.

Mitch Beaver (DENR) stated that he's not sure if it's worth having ICCG prioritize studies until we understand that new funding at a specific level is available.

Roger Kanerva stated that funding was available to complete the standards effort, technology regulations proposal, and base setback program and that maybe we should regroup this fall about regulated recharge area and pesticide monitoring funding issues.

Next Meeting

The next ICCG meeting will be held on March 7, 1989 at 1340 N. 9th Street, Springfield.

EXHIBIT 10

January 4, 1989

Robert Clarke

Participation in the Technical Standards Team
for Groundwater

This is to request your participation in the development of the Agency proposal to establish groundwater quality standards. Consultation with your representative on the Interagency Coordinating Committee on Groundwater resulted in your selection to represent your agency's concerns and provide technical consultation in these important matters.

Since the proposal is due to the Pollution Control Board by July 1, 1989, it is imperative that we begin to develop our approach. The enclosed "Issues/Options Paper" is provided as an overall framework. The Technical Standards Team will be composed of members from the Agency, Department of Public Health, State Water Survey, Natural History Survey, and the Department of Agriculture.

We have enclosed a preliminary package developed in cooperation with USGS to help establish a water quality baseline. In addition, we have enclosed a master list of compounds which need to be considered regarding our legislative mandate. We plan to discuss this and other aspects at our first meeting. We will need to carefully evaluate the various options and make some determinations quickly in order to meet the schedule.

The first meeting will be held at 1340 North Ninth Street. The meeting is scheduled to begin at 9:30 a.m. on January 11, 1989. The meeting will probably last most of the day. If you have any questions, please advise. Otherwise, we will see you on the 11th.

RPC:plc

cc: R. Kanerva
R. Selburg
Agency GW Standards Team
D. Baker, DENR
file

E X H I B I T 11

Technical Committee

January 11, 1989

Present:

Robert Clarke	Illinois Environmental Protection Agency
James O'Brien	Illinois Environmental Protection Agency
A.G. Taylor	Illinois Environmental Protection Agency
Bob Schwarberg	Illinois Department of Agriculture
Tom Long	Illinois Department of Public Health
Alan Felsot	Illinois Natural History Survey
Michael Barcelona	Illinois State Water Survey
Karen Miller	Illinois Department of Energy and Natural Resources
Harry Chappell	Illinois Environmental Protection Agency
Richard Cobb	Illinois Environmental Protection Agency
Tom Hornshaw	Illinois Environmental Protection Agency

The meeting was chaired by Bob Clarke and Jim O'Brien, IEPA.

Official Committee

Bob reported that the official committee has been picked and includes the following:

Robert Clarke
James O'Brien
Bob Schwarberg
Tom Long
Alan Felsot
Michael Barcelona

Committee Purpose

Bob Clarke stated that the purpose of this committee was to focus upon the technical aspects of the groundwater standards process. The Issues/Options paper is the only decision that's been made so far. We need reaction from the ICCG and GAC on that paper.

Groundwater Standards and Technical Rule Update

Bob Clarke reported that a draft computer listing of compounds has been developed that can be amended with your input. Our statistical support base of information will come from the United States Geological Survey (USGS). Bob asked for input from the committee on the ongoing contract with USGS. Bob (IEPA) also stated that we've prepared a bibliography of materials and items in relation to groundwater standards. We can make any of these materials available to committee members upon request.

[illegible] apprised that the Agency is developing a discussion document which narrows down the Issues/Options to a couple of choices. We plan to have the discussion paper completed by the end of February to circulate. The next ICCG meeting will focus on the discussion document and is scheduled for March 7. The Agency will be sponsoring a day-long regulatory development session with interest groups in late March. Bob encouraged all groundwater technical committee members to attend that session. In April the Agency will sponsor a series of three public workshops in the north, central and southern part of the state.

Bob (IEPA) also reported that the draft technology rules were presented for the first time to the ICCG yesterday. The draft rules prescribe to activities where current setback provisions left off. Existing activities points of compliance will relate to the specific standards that we will develop. New activities incorporate the preventative aspects of non-degradation. A release above background would trigger a corrective action. When the draft rules 615 and 616 are done, we will circulate these to each of the committee members. Bob encouraged each committee member to review these draft rules because they set the stage for the groundwater standards development.

Questions

Mike Barcelona (ISWS) asked what would happen if we adopted Subtitle C standards. Bob Clarke replied that the Subtitle C standards were derived for surface water and apply to underground water. The Act defines underground water differently than groundwater. We are mandated to propose standards for groundwater not underground water.

Mike Barcelona (ISWS) asked if our current standards are parallel to the federal primary and secondary standards. Bob Clarke responded, "No, because of Subtitle F". In addition, most groundwater is not treated. Also, it's unclear as to how private wells are regulated.

Tom Long (IDPH) stated that maximum contaminant levels, MCL's, are not enforceable at private, semi-private wells, etc. That's the reason why drinking water numbers can't be used.

Jim O'Brien (IEPA) stated that Subtitle C is being revised. The general standards currently require that they be based upon 1/10 96 hr. TLm. The revision allows broader flexibility and looks at the lowest common denominator.

Tom Long (IDPH) asked if the mandate to develop groundwater standards is totally health based. Bob Clarke (IEPA) responded that we will provide that at a minimum but the mandate doesn't preclude us from considering other factors.

Bob Clarke (IEPA) stated that the Agency is the lead in the development process even if an option is opposite an individual committee member's opinion. However, he urged that the committee propose a unified approach to the board.

[illegible] (BOA) asked if risk v.s. benefits would be taken into account in this proposal. Bob Clarke replied that we will present both sides.

A.J. Taylor (IEPA) asked if it was possible that different standards would apply in different areas. Bob Clarke replied yes, there could, for example, be one set of numbers for groundwater, one for aquifers, and for setback zones of wells.

Groundwater Standards Discussion Document

Bob Clarke stated that five issues would be covered in the discussion document being developed:

I) Classification Systems
II) Non-degradation Procedures
III) Numeric Standards
IV) Narrative Standards
V) Applicability

Bob then described each of the above as follows:

I) Classification based upon designated use of resource groundwater by using four classes.

1) Potable Resource Groundwater
   a) Current uses
   b) Potential uses

2) General Use Non-Potable Groundwater
   A) Current use
   B) Potential uses or reserved water rights
   C) Return flow waters

3) Remedial Groundwaters
   A) Short term
   B) Long term

4) Naturally Limited

Or an alternative approach:

1) Resource Groundwater
   A) Potable
   B) General Resource

2) Other Groundwaters
   A) Naturally Limited
   B) Remedial

of either a setback zone or radius of influence could be used to apply numbers. The well would be used as a physical measure. The general class of groundwaters would be everything else. The policy would be to encourage general groundwater to move up in classification and not to move down. Naturally limited and remedial groundwaters would be special cases.

Alan Felsot (INHS) stated that communities need to be educated of their setback options.

Bob Clarke continued to describe the following elements of the discussion document:

II) Non-degradation:

1) Looks at background around existing facilities and;
2) Includes a policy keep designation as high as possible. We shouldn't be downgrading to a lower classification.

III) Numeric Standards:

Bob Clarke encouraged each committee member to read the Pollution Control Board's review of A Plan For Protecting Illinois Groundwater.

1) We need narrative standards because we're better off from a legal standpoint;
2) Quantification limits policy mandated by the IGPA.

IV) Narrative Standards:

1) We need narrative standards for compounds that we can't develop numeric standards for.

Jim O'Brien (IEPA) stated that we could use some concepts from the revised Subtitle C as a model.

Bob Clarke stated that we should consider the additive effects of individual compounds using the mixtures rule.

V) Applicability

1) Numeric and Narrative
   A) Set for Groundwater
   B) Set for Aquifers
   C) Set for Undergroundwater

2) For sources the point of compliance is adjacent to the facility and maybe the reverse of a setback.

Bob Clarke (IEPA) stated that he would draft memos to each agency director, represented on this committee, asking them if there are additional compounds that we should address.

Bob Clarke asked the committee if they thought the table that we prepared was a good way to start. Alan Felsot (INHM) stated that he thought the table looked very good and already appeared prioritized. Tom Long (IDPH) stated that the table looked good and that it included all the chemicals that they're concerned about. The committee unanimously agreed that the table was a very good start.

Bob Clarke stated that we need to determine the total list by the next meeting. Bob then asked what other data bases should we use. The committee agreed that the public water supply and COT/CROPA data bases appear to be the best to use.

Bob Clarke reported that he would be sending a memo notifying each committee member about a technical regulations workshop on January 30. Bob strongly encouraged each committee member to attend that workshop.

Next Meeting

The next meeting will be held on February 10, 1989, 10:00 a.m. at 1346 North Ninth Street, Springfield.

E X H I B I T 12

01-Sep-89 DATE

DRAFT GROUNDWATER CRITERIA TABLE

	COMPOUND	CHEM CLASS	NUM PWS WELLS	CNT CTRC SITES	CAS #	SDWA REGISSES	MCL mg/l	SEC MCL mg/l	PROP MCL mg/l	PROP SMCL mg/l	MCLG mg/l	PROP MCLG mg/l	MAC mg/l	SEC MAC mg/l	PUB FD-FR mg/l	GEN USE mg/l	Longterm HA CRA	FIN	GEN NA	IARC 1	IARC 2A	IARC 2B	NC SUB	IARC AC	IARC CHMA AC-2B	NTP NC	NTP AC	PC	EPA CAG	CHE CAN GRP	COMM
1																															
2																															
3																															
4																															
5																															
6	Trichloroethane-1,1,1	V	64	20	71556	F M	0.2	---			0.2						---	Y	---											D	
7	Trichloroethylene	V	45	33	79016	F M	0.005	---			0						---	---	Y										Y	B2	
8	Tetrachloroethylene	V	38	29	127184	F M,U	---	---	0.005		0	0					---	Y	---									Y	Y	B2	
9	Dichloroethylene-trans-1,2	V	28	29	156605	P M,U	---	---	0.1			.01					---	Y	---											D	
10	Dichloroethylene-1,1	V	22	16	75354	F M	0.007	---			0.007						---	Y	---										Y	C	
11	Dichloroethane-1,1	V	19	23	75343	L P,U	---	---									---	---	---											--	
12	Dichloroethane-1,2	V	17	19	107062	F M	0.005	---			0						---	Y	---											B2	
13	Benzene	V	16	37	71432	F M	0.005	---			0						---	---	Y	Y						Y			Y	A	
14	Chlorobenzene(Monochlorobenzene)	V	9	13	108907	P M,U	---	0.1	0.1			0.1					---	Y	---											D	
15	Carbon Tetrachloride	V	6	4	56235	F M	0.005	---			0						---	Y	---			Y					Y		Y	B2	
16	Ethylbenzene	V	5	31	100414	P M',U	---	---	0.7	0.03		0.7					---	Y	---											D	
17	Vinyl Chloride	V	5	12	75014	F M	0.002	---			0						---	Y	---	Y						Y			Y	A	
18	Atrazine	P	5	3	1912249	P M	---	---	0.003			0.003					---	Y	---											C	
19	Alachlor	P	5	5	15972608	P M	---	---	0.002		0	0					---	Y	---											B2	
20	Toluene	V	4	44	108883	P M,U	---	---	2	0.04		2					---	Y	---											--	
21	Xylene	V	3	44	1330207	P M,U	---	---	10	0.02		10					---	Y	---											D	
22	Cyanazine	P	3	3	21725462	L P	---	---									---	Y	---											D	
23	Metolachlor	P	3	4	51218452	L P	---	---									---	Y	---											C	
24	Dichlorobenzene (total)	V	2	0	?	M	---	---									---	---	---											--	
25	Metribuzin	P	1	4	21087649	L P	---	---									---	Y	---											D	
26	Aliphatic Hydrocarbons	SV	1	4			---	---									---	---	---											--	
27																															
28	Arsenic	I		7	7440382	P M	0.05	---	0.03				0.05		0.05	1	---	Y	---	Y						Y			Y	A	
29	Barium	I		5	7440393	P M	1	---	5			5	1		1	5	---	Y	---											D	
30	Boron	I		1	7440428	L P	---	---								1	---	---	---											--	
31	Cadmium	I		8	7440439	P M	0.01	---	0.005			0.005	0.01		0.01	0.05	---	Y	---			Y					Y		Y	D	,
32	Chloride	I		3	16887006	F	---	250						250	250	500	---	---	---											--	
33	Chromium	I				P M	0.05	---	0.1			0.1	0.05		0.05		---	Y	---	Y						Y			Y	D	,
34	Chromium III	I		2	7440473		---	---								1	---	---	---	Y						Y				--	
35	Chromium VI	I		0	7440473		---	---								0.05	---	Y	---										Y	--	; unstE
36	Copper	I		6	7440508	F M	---	1					5	1		0.02	---	---	---											--	
37	Cyanide	I		7	57125	L N	---	---					0.2			0.025	---	Y	---											D	,
38	Fluoride	I		2	-	F N	4	2					1.0			1.4	---	---	---											--	, pt)
39	Gross Alpha Part Activ	I				D	15pC/l	---					15 pC/l				---	---	---											A	
40	Hydrogen Sulfide	I					---	---						0.05			---	---	---											--	
41	Iron	I		3	7439896	F	---	0.3					1	0.3		1	---	---	---											--	A -(excp
42	Lead	I		10	7439921	P M	0.05	---					0.05		0.05	0.1	---	Y	---											--	A
43	Manganese	I		4	7439965	F	---	0.05					0.15	0.05	0.15	1	---	---	---											--	A
44	Mercury	I		6	7439976	P M	0.002	---	0.002			0.002	0.002			0.0005	---	Y	---											D	A
45	Nickel	I		5	7440020	L N	---	---								1	---	Y	---		Y						Y		Y	D	A
46	Nitrate-Nitrogen	I		8	-	P N	10	---	10			10	10		10		---	Y	---											D	H
47	Phenols	I		7	108952		---	---							0.001	0.1	---	---	---											--	T
48	Radium-226&228	I				D	5 pC/l	---					5 pC/l				---	---	---											A	
49	Selenium	I		7	7782492	P M	0.01	---	0.05			0.05	0.01		0.01	1	---	---	---											--	A
50	Silver	I		5	7440224	P P¹	0.05	---		[illegible]			0.05			0.005	---	---	---											--	A
51	Sulfates	I		3	-	F N	---	250						250	250	500	---	---	---											--	S prote
52	TDS	I		3	-	F	---	500						500	500	1000	---	---	---											--	I nonA
53	Zinc	I		7	7440666	F P¹		5					5	5		1	---	---	---											--	A
54	Color					F	---	15 CU						15 C.U.			---	---	---											--	C Units
55	Foaming Agents					F	---	0.5						0.5			---	---	---											--	
56	Odor					F	0	3T.O.N.						3 T.O.N.			---	---	---											--	
57	pH					F		6.5-8.5								6.5-9	---	---	---											--	T
58	Turbity					?	1TU	---					1(NTU)				---	---	---												

01-Sep-88 DATE

DRAFT GROUNDWATER CRITERIA TABLE

	COMPOUND	CMPND CLASS	NUM FWS WELLS	CDT/ CPPC SITE	CAS #	SDWA REG 586	MCL mg/l	SEC MCL mg/l	PROP MCL mg/l	PROP SMCL mg/l	MCLG mg/l	PROP MCLG mg/l	HAC mg/l	SEC HAC mg/l	FUE FD-FR mg/l	GEN UIE mg/l	Longterm HA DRA	Longterm HA FIN	GEN HA	IARC GRP 1	IARC GRP 2A	IARC GRP 2B	NC SUB	IARC AC	IARC CHHA AC-2B	HC	NTP AC	NTP PC	EPA CAG	CHEM CAN GRP	COMM
6	Aldrin	P		3	309002		---	---					0.001		0.001														Y	B2	
7	Chlordane	P		3	57749	P M	---	---	0.002			0	0.003		0.003	0		Y											Y	B2	
8	DDT & Metabolites	P		'	50293		---	---					0.05		0.05							Y					Y		Y	B2	
9	Dieldrin	P		3	60571	L	---	---					0.001		0.001			Y											Y	B2	
10	D-2,4	P		1	94757	P M	0.1	---	0.07			0.07	0.01		0.1			Y					Y							D	
11	Endrin	P		1	72208	L M	0.0002	---					0.0002		0.0002			Y												E	
12	Heptachlor	P		2	76448	P M'	---	---	0.0004			0	0.0001		0.0001			Y											Y	B2	
13	Heptachlor epoxide	P		3	1024573	P M'	---	---	0.0002			0	0.0001		0.0001			Y												B2	
14	Lindane	P		2	58899	P M	0.004	---	0.0002			0.0002	0.004		0.004			Y									Y		Y	B2C	
15	Methoxychlor	P		1	72435	P M	0.1	---	0.4			0.4	0.1		0.1			Y												D	
16	Parathion	P			56382		---	---							0.1															C	
17	SILVEX-2,4,5 TP	P			93721	P M	0.01	---	0.05			0.05	0.01		0.01			Y					Y							D	
18	Toxaphene	P		1	8001352	P M	0.005	---	0.005			0	0.005		0.005				Y						Y		Y		Y	B2	
19	Oil (Hexane Soluble)	SV		1			---	---							0.1															--	
20	Bromodichloromethane	V		1	75274	L P,U		---					0.1																	--	
21	Bromoform	V		2	75252	L P,U		---					0.1																	--	
22	Chloroform	V		13	67663	L P,U		---					0.1														Y			B2	
23	Dibromochloromethane	V		1	124481	L P,U		---					0.1																	--	
24	Trihalomethanes(total)	V					0.1	---					0.1																	--	
25																															
26	Dichlorobenzene-1,4	V		4	106467	P M	0.075	---		0.005	0.075							Y										Y		C	
27	Beta particle and photon rad.	I				C	4 mrem	---																						A	
28	Coliform bacteria	O				F	<1/100ml	---																						--	
29	Corrosivity	O				F	---	NonCor.																						--	
30																															
31	Asbestos	I				P M	---	---	7 mil/l			7FL								Y						Y			Y	--	a Fbr
32	Nitrite-Nitrogen	I				P M'	---	---	1			1						Y												D	
33	Aldicarb	P				P M	---	---	0.01			0.01						Y												D	
34	Aldicarb sulfone	P			110083	P M'	---	---	0.04			0.04						Y												D/E	
35	Aldicarb sulfoxide	P			116063	P M'	---	---	0.01			0.01						Y												D/E	
36	Carbofuran	P			156366	P M	---	---	0.04			0.04						Y												E	
37	Dibromo-3-chloropropane-1,2(DBCP)	P			96128	P M	---	---	0.0002			0						Y												B2	
38	Dichloropropane-1,2	P		1	78875	P M,U	---	---	0.005	0.005		0						Y												B2	
39	Epichlorohydrin	P				P M	---	---	trtmt			0						Y				Y					Y		Y	B2	
40	Ethylenedibromide(EDB)	P			106934	P M,U	---	---	0.00005			0						Y				Y					Y			B2	rbl
41	PCB	P		4	1336363	P M	---	---	0.0005			0															Y		Y	B2	
42	Pentachlorophenol	P		1	87865	P M	---	---	0.2	0.03		0.2						Y					Y							D	
43	Acrylamide	SV				P M	---	---	trtmt			0						Y						Y						B2	
44	Methylstyrene	SV		1	98839	P M',U	---	---	0.005	0.01		0						Y												B2	c dua
45	Dichlorobenzene-1,2	V		4	95501	P M	---	---	0.6	0.01		0.6						Y												D	
46																															
47	Aluminum	I				P P	---	---		0.05																				--	
48	Dichloroethylene-cis-1,2	V				P M,U	---	---	0.07			0.07						Y												D	
49																															
50	Acifluorfen	P			5094666													Y												B2	
51	Ametryn	P			834'25													Y												D	
52	Baygon(Propoxur)	P			114261													Y												C	
53	Bentazon	P			25057890													Y												D	
54	Bromacil	V			314409	U	---											Y												C	
55	Butanone-2,Methyl ethyl ketone(MEK)	SV		13	78933	G/	---	---										Y												C	
56	Butylate	P		3	2008415		---	---										Y												D/C	
57	Carbaryl	P			63252																									D	
58	Carboxin	P			5234584																									C	

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DRAFT GROUNDWATER CRITERIA TABLE

No.	COMPOUND	CMPND CLASS	NUM PWS WELLS	CUT/CFRC #SITE	CAS #	SDWA REG1986	MCL mg/l	SEC MCL mg/l	PROP MCL mg/l	PROP SMCL mg/l	MCLG mg/l	PROP MCLG mg/l	MAC mg/l	SEC MAC mg/l	FUE EC-FR mg/l	GEN USE mg/l
6	Chloramben	P		1	133904		---	---								
7	Chlorothalonil	P			1897456		---	---								
8	Dacthal	P			1861321											
9	Dalapon	P			75990	L M	---	---								
10	Diazinon	P		1	333415		---	---								
11	Bicamba	P			1910009	L ?										
12	Dichlorobenzene-1,3	V		3	541731	F	---	---								
13	Dichloropropene 1,3	P		2	542756	L F,G	---	---								
14	Dimethrin	P			6723916											
15	Dinoseb	P			88857	L M										
16	Diphenamid	P			957517											
17	Disulfoton	P			298044		---	---								
18	Diuron	P			330541		---	---								
19	Endothall	P			145733	L M	---	---								
20	Ethylene glycol				107211	D/	---	---								
21	Ethylene thiourea	P			96457		---	---								
22	Fenamiphos	P			22224926		---	---								
23	Fluometuron	P			2164172		---	---								
24	Fonofos	P			944229		---	---								
25	Glyphosate	P			1071836	L M	---	---								
26	Hexachlorobenzene				118741	D/G	---	---								
27	Hexazinone	P			51235042		---	---								
28	Maleic hydrazide	P			123331		---	---								
29	MCPA	P			94746		---	---								
30	Methomyl	P			16752775		---	---								
31	Methyl parathion	P			298000		---	---								
32	Nitrate & Nitrite	I				F M	---	---								
33	Oxamyl(Vydate)	P			23135220	L M	---	---								
34	Paraquat	P			1910425		---	---								
35	Picloram	P			1918021	M	---	---								
36	Prometon	P			1610180		---	---								
37	Pronamide	P			23950585		---	---								
38	Propachlor	P		1	1918167		---	---								
39	Propazine	P			139402		---	---								
40	Propham	P			122429		---	---								
41	Simazine	P		1	122349	L M	---	---								
42	TCDD 2,3,7,8(Dioxin)	P			1746016	L M	---	---								
43	Tebuthiuron	P			34014181		---	---								
44	Terbacil	P			5902512		---	---								
45	Terbufos	P		1	13071799		---	---								
46	Trifluralin	P		2	1582098	L G	---	---								
47	T-2,4,5	P			93765	L M	---	---								
48																
49	ETU					D/E	---	---								
50	Legionella					D/F	---	---								
51	Methylene chloride(Dichloromethane)	V		24	75092	M		---								
52	Nitrocellulose(non-toxic)						---	---								
53	Trinitroglycerol						---	---								
54																
55	Acenaphthylene					D/G	---	---								
56	Adipates	C				M	---	---								
57	Bis-2-Chloroisopropyl ether						---	---								
58	Bromobenzene	V														

No.	COMPOUND	Longterm HA DWA	Longterm HA FIN	GEN HA	IARC 1	IARC 2A	GAP 2B	ECG	IARC AC	IARC OSHA AC-2B	NC	NTP AC	NTP PC	EPA CAS	CAR GRP
6	Chloramben	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
7	Chlorothalonil	---	Y	---	---	---	---	---	---	---	---	---	---	---	B2
8	Dacthal	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
9	Dalapon	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
10	Diazinon	---	Y	---	---	---	---	---	---	---	---	---	---	---	E
11	Bicamba	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
12	Dichlorobenzene-1,3	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
13	Dichloropropene 1,3	---	Y	---	---	---	---	---	Y	---	---	---	---	---	B2
14	Dimethrin	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
15	Dinoseb	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
16	Diphenamid	---	Y	---	---	---	---	---	---	---	---	---	---	---	E
17	Disulfoton	---	Y	---	---	---	---	---	---	---	---	---	---	---	E
18	Diuron	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
19	Endothall	---	Y	---	---	---	---	---	---	---	---	---	---	---	C
20	Ethylene glycol	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
21	Ethylene thiourea	---	Y	---	---	---	Y	---	---	---	---	Y	---	Y	
22	Fenamiphos	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
23	Fluometuron	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
24	Fonofos	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
25	Glyphosate	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
26	Hexachlorobenzene	---	Y	---	---	---	---	---	---	Y	---	---	---	Y	B2
27	Hexazinone	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
28	Maleic hydrazide	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
29	MCPA	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
30	Methomyl	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
31	Methyl parathion	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
32	Nitrate & Nitrite	---	Y	---	---	---	---	---	---	---	---	---	---	---	--
33	Oxamyl(Vydate)	---	Y	---	---	---	---	---	---	---	---	---	---	---	E
34	Paraquat	---	Y	---	---	---	---	---	---	---	---	---	---	---	C/E
35	Picloram	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
36	Prometon	---	Y	---	---	---	---	---	---	---	---	---	---	---	G
37	Pronamide	---	Y	---	---	---	---	---	---	---	---	---	---	Y	C
38	Propachlor	---	Y	---	---	---	---	---	---	---	---	---	---	---	G
39	Propazine	---	Y	---	---	---	---	---	---	---	---	---	---	---	C
40	Propham	---	Y	---	---	---	---	---	---	---	---	---	---	---	G
41	Simazine	---	Y	---	---	---	---	---	---	---	---	---	---	---	C/D
42	TCDD 2,3,7,8(Dioxin)	---	Y	---	---	---	Y	---	---	---	---	Y	---	Y	B2
43	Tebuthiuron	---	Y	---	---	---	---	---	---	---	---	---	---	---	D
44	Terbacil	---	Y	---	---	---	---	---	---	---	---	---	---	---	E
45	Terbufos	---	Y	---	---	---	---	---	---	---	---	---	---	---	D/E
46	Trifluralin	---	Y	---	---	---	---	---	---	---	---	---	---	---	C
47	T-2,4,5	---	Y	---	---	---	---	Y	---	---	---	---	---	---	D
48															
49	ETU	---	---	F	---	---	---	---	---	---	---	---	---	---	B2
50	Legionella	---	---	F	---	---	---	---	---	---	---	---	---	---	--
51	Methylene chloride(Dichloromethane)	---	---	F	---	---	---	---	---	---	---	---	Y	---	B2
52	Nitrocellulose(non-toxic)	---	---	F	---	---	---	---	---	---	---	---	---	---	--
53	Trinitroglycerol	---	---	F	---	---	---	---	---	---	---	---	---	---	--
54															
55	Acenaphthylene	---	---	D	---	---	---	---	---	---	---	---	---	---	--
56	Adipates	---	---	D	---	---	---	---	---	---	---	---	---	---	--
57	Bis-2-Chloroisopropyl ether	---	---	D	---	---	---	---	---	---	---	---	---	---	--
58	Bromobenzene			D											

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DRAFT GROUNDWATER CRITERIA TABLE

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COMPOUND	CMPND CLASS	NUM TOT/ POS WELLS	CPRC BSITE	CAS #	SOWA	MCL ug/l	SEC MCL ug/l	PROP MCL ug/l	PROP SMCL ug/l	MCLG ug/l	PROP MCLS ug/l	MAC ug/l	SEC MAC ug/l	PUB FD-PR ug/l	GEN USE ug/l	Longterm HA GRA	Longterm HA FIN	Longterm GEN HA	IARC GRP 1	IARC GRP 2A	IARC GRP 2B	IARC GRP SUB	HC IARC AC	IARC OSHA AC-2B	HC	NTP AC	NTP PC	EPA CAG	OHEA CAN GRP	COMMENTS
Bromochloromethane	SV				U2	---	---									---	---	0												
Butylbenzene-N	V				U2	---	---									---	---	0												
Butylbenzene-Sec	V				U2	---	---									---	---	0												
Butylbenzene-Tert	V				U2	---	---									---	---	0												
Chloramine	P				L P	---	---									---	---	0												
Chlorate	P				L P	---	---									---	---	0												
Chlorine	I				L P	---	---									---	---	0												
Chlorine dioxide					O/L	---	---									---	---	0												
Chlorite	I				L P	---	---									---	---	0												
Chloroethane	V				L P,O	---	---									---	---	0												
Chloromethane	V				L P,O	---	---									---	---	0												
Chlorophenol-2			SEQ NO 50		OL O	---	---									---	---	0												
Chlorophenol-2,4			SEQ NO 50		O/L	---	---									---	---	0			Y	Y								
Chlorotoluene-o	V				L P,O	---	---									---	---	0			Y	Y								
Chlorotoluene-p	V				L P,O	---	---									---	---	0											D	
Chlorophenol-2,4,6			SEQ NO 50		O/L	---	---									---	---	0											D	
Cyanogen chloride	P				L P	---	---									---	---	0			Y	Y							B2	
Dibromoacetonitrile	SV				L P	---	---									---	---	0												
Dibromomethane	V				L P,O	---	---									---	---	0												
Dichloroacetaldehyde					O/L	---	---									---	---	0											D	
Dichloroacetic acid					O/L	---	---									---	---	0												
Dichloroacetonitrile	SV				L P	---	---									---	---	0												
Dichlorodifluoromethane	V				U2	---	---									---	---	0											C	
Dichloropropane 2,2	P				L P,O	---	---									---	---	0												
Dichloropropane-1,1					O/	---	---									---	---	0												
Dichloropropane-1,3					O/L	---	---									---	---	0												
Dichloropropene 1,1	P				L O	---	---									---	---	0												
Diethyl phthalate(DEP)					O/O	---	---									---	---	0												
Diethylhexyl phthalate(DEHP)					O/	---	---									---	---	0											B	
Diisopropyl methylphosphonate					O/	---	---									---	---	0											B2	
Dinitrotoluene 2,6	V			121142	L P	---	---									---	---	0												
Fluorotrichloromethane	V				U2	---	---									---	---	0												
Formaldehyde				50000	O/	---	---									---	---	0											Y	
Gasoline					O/	---	---									---	---	0			Y									
Hexachlorobutadiene	SV			87683	U2	---	---									---	---	0											Y	
HMX					O/	---	---									---	---	0												
Isopropylbenzene	V				U2	---	---									---	---	0											C	
Methyl tertbutyl ether	V				L P	---	---									---	---	0												
Molybdenum	I				L P	---	---									---	---	0												
Monochloroacetic acid					O/L	---	---									---	---	0											D	
Naphthalene	SV		15	91203	O/ U2	---	---									---	---	0												
Pentachloroethane					O/	---	---									---	---	0												
Propylbenzene-n	V				O/ U2	---	---									---	---	0												
RDX					O/	---	---									---	---	0												
Sodium	I				L P	---	---									---	---	0												
Strontium	I				L P	---	---									---	---	0												
Tetrachloroethane 1,1,1,2	SV				L P	---	---									---	---	0												
Thallium	I		3	7440280	L N	---	---									---	---	0												
Trichloroacetaldehyde					O/L	---	---									---	---	0												
Trichloroacetic acid					O/L	---	---									---	---	0												
Trichloroacetonitrile	SV				O/L P	---	---									---	---	0												
Trichlorobenzene-1,3,5					O	---	---									---	---	0												
Trichlorobenzene 1,2,3	V				O	---	---									---	---	0												

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DRAFT GROUNDWATER CRITERIA TABLE

#	COMPOUND	CMPND CLASS	NUM FVS WELLS	COT/ CPC? #SITE	CAS #	SOURCE	MCL mg/l	SEC MCL mg/l	PROP MCL mg/l	PROP SMCL mg/l	MCLG mg/l	PROP MCLG mg/l	MAC mg/l	SEC MAC mg/l	PUB [illegible] mg/l	GEN [illegible] mg/l	Longterm HA DRA	FIN	GEN HA	IARC 1	IARC GRP 2A	IARC GRP 2B	NC SUB	IARC AC	IARC OSHA AC-2B	NC	NTP AC	NTP FC	EPA CAG	CHE CAN GRP	COMM
1																															
2																															
3																															
4																															
5																															
6	Trichloropropane-1,1,1						---	---									---	---	D												
7	Trimethylbenzene 1,2,4	V				[illegible]	---	---									---	---	D												
8	Trimethylbenzene 1,2,5(1,3,5???)	V				[illegible]	---	---									---	---	D												
9	Trinitrotoluene					[illegible]	---	---									---	---	D												
10	Vanadium	I				[illegible]	---	---									---	---	D												
11																															
12	Benzidine				92875	129											---	---	---	Y						Y			Y	--	
13	Bis(chloromethyl) ether				542881	129											---	---	---	Y						Y			Y	--	
14																															
15	Benzo(a)pyrene(PAH)				50328	CL9	---	---									---	---	---		Y						Y		Y	B2	
16	Berylium	I		3	7440417	[illegible]	---	---									---	---	---		Y								Y	B2	
17	Acrylonitrile				107131	CL9	---	---									---	---	---		Y						Y		Y	--	
18																															
19	Dichlorobenzidine-3,3'				91941	129											---	---	---			Y					Y		Y	--	
20	Trichlorophenol-2,4,6	SV		1	88062		---	---									---	---	---			Y	Y				Y		Y	--	
21	PCB-1248 (Aroclor-1248)				1336363	129											---	---	---			Y								--	
22	PCB-1254 (Aroclor 1254)				1336363	129											---	---	---			Y								--	
23	PCB-1260 (Aroclor-1260)				1336363	129											---	---	---			Y								--	
24	PCB-1221 (Aroclor-1221)				1336363	129											---	---	---			Y								--	
25	PCB-1232 (Aroclor-1232)				1336363	129											---	---	---			Y								--	
26	PCB-1242 (Aroclor 1242)				1336363	129											---	---	---			Y								--	
27	PCB-1016 (Aroclor-1016)				1336363	129											---	---	---			Y								--	
28																															
29	N-nitrosodi-n-propylamine				621647	129											---	---	---						Y		Y		Y	--	
30	Dibromo-3-Chloropropane 1,2	SV			96128	U	---	---									---	---	---						Y		Y		Y	--	
31	Indeno(1,2,3-c,d)pyrene(PAH)				193395	CL9	---	---									---	---	---								Y		Y	B2	
32	N-nitrosodimethylamine				62759	129											---	---	---						Y		Y		Y	--	
33	Benz(a)anthracene(PAH)				56553	C/L	---	---									---	---	---								Y		Y	B2	
34	Dibenz(a,h)anthracene(PAH)				53703	C/L	---	---									---	---	---						Y		Y		Y	B2	
35	Diphenylhydrazine-1,2				122667(60"=129												---	---	---								Y		Y	--	
36	Benzo(b)Fluoranthene				205992	C/L	---	---									---	---	---						Y		Y		Y	B2	
37	Nitropropane-2	SV		1	79469		---	---									---	---	---								Y			--	
38																															
39	Dichlorophenol-2,4				120832	129											---	---	---				Y							--	
40	Benzo(k)Fluoranthene(PAH)				207089	CL9	---	---									---	---	---					Y				Y		B2	
41	Dichloropropene	P			542756		---	---									---	---	---									Y		--	
42																															
43	Chrysene(PAH)				218019	CL9	---	---									---	---	---										Y	B2	
44	Tetrachloroethane-1,1,2,2	V		6	79345	[illegible]	---	---									---	---	---										Y	--	
45	Trichloroethane-1,1,2	V		6	79005	[illegible]	---	---									---	---	---										Y	--	
46	Hexachloroethane				67721	129											---	---	---										Y	--	
47																															
48	Ammonium Sulfamate	C			[illegible]												---	---	---											C	
49	Anthracene					[illegible]	---	---									---	---	---											D	
50	Benzo(g,h,i)perylene(PAH)					[illegible]	---	---									---	---	---											D	
51	Butyl benzyl phthalate	SV		3	[illegible]		---	---									---	---	---											C	
52	Dibutyl phthalate	SV		[illegible]	[illegible]		---	---									---	---	---											C	
53	Dimethyl phthlate(DMP)					[illegible]	---	---									---	---	---											D	
54	Dioxane-1,4	SV		1	12391[illegible]		---	---									---	---	---											B2	
55	Fluorene(PAH)					[illegible]	---	---									---	---	---											D	
56	Pyrene(PAH)					[illegible]	---	---									---	---	---											D	
57	Xylene-M	V				[illegible]	---	---									---	---	F											[illegible]	
58	Xylene-O	V				[illegible]	---	---									---	---	F											[illegible]	

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DRAFT GROUNDWATER CRITERIA TABLE

	COMPOUND	CMPND CLASS	NUM PWS WELLS	COTC IPFC #SITE	CAS #	REG ISSUE	MCL mg/l	SEC MCL mg/l	PROP MCL mg/l	PROP SMCL mg/l	MCLG mg/l	PROP MCLG mg/l	MAC mg/l	SEC MAC mg/l	PUB ED-PP mg/l	GEN USE mg/l	Longterm HA DRA	FIN HA	GEN HA	IARC 1	IARC 2A	GRP 2B	NC SUB	IARC AC	IARC OSHA AC-2E	NC	NTP AC	RC	EPA CAG	CHEM GRP	COM
5	Xylene-P	V				F M.	---	---									---	---	F	---	---	---	---	---	---	---	---	---	---	---	
7																															
8	Antimony	I		3	7440360	L N	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
9	Diquat	P				L N	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
10	Hexachlorocyclopentadiene	SV				L N	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
11	PAHs - Total	SV		5	-	N	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
12	Phthalates	P				N	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
13	Trichlorobenzene-1,2,4	V		1	120821	N,U2	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
14	Ammonia	I				L P	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
15	Bromochloroacetonitrile	SV				L P	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16	Chloropicrin	P				L P	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17	Cryptosporidium	O				P	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
18	FTU	I				P	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
19	Halogenated....nitriles	SV				P	---	---	(Acids,Alcohols,Aldehydes,Ketones)								---	---	---	---	---	---	---	---	---	---	---	---	---	---	
20	Hypochlorite ion	P				L P	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
21	Isophorone	SV		2	78591	L P	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
22	Ozone byproducts	I				L P	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
23	Isopropyltoluene-p	V				U2	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
24	Trichlorobenzene 1,2,3	V				U2	---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
25																															
26	Acetone	V		14	67641		----	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
27	Aliphatic phenols	SV		1			---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
28	Alkylated alkanes/alkenes	SV		3			---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
29	alpha-Chlorotoluene	SV		1	100447		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
30	BHC-a	SV		1	319846		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
31	BHC-B	SV		1	319857		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
32	Biphenyl	SV		1			---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
33	Bis (2-chloroethyl)ether	SV		2	111444		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
34	Bis(2-ethylhexl)Phthalate	SV		9	117817		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
35	Bromomethane	V		1	74839		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
36	Butanol-1	SV		1	71363		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
37	Calcium chloride	I		1	10043524		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
38	Carbon disulfide	I		3	75150		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
39	Chloroaniline-4	SV		2	106478		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
40	Chloroethyl vinyl ether-2	SV		1	1110758		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
41	Chlorpyrifos	P		4	2921882		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
42	cresol-m	SV		1	108394		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
43	cresol-o	SV		4	95487		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
44	cresol-p	SV		2	106445		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
45	Cyclohexane	SV		1	110827		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
46	Cylohexanone	SV		1	108941		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
47	cymene-p	SV		1	99876		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
48	Diethyl-1-Methylcyclohexane-2,4	SV		1	-		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
49	Diethyl-3-Methylcyclohexane-1,2	V		1	-		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
50	Dimethlnonane -3,7	SV		1	-		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
51	Dimethylphenol-2,4	SV		4	105679		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
52	Dimethyl[illegible]hexane-1,3	V		1	-		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
53	Diphenylether	SV		1	101848		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
54	Di-n-butylphthalate	SV		5	84742		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
55	a-Methyl-benzenacetaldehyde	SV		1	-		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
56	Ethyl ether	V		[illegible]	60297		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
57	Ethylacetate	[illegible]			[illegible]		---	---									---	---	---	---	---	---	---	---	---	---	---	---	---	---	
58	Ethyl-2,2 [illegible]cyclohexane-1	[illegible]					---										---	---	---	---	---	---	---	---	---	---	---	---	---	---	

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#	COMPOUND	CMPND CLASS	NUM PWS WELLS	CDT/CPAC #SITE	CAS #	EPA REG 596 F a,e	MCL mg/l	SEC MCL mg/l	PROP MCL mg/l	PROP SMCL mg/l	MCLG mg/l	PROP MCLG mg/l	MAC mg/l	SEC MAC mg/l	FAD FD-PP mg/l	GEN USE mg/l	Longterm NA DRA	FIN NA	GEN NA F	IARC 1	2A	GRP 2B	NC SUB	IARC AC	IARC CIHA AC-2E				EPA CAG	CHEA CAN GRP G	COMMENTS
1																															
2																															
3																															
4																															
5																															
6	Xylene-P	V					---	---																							
7																															
8	Antimony	I		3	7440360	L m	---	---																							
9	Diquat	P				L h	---	---																							
10	Hexachlorocyclopentadiene	SV				L d	---	---																							
11	PAHs - Total	SV		5	-	h	---	---																							
12	Phthalates	P				p	---	---																							
13	Trichlorobenzene-1,2,4	V		1	120821	m,02	---	---																							
14	Ammonia	I				L P	---	---																							
15	Bromochloroacetonitrile	SV				L P	---	---																							
16	Chloropicrin	P				L P	---	---																							
17	Cryptosporidium	O				P	---	---																							
18	FTU	I				P	---	---																							
19	Halogenated....nitriles	SV				P	---	---	(Acids,Alcohols,Aldehydes,Ketones)																						
20	Hypochlorite ion	P				L P	---	---																							
21	Isophorone	SV		2	78591	L P	---	---																							
22	Ozone byproducts	I				L P	---	---																							
23	Isopropyltoluene-p	V				02	---	---																							
24	Trichlorobenzene 1,2,3	V				02	---	---																							
25																															
26	Acetone	V		14	67641		---	---																							
27	Aliphatic phenols	SV		1			---	---																							
28	Alkylated alkanes/alkenes	SV		3			---	---																							
29	alpha-Chlorotoluene	SV		1	100447		---	---																							
30	BHC-a	SV		1	319846		---	---																							
31	BHC-b	SV		1	319857		---	---																							
32	Biphenyl	SV		1			---	---																							
33	Bis (2-chloroethyl)ether	SV		2	111444		---	---																							
34	Bis(2-ethylhexl)Phthalate	SV		8	117817		---	---																							
35	Bromomethane	V		1	74839		---	---																							
36	Butanol-1	SV		1	71363		---	---																							
37	Calcium chloride	I		1	10043524		---	---																							
38	Carbon disulfide	I		3	75150		---	---																							
39	Chloroaniline-4	SV		2	106478		---	---																							
40	Chloroethyl vinyl ether-2	SV		1	1110758		---	---																							
41	Chlorpyrifos	P		4	2921882		---	---																							
42	cresol-m	SV		1	108394		---	---																							
43	cresol-o	SV		4	95487		---	---																							
44	cresol-p	SV		2	106445		---	---																							
45	Cyclohexane	SV		1	110827		---	---																							
46	Cylohexanone	SV		1	108941		---	---																							
47	cymene-p	SV		1	99876		---	---																							
48	Diethyl-1-Methylcyclohexane-2,4	SV		1	-		---	---																							
49	Diethyl-3-Methylcyclohexane-1,2	V		1	-		---	---																							
50	Dimethlnonane -3,7	SV		1	-		---	---																							
51	Dimethylphenol-2,6	SV		4	105679		---	---																							
52	Dimethyltricyclodecane-1,3	V		1	-		---	---																							
53	Diphenylether	SV		1	101848		---	---																							
54	Di-n-butylphthalate	SV		5	84742		---	---																							
55	d-Methyl-benzeneacetaldehyde	SV		1	-		---	---																							
56	Ethyl ether	V		1	60297		---	---																							
	Ethylacetate	SV		1	141786		---	---																							
	[illegible]																														

01-Sep-89 DATE

DRAFT GROUNDWATER CRITERIA TABLE

PAGE

COMPOUND	CMPND CLASS	NON PUB WELLS	CoT/ CPAC NOTE	CAS #	SDWA REG1989	MCL ug/l	SEC MCL ug/l	PROP MCL ug/l	PROP SMCL ug/l	MCLG ug/l	PROP MCLG ug/l	MAC ug/l	SEC MAC ug/l	PUB FD-PR ug/l	GEN USE ug/l	Longterm HA DRA	Longterm HA FIN	Longterm SEN HA	IARC GRP 1	IARC GRP 2A	IARC GRP 2B	HC SUB	IARC AI	IARC OSHA AC-2B	HC	HTP AC	PC	EPA CAG	OHEA CAN GRP	COMMENTS
Hexane n-Hexane?	SV		7	110543		---	---																							
Hexanone-2 (MBK)	SV		1	591786		---	---																							
Isobutyl alcohol	SV		1	78831		---	---																							
Methiocon	P		1	121755		---	---																							
Methanol	SV		1	67561		---	---																							
Methyl Isobutyl Ketone (4,2)	SV		5	108101		---	---																							
Methylcyclohexane	SV		1	108872		---	---																							
Methyldecane-2	SV		1	-		---	---																							
Methyldecane-4	SV		1	-		---	---																							
Methylnaphthalene	SV		4	1321944		---	---																							
Methylnaphthalene-2	SV		2	91576		---	---																							
Methylpropylcyclohexane-1	SV		1	-		---	---																							
Mineral spirits	SV		5	-		---	---																							
Nitrochlorobenzene-o	SV		1	121733		---	---																							
Nitrochlorobenzene-o	SV		1	88733		---	---																							
Nitrochlorobenzene-p	SV		1	100005		---	---																							
Nitrodiphenyl-4	SV		1	92933		---	---																							
Nitrosodiphenylamine-n	SV		3	86306		---	---																							
PAHs - Carcinogenic	SV		5	----------		---	---																							
PAHs - Noncarcinogenic	SV		5	-		---	---																							
Pendimethalin	P		2	40487421		---	---																							
Pentanone-2	SV		1	107879		---	---																							
Phenanthrene(PAH)	SV		1	85018	O/L	---	---																							
Phorate	P		1	298022		---	---																							
Pyrethrin	P		1	8003347		---	---																							
Pyridine	P		1	110861		---	---																							
Quinoline	P		1	10453868		---	---																							
Tetrachloroethane-1,1,2	V		1	79005		---	---																							
Trimethylbenzene	V		1	25551137		---	---																							
Xylenes	P		1	1330207		---	---																							
Acenaphthene					120																									
Acrolein					120																									
Aldicarb phosphide	P			20859738		---	---																							
Aziphos methyl	P			86500		---	---																							
Benzene(a)pyrene					120																									
Benzofluoranthene-3,4					120																									
Benzo(g,h,i)perylene					120																									
Bis(2-chloroethoxy) methane					120																									
Bromophenyl phenyl ether-4					120																									
B-endosulfan-beta					120																									
Captan	P			133062		---	---																							
Chlorfluren ethyl	P			86932376		---	---																							
Chloroacetaldehyde					O/L	---	---																							
Chloronaphthalene-2					120																									
Chlorophenyl phenyl ether-4					120																									
Dantanzide	P			1596845		---	---																							
DDD-4,4' (p,p'-TDE)					120																									
DDE-4,4' (p,p-DDE)					120																									
DDT-4,4'					120																									
Dibenzo(a,h)anthracene					120																									
Dichloropropylene(propene)-1,2					120																									
Dimethoate	P			60515		---	---																							

COMPOUND	CHEMO CLASS	DWH PWS WELLS	CDT/ CPRC DSITE	CAS #	SDWA REG1986	HCL ug/l	SEC HCL ug/l	PROP HCL ug/l	PROP SHCL ug/l	HCLG ug/l	PROP HCLG ug/l	NAC ug/l	SEC NAC ug/l	PUB FD-PR ug/l	GEN HSE ug/l	Longterm HA ORA	FIN	GEN HA	IARC 1	IARC GRP 2A	IARC GRP 2B	IARC SUB	HC IARC AC	IARC OSHA AC-2B	HC	NTP AC	NTP PC	EPA CAG	SHEA CAN GRP	COMMENTS
Dimethylphenol-2,4					129																									
Dinitrophenol-2,4					129																									
Dinitrotoluene-2,6					129																									
Dinitro-o-cresol-4,6					129																									
Di-n-octyl phthalate					129																									
Endosulfan sulfate					129																									
Endrin aldehyde					129																									
EPTC	P			759944		...	...																							
Ethalfluralin	P			55283686		...	...																							
Ethoprop	P			13194844		...	...																							
Fenvalerate	P			51630581		...	...																							
Flocholralin	P			33245395		...	...																							
Fluoranthene					129																									
Fluridone	P			59756		...	...																							
Fog oil					0/	...	...																							
Giardia lamblia					0/P	...	...																							
G-BHC-Delta					129																									
Hypochlorous acid					0/L	...	...																							
Isazophs	P			81335377		...	...																							
Isofenphos	P					...	...																							
Linuron	P			330552		...	...																							
Metolachl	P			51218191		...	...																							
Methiocarb	P			2032657		...	...																							
Methyl bromide	P			74839		...	...																							
Mevinphos	P			7786347		...	...																							
Nitrapyrin	P			1929824		...	...																							
Nitroguanidine					0/	...	...																							
Nitrophenol-2					129																									
Oryzalin	P			19044883		...	...																							
Phosmet	P			732116		...	...																							
Sulfosulfu	P			74051002		...	...																							
Standard plate count					0/P	...	...																							
Thiram	P			137268		...	...																							
Trichloroethanol-2,2,2					0/L	...	...																							
Viruses					0/P	...	...																							
White Phosphores					0/	...	...																							
Zinc chloride					0/	...	...																							

FOOT NOTES:

USEPA
MCL=Maximum Contaminant Level
SEC MCL=Secondary Maximum Contaminant Level
PROP MCL=Proposed Maximum Contaminant Level
PROP SMCL=Secondary Proposed Maximum Contaminant Level
MCLG=Maximum Contaminant Level Goal
PROP MCLG=Proposed Maximum Contaminant Level Goal

ILLINOIS
MAC=Maximum Allowable Concentration
SEC MAC=Secondary Maximum Allowable Concentration
PUB FDPR=Public and Food Processing Standard
GEN USE=General Use Standard
REG =Status of Regulation
SDWA 1986 =Safe Drinking Water Act of 1986

-Health Advisories-
Longterm HA=Long Term Health Advisory
DRFT=Draft Status
FINL=Final Status
GEN-HA=General Health Advisory(Carcinogen Assessment Groups)
IARC HC=International Agency for Research on Cancer,Human Carcinogens(source list 9E)
IARC(GRP 1)=Human Carcinogens
IARC(GRP 2A)=Probable Human Carcinogens
IARC(GRP 2B)=Probable Human Carcinogens
IARC SUB=IARC(Probable)Human Carcinogens Evaluated Subsequent to Supplement 4
IARC AC=IARC Animal Carcinogens,Source list 8G
IARC OSHA AC-2B=IARC Animal Carcinogens (Assigned to IARC Group 2B by OSHA),source list 9F

NTP=National Toxicology Program Annual Report on Carcinogens
NTP HC=NTP Human Carcinogens
NTP AC=NTP Anticipated Human Carcinogens
NTP PC= NTP Proposed Carcinogens

EPA CAG=USEPA Carcinogen Assessment Group

STATUS of REGULATION and SDWA 1986 FOOTNOTES:

L = Listed
P = Proposed
F = Final
U = Contaminants Required to be Regulated Under the SDWA of 1986
P = Priority List of Contaminants That May Have to be Regulated Under the SDWA 1986
U = Unregulated VOCs with Required Monitoring for All Systems
U2 = Unregulated VOCs with Monitoring at State Discretion

COMMENTS FOOTNOTES:

T=Taste & Odor
Aesth=Aesthetic
H=Human Toxin
A=Aquatic Toxin
P=Phytotoxin
C=Possible Carcinogen

COMPOUND CLASSIFICATION FOOTNOTES:

P=Pesticide
I=Inorganic
V=VOC/VOA
SV=Semi-Volatile
O=Other

STATUS of REGULATION FOOTNOTES:

F=Final
D=Draft
L=Listed for Regulation
P=Proposed(Based on 1985 Levels)
O/=Compound Found on the Table of Drinking Water Standards and Health Advisories
129=Compound Found on the List of 129 Toxic Pollutants
O/9=Compound Found on both ODW List and List of 129

CANCER GROUP FOOTNOTES: US EPA Office of Health and Environmental Assessment (OHEA)

Group A=Human Carcinogen
Group B=Probable Human Carcinogen
B1=Limited human evidence but sufficient animal evidence
B2=Sufficient animal evidence but inadequate or no human evidence
Group C=Possible Human Carcinogen
Group D=Not Classified as to Human Carcinogenicity
Group E=Evidence of Noncarcinogenicity for Humans

HEALTH ADVISORY FOOTNOTES:

Y = Health Advisory Does Exist
D = Draft
F = Final

REFERENCE MATERIALS:

Illinois Environmental Protection Agency. Chemical Contaminants Addressed by the COT/CPRC Process. as of 10- 25-88.

Illinois Environmental Protection Agency. Public Water Supply, Groundwater Section. Selected Sample Summary Report. May 13, 1988 (Memorandum from Richard P. Cobb Supervisor, Hydrogeology Unit)

Title of Illinois Rules and Regulations, Title 35: Environmental Protection. Subtitle C: Water Pollution, Chapter 1: Pollution Control Board. January 13, 1988.

State of Illinois Rules and Regulations, Title 35: Environmental Protection, Subtitle F: Public Water Supplies, Chapter II: Environmental Protection Agency, Parts 651-656 Technical Policy Statements. November 1, 1982.

State of Illinois Rules and Regulations, Title 35: Environmental Protection, Subtitle F: Public Water Supplies, Chapter I: Pollution Control Board. December 1, 1982.

International Agency for Research on Cancer. (IARC) Source List 8E IARC Human Carcinogens

---------- Source List 86, IARC Animal Carcinogens

---------- Source List 9F, IARC Animal Carcinogens (Assigned to IARC Group 2B by OSHA)

National Toxicology Program. (NTP) Fourth Anual Report on Carcinogens. Source List 9C, NTP Annual Report on Carcinogens, Triangle Park, North Carolina

United States Environmental Protection Agency Carcinogen Assesment Group. (CAG) Source List 1B

United States Environmental Protection Agency Status of New Regulations and Guidance, October 1988

United States Environmental Protection Agency Office of Drinking Water. Table of Drinking Water Standards and Health Advisories. Washington D.C. December 5, 1988(Memorandum from Richard J. Zdanowicz, Acting Chief Drinking Section US EPA Region V)

United States Environmental Protection Agency Office of Drinking Water, Criteria and Standards Division. Fact Sheet - Drinking Water Regulations Under The Safe Drinking Water Act. Washington D.C., October, 1988.

United States Environmental Protection Agency. National Primary Drinking Water Regulations

United States Environmental Protection Agency. National Secondary Drinking Water Regulations

Health Advisories.....

GROUNDWATER STANDARDS PROCESS PESTICIDE EVALUATION (Revision 3 - 12/23/88).... A.G. Taylor

United States Environmental Protection Agency,Table of Drinking Water Standards and Health Advisories

United States Environmental Protection Agency,Recommended List of 129 Toxic Pollutants (Revised April,1977)

E X H I B I T 13

GROUNDWATER ADVISORY COUNCIL
January 24, 1989

The GAC meeting was held at Springbrook Water Reclamation Center for the City of Naperville. Mr. Al Panek conducted tours of their facility.

The GAC meeting was called to order at 9:40 a.m. at the Springbrook facility; the following were in attendance:

Robert Clarke	IL Environmental Protection Agency
Scott Phillips	IL Environmental Protection Agency
Dick Berg	IL State Geological Survey
Roger Kanerva	IL Environmental Protection Agency
Allen Panek	City of Naperville
Michael C. Roy/for John Baker	WMI
Mel Dahl	City of Elgin
Cathy Barnard	NALCO Chemical
John Pitz	Water Well Contractors
Jackie Bruemmer	SW IL Planning Commission
Harold Reetz	Potash & Phosphate Institute
Joanna Hoelscher	Citizens for Better Environment
Jerry Paulson	McHenry Co. Defenders
Julene Perbohner	IL Pollution Control Board

Chairman Dahl opened the meeting by discussing the December 1-2, 1988 meeting minutes. Ms. Jackie Bruemmer made a motion to accept the minutes, Mr. Harold Reetz seconded, and the motion carried unanimously. Mr. Paulson suggested that the agenda be modified to allow discussion of the Agricultural containment rules. Chairman Dahl noted the request and indicated these will be discussed concurrent with the Technical Regulations.

Technology Regulations Discussion

Mr. Roger Kanerva presented the GAC with a Draft of Part 615 and 616 regulations regarding existing/new activities within a setback zone or regulated recharge area. Roger indicated that the regulations would be filed during mid February. Scott Phillips (IEPA attorney) presented a detailed discussion of Parts 615 and 616. Comments and discussion followed:

J. Paulson questioned "point of compliance" meant the aquifer or the groundwater below a unit. It was recognized that the definition closely followed federal criteria and may need to be changed to list groundwater to be consistent with the IGPA.

J. Fitz noted that use of a potable well as an existing activity monitoring well may not necessarily adequately monitor the unit. However, Roger indicated that its purpose was to monitor the affected well which caused the activity to be regulated as an existing one.

H. Reetz noted that the regs need to clearly state that if an Ag-chem facility only handles 3 chemical groups, one doesn't really need screening for the 5 minimum groups.

C. Barnard questioned the rationale of requiring monitoring for all parameters having groundwater standards if they are not handled at the site. The expense to analyze these could be high.

J. Paulson suggested that the Agency be notified if a leak is detected in a surface impoundment.

R. Kanerva discussed the concept of EPA endorsement of DOA permits of ag-chem facilities in lieu of both DOA and EPA issuing separate permits. Although this would require amendment of the Environmental Protection Act, an endorsement process could also allow EPA enforcement after notice to DOA.

GAC requested an updated draft of the DOA rules.

J. Paulson questioned the validity of not phasing out existing Ag-chem activities in the minimum zone consistent with the other activity phase-outs.

C. Barnard suggested that the rules allow for periodic updates of background to accommodate material variations, etc.

In summary, Roger Kanerva indicated the discussion of this proposal was to provide for interactive involvement. The Agency needs comments from the GAC by February 3-4, 1989 if more concerns develop beyond the input received at this meeting. Roger indicated that he hopes to provide copies of our Pollution Control Board submission but will discuss this with Director Killian since we normally allow the PCB to distribute proposals.

Cathy Barnard will get a copy to the Illinois Petroleum Council for review.

GROUNDWATER STANDARDS DEVELOPMENT

R. Kanerva announced the formation of a Technical Standards Team, chaired by the Agency to assist in developing the standards. This Team met on January 11, 1989 R. Clarke (EPA) is drafting a "Discussion Document" to be released at the end of February. This will focus on five key elements (classification, non-degradation, numeric limits, narrative procedures, and applicability aspects) and became the basis of an Agency sponsored Regulatory Development Session in March, 1989. The public input will be made by three workshops in April. The draft standards proposal will be officially submitted to the ICCG and GAC in July and ready for filing with the PCB in August.

The GAC proceeded to discuss the Issues/Options.

The general responses regarding issue one focused upon the need to prioritize health effects and help define which parameters to regulate. It was pointed out that this submission is only the start of a continuing process.

Responses to issue two emphasized that differences in surface and groundwaters must be fully considered.

Issues three, four and five are interactive and must be considered together.

J. Hoelscher stated that non-degradation is the goal. If numeric limits are not available, zero is preferred. If standards are set, this becomes an allowance to pollute groundwater up to the standard.

R. Kanerva discussed alternative approaches to the zero base such as a mixtures rule, a narrative process, or use of the background concept to trigger action.

Discussion on these topics continued. Classification, using USEPA classes was considered. However, several persons recommended a four level classification of drinking water, general resource water, naturally affected waters, and remedial or clean-up water designations.

In regard to issue six, most suggested that we check specific states on a selected basis. The hybrid approach appeared reasonable for issue seven.

GROUNDWATER FUNDING

R. Kanerva discussed the funding issues and mentioned that DENR and the Agency were evaluating their funding needs and research agenda. Considerable effort is being made to develop a reasonable base line research, monitoring, and implementation program. Roger will keep the GAC posted on this important task. General discussion of possible GAC role followed.

Dick Berg offered to present the GAC with the priority recharge area mapping.

J. Paulson requested that the GAC be informed of the USEPA National Pesticide Strategy activity. He will coordinate with R. Clarke to make information available and discuss at the April meeting.

The next meeting was tentatively scheduled for April 21, 1989 in Springfield.

Chairman Dahl adjourned the meeting.

E X H I B I T 14

INTERAGENCY COORDINATING COMMITTEE ON GROUNDWATER

March 7, 1989

The session was called to order at 9:10 a.m. at the Illinois Environmental Protection Agency. The following were:

Present:

Roger Kanerva	Illinois Environmental Protection Agency
Roger Selburg	Illinois Environmental Protection Agency
Robert Clarke	Illinois Environmental Protection Agency
Gary Clark	Illinois Department of Transportation
John Washburn	Illinois Department of Transportation
Jack Moore	Illinois State Fire Marshal
Karen Miller	Illinois Department of Energy & Natural Resources
David Baker	Illinois Department of Energy & Natural Resources
Bob Schwarberg	Illinois Department of Agriculture
Stephen Nussbaum	Illinois Department of Mines and Minerals
Keros Cartright	Illinois State Geologic Survey
Dick Berg	Illinois State Geologic Survey
John Schaefer	Illinois State Water Survey
Dick Schicht	Illinois State Water Survey
Mitch Beaver	Illinois Department of Energy & Natural Resources
Scott Phillips	Illinois Environmental Protection Agency
Dave Antonacci	Illinois Department of Public Health
Ken Hlinka	Illinois State Water Survey
Don Keefer	Illinois State Geologic Survey
Rick Cobb	Illinois Environmental Protection Agency
Carl Kamp	Illinois Environmental Protection Agency
Lynn Dunaway	Illinois Environmental Protection Agency
Bill Buscher	Illinois Environmental Protection Agency

Not Present:

Gretchen Bonfert	Governor's Office

The meeting was chaired by Roger Kanerva (IEPA). Jack Moore (ISFM) moved for approval of the minutes from the January 10, 1989 meeting. Bob Schwarberg (IDOA) seconded the motion and the minutes were unanimously approved.

Department of Agriculture Operational and Containment Rule Update

Roger Kanerva (IEPA) stated that the new proposed agricultural chemical operation and containment regulation was a very important milestone. Roger commended Bob Schwarberg and the Department of Agriculture for their effort in prescribing these regulations which put Illinois in the fore front of other states. Roger stated that an agreement between the Director of Agriculture and the Illinois Environmental Protection Agency was signed. This agreement will significantly enhance coordination between IEPA and IDOA in relation to permit issuance, field activities/investigation, and enforcement.

Bob Schwarberg (DOA) stated that the official comment period on these proposed rules will end on March 20th. All written comments should be directed to the Illinois Department of Agriculture. The Joint Committee on Administrative Rules should have a finalized rule by June 1, 1989. Bob stated that in fairness to the Agrichemical business that this was not an easy issue to come to terms on, but he said that he thinks the regulations are implementable and will benefit the industry and the environment in the long run.

Groundwater Technical Rules 615 and 616 Update

Roger Kanerva (IEPA) stated that the rules are in final form and are currently being reviewed by the Director. After the Director completes his review, the rules will be sent to the Pollution Control Board.

Jack Moore (ISFM) asked if copies of those proposed rules were available. Roger Kanerva (IEPA) replied that yes they would be available after the Director's approval.

Discussion Document for Comprehensive Groundwater Quality Standards

Roger Kanerva (IEPA) stated that the draft Discussion Document is still in rough draft form, but most of the concepts are established. Roger stated that the Discussion Document builds on the Issues and Options Paper and is composed of four major sections:

- classification
- nondegradation
- numerical/narrative criteria
- applicability

Roger stated that the discussion document is written in a narrative fashion, and not in the form of a rule.

Classification Systems-Roger Kanerva stated that there are two classification systems discussed. In the first system, potable resource groundwater should be able to be used directly or after conventional water supply industry treatment. Potable resource groundwater consists of the area associated with the cone of depression around an existing public water supply or private well. Future issues are addressed through a petition process. Local officials can petition to expand their zone of protection. The term potable was used because that's how it's referenced in the IGPA.

Roger (IEPA) stated that most other groundwaters are classified as general use. Where there is not a contamination impact, or the groundwater is not classified as potable resource, then it's classified as general use. As time passes it is anticipated or it's the goal that general use groundwaters will be phased up to the potable resource class.

Roger (IEPA) described remedial groundwaters as groundwater that was temporarily contaminated. The time frame associated with short v.s. long term is arbitrary. The point is that we're making an effort to begin managing contaminated groundwaters, and to at least recognize that it's not written off.

Roger stated that the naturally limited class is groundwaters that contains greater than 10,000 parts per million of total dissolved solids. This was a classification component proposed by USEPA and embodied in their programs..

Roger stated that the alternative classification system would condense groundwaters into two classes. However, the four-class system comes out as more meaningful in practical, real life applications.

Nondegradation-Roger Kanerva (IEPA) stated that the nondegradation provision is a tiered system. The general approach is to determine background and then to monitor for statistically significant increases above background. In potable groundwater, this would trigger administrative action. Such increases should not result in the downgrading of a designated use under any circumstances.

Numerical/Narrative Criteria-Roger Kanerva (IEPA) stated that the Interagency Groundwater Technical Team has worked very hard to develop criteria used in this document. As a first step, the Team compiled a master list of almost 400 compounds that were known to occur in Illinois' groundwater or suspected as possible contaminants in groundwaters on a national basis. Roger stated that under the general resource criteria we were trying to incorporate an innovative approach to account for natural variability. We are trying to develop an indicator approach. Roger stated that he wasn't pleased with the name, total toxic metals, but we ran out of time. The totals were derived from public water well data using the sum of the 95th percentile level of occurrence. Roger stated that in the general resource class of groundwater he wasn't concerned about individual heavy metal parameters, and didn't want to be spending inordinate time on individual parameter violations due to minor fluctuations. The totals criteria could be used as a measure to determine when degradation was occurring in general. The compounds with individual criteria could be based upon irrigation or livestock water quality numbers.

Roger stated that for organics we were proposing an indicator only to determine if degradation is occurring. These chemicals are out there already and we are simply trying to recognize this situation. In addition, we're trying to recognize the fact that they are of no quantifiable health significance in the minute parts per billion range.

Roger Kanerva (IEPA) stated that with the potable resource class that we're going to use all the numbers that are available (e.g., MCL, proposed MCL, etc.) to develop individual criteria. The technical team has sorted the list down to about 76 compounds. Roger stated that this was a very valid number of substances to establish criteria for in terms of an aggressive program. Where we do not have individual numbers we intend to use the narrative process listed as Attachment B. Roger stated that we ran out of time to fully develop the applicability section. The applicability section included here is a very rough draft. We need to expand on how standards apply around setbacks and tie that back in with the technology regulations.

Roger Kanerva strongly encouraged the ICCG members to input their ideas on the Discussion Document. Roger asked that all comments be sent to Bob Clarke by the end of next week.

Bob Schwarberg (DOA) stated that the direction of the Discussion Document was no surprise to him. Bob said that it's building upon the Issues and Options Paper and is in line with the general position held by the GAC at the policy forum.

Recharge Area Mapping

Dick Berg (ISGS) stated that they had completed the priority area recharge mapping required by the IGPA. The maps were based upon recharge with respect to principle aquifers.

Principle aquifers are defined here as yielding 70 gallons per minute (gpm) or more than 100,000 gallons per day (gpd).

Dick Berg stated that aquifer sensitivity was the surrogate used to determine recharge.

John Schaefer (ISWS) stated that the water survey prepared maps that took into account cultural or anthropogenic activities. John stated that the surrogate for use was based upon the depth and distribution of public water supply wells.

John Schaefer (ISWS) stated that the activity monitoring maps are qualitative and not quantitative in nature. Therefore, that's why they were not combined with any of the other maps which are quantitative.

Keros Cartright (ISGS) stated that the survey is trying to look at ways to integrate the agricultural usage map with the appropriate recharge map.

Dave Baker (DENR) asked if the use map overlay changed the priority of the recharge area map.

John Schaefer (ISWS) replied that they seemed to correlate.

Roger Selburg (IEPA) asked if any industrial activities were included on the anthropogenic map.

John Schaefer (ISWS) replied yes that was included as a category of special waste generators.

Roger Kanerva (IEPA) stated that the definition of special waste covered a wide range of things, and that it should be referred to with caution.

Bob Clarke (IEPA) asked if these maps were only applicable to major aquifers.

Keros Cartright (ISGS) replied that major aquifers are given some priority. However, the minor aquifers are not eliminated.

Bob Clarke (IEPA) asked if there were any regional areas that should be addressed first.

Dick Berg (ISGS) replied yes that the following were a priority: Winnebago, McHenry, Kanakakee, and Kane County. Dick stated that by the end of the month the survey should have a printout which lists the priority percentage on a county level basis.

Roger Kanerva (IEPA) stated that the resource-based map would be much more defensible than the waste-related map during a regulatory rule proceeding.

Roger Kanerva stated that we have considerable flexibility in establishing the regional planning committee. Roger stated that a modest approach to designating these committees would probably work better. We should designate 2 or 3 areas to begin with because a conservative approach would be more defensible.

Dick Berg (ISGS) stated that the maps presented today were for the ICCG. He said that they would present 3 additional sets within a week.

Jack Moore (ISFM) stated that the maps would be useful to the underground storage program.

Education Subcommittee Update

Mitch Beaver (ENR) stated that the subcommittee met on January 23. Mitch stated that the February issue of the Groundwater Gazette was completed and sent out. He also stated that the groundwater video presentation they're preparing should be completed by May. Mitch stated that the video script would be completed by March 24. Mitch asked that all edits be made by March 30, 1989.

Mitch Beaver stated May is slated as groundwater protection month and the focus is on sealing abandoned wells.

Roger Kanerva (IEPA) asked if Harry Hendrickson would work with Bob Clarke on hosting the Groundwater Quality Workshops in April.

Mitch Beaver (ENR) stated that he would have Harry contact Bob Clarke.

Dave Baker (ENR) asked if there was still going to be an interest group meeting.

Roger Kanerva replied yes but we're not sure of the dates yet.

Monitoring Well Update

Dave Antonacci (IDPH) stated that the IGPA transferred authority from Mines and Minerals to the Department of Public Health. The authority includes abandonment requirements, and code for the construction of monitoring wells. However, it didn't include abandonment requirements for monitoring wells. Dave stated that he estimated that there were 30-30,000 of these types of wells abandoned in Illinois.

Dave Antonacci (IDPH) stated that IEPA doesn't want the permit information, but it should be sent to the surveys.

Dave Antonacci stated that some minimal rules or requirements for plugging abandoned monitor wells is needed. The Agency's Division of Land Pollution Control has offered some ideas on the proposed rule.

Roger Kanerva (IEPA) stated that the Agency doesn't issue monitor well permits, they issue a permit for a storage or disposal unit that may include monitor wells as part of the design.

Jack Moore (ISFM) stated that a lot of people are using USEPA guidelines as the bible for monitoring wells.

Roger Kanerva (IEPA) stated that there should be some basis required.

Jack Moore (ISFM) stated that a leak detection system being permitted may include monitoring wells, but the wells themselves are not being permitted.

Roger Kanerva (IEPA) suggested that the education subcommittee prepare a document describing the issues discussed above. This information could improve the proposed regulation.

Groundwater Quantity Legislation Update

Gary Clark (IDOT) stated that two public meetings were conducted and input was gathered from those meetings. A draft legislative initiative has been prepared and March 10, 1989 is the deadline for all legislative initiative comments.

Next Meeting

The next ICCG meeting will be held on May 8, 1989 at 1340 N. 9th Street, Springfield.

RPC:RPC:plc

E X H I B I T 15

Groundwater Advisory Council
April 21, 1989

The meeting was called to order at 10:15 a.m. at the Illinois Environmental Protection Agency, the following were in attendance:

Roger Kanerva	Illinois Environmental Protection Agency
Jackie Bruemmer	GAC/Southern Illinois Planning Commission
Mel Dahl	GAC/City of Elgin
Allen Panek	GAC/City of Naperville, Water Utility
John Baker	GAC/Waste Management, Inc.
Jerry Paulson	GAC/McHenry County Defenders
Bob Schwarberg	Illinois Department of Agriculture
Dick Berg	Illinois State Geologic Survey
Scott Phillips	Illinois Environmental Protection Agency
Joanna Hoelscher	Citizens For a Better Environment
Virginia Scott	Illinois Environmental Council
Harold Reetz	GAC/Potash and Phosphate Institute/Illinois Fertilizer and Chemical Association
Cathy Barnard	GAC/Chemical Industries Council
Kevin Greene	Citizens For a Better Environment
Bob Clarke	Illinois Environmental Protection Agency
Rick Cobb	Illinois Environmental Protection Agency

The meeting was chaired by Mel Dahl. Jerry Paulson moved for approval of the minutes from January 24, 1989 meeting. Jackie Bruemmer seconded the motion and the minutes were unanimously approved.

Discussion Document on Comprehensive Groundwater Quality Standards

Roger Kanerva stated that the Discussion Document narrows the Issues/Options Paper, and is more specific in the recommended approach. There are still a lot of details which need to be added, but he felt that it was important to propose a specific stance for discussion purposes on the four following issues:

- Classification
- Nondegradation
- Numerical/Narrative Criteria
- Applicability

Roger stated that the Agency is not set on all of these issues, but we're evaluating ideas. Standards for the surface water program have become complicated primarily because of background levels of naturally occurring compounds cause violations. The compliance violations are occurring as a result of natural variations within a watershed. This is the primary reason we are proposing a totals approach for trace inorganics in groundwater. The presence of organics in groundwater is a controversial issue. It is a fact that we have been finding these organic compounds in many places at low levels. We do not want to propose standards that will automatically put a lot of groundwaters out of compliance. Therefore, the total organics cap was proposed to identify those groundwaters having significant problems from those with minute levels.

CLASSIFICATION - Roger Kanerva stated that [illegible] principles contained in the IGPA. Potable use standards will extend out on the land surface from the wellhead to a distance of 2,500 feet, and extend vertically into the subsurface aquifer material. Roger stated that all groundwaters not designated as potable use are classified as general use. The goal of the proposal is that the potable use classification will be incrementally expanded over time as detailed hydrogeologic information is acquired.

Joanna Hoelscher asked where the language on the lateral area of influence came from. Roger Kanerva replied that the language came directly out of Section 14.2 of the Act, and is also found in the adopted procedural rules that a community uses to establish a maximum setback zone.

Joanna Hoelscher stated that the area of influence appears to be the same as the draw down associated with the cone of depression around a well. Joanna asked if this area could be expanded over time. Roger Kanerva replied yes that the area could be expanded over time. Roger stated that the 2,500 feet is an arbitrary distance but it is referred to in the IGPA.

Jackie Bruemmer asked if the well site surveys were inventorying out to 2,500 feet. Roger Kanerva replied no, that the statute requires that the area surveyed include a distance out to 1,000 feet.

Jerry Paulson asked if the designation process proposed in Section 1(c) of the Discussion Document is the same as Regulated Recharge Petition Process. Roger Kanerva stated no, not necessarily. The Pollution Control Board can do a regulated recharge area regulation, or a community could propose something totally different than what the Board has done. Jerry Paulson stated that he was still confused about the relationship between the groundwater standards designation process, and the regulated recharge area program. Roger Kanerva stated that the groundwater classification proposal defines areas to which different groundwater standards or criteria apply. Its up to the communities to expand upon this classification. Mel Dahl asked if the Pollution Control Board could designate certain areas as regulated recharge areas by petition from a community outside of a community's jurisdiction. Roger Kanerva replied yes provided that detailed proof is supplied with their proposal.

Roger Kanerva stated that recharge area regulations could be totally different than what the Agency is proposing here with groundwater standards. Jerry Paulson asked if the Agency will petition the Board to designate recharge areas. Roger Kanerva replied that we could petition to the Board.

Jerry Paulson, stated that the problem that he sees with this approach is that it doesn't include private wells and potential groundwater useage. Roger Kanerva stated that the Agency would not be able to provide the burden of proof required to do what was suggested by Jerry.

Joanna Haelsbag ... necessary to expand upon the potable use designation. Joanna stated that we could just go with the water quality information which we have. Roger Kanerva stated that we don't have water quality data available for every part of the State. Roger stated that even after ENR completes their detailed monitoring study that we still will not have enough to make that sort of proposal.

Jerry Paulson stated that he did not see in the IGPA where it says that we'll use setback zones to classify groundwater. Jerry asked why can't we propose everything as potable use and ask that people prove otherwise. Roger Kanerva replied that the due process system which we have in Illinois places the burden of proof on the Agency. Roger stated that if we can't prove what we're proposing is justifiable, and therefore defensible, we need to use some kind of procedure or process to build upon a base like the setback zones.

John Baker asked if we were proposing the same thing as the Safe Drinking Water Act (SDWA). Roger Kanerva replied no, those are not automatically the same thing. The SDWA standards are not groundwater standards, they are drinking water quality standards.

Kevin Greene stated that he would like to see the Agency take a stronger stance. Roger Kanerva stated that he felt this was a modest and reasonable approach.

Jerry Paulson stated that he didn't think this was the most expeditious way to designate potable uses.

Jackie Buremmer stated that this proposal will at least get things moving in the right direction.

Allen Panek stated that he agrees with this proposal, and asked what else can we get through other than what is proposed here. He stated that the opportunity is provided here to expand the areas, and that seems to be a reasonable approach.

John Baker stated that there really wasn't much difference between potable use and general use criteria. The general use criteria are pretty strict.

Allen Panek asked that the term conventional treatment as it's used in association with the potable use classification be clearly defined.

Mel Dahl stated that we will at least have something on the books and that will begin the public education process.

Jerry Paulson asked what kind of proof would be necessary to petition the Board under 1(c) to designate groundwater as potable use.

Roger Kanerva stated the community well site survey process which the Agency is conducting is acquiring a lot of that information. Roger stated that the information gathered through the survey process plus the work done through regional planning committees would probably provide information to assist in proposing a Regulated Recharge Area.

have been completed. Roger Kanerva replied that we haven't completed enough of the surveys at this time. Roger Kanerva stated that we could consider an expedited process as we continued to work on the proposal.

John Baker stated that in California they used a sustainable yield of 200 gpm to classify groundwater, and they proposed a TDS concentration of 3,000 parts per million to be classified as naturally limited.

NONDEGRADATION - Roger Kanerva stated that nondegradation would apply across the state but would vary according to the type of use class. For the potable class, the following would apply:

1) If we detect a compound it would trigger monitoring and;

2) If a practical quantification level (PQL) is exceeded it would trigger a regulatory action.

Jerry Paulson asked what was the difference between a detection level (MDL) and a PQL.

John Baker replied that a method detection level (MDL) is an analytical equipment standard. A (PQL) is what an average lab can quantify within a 95 percent confidence interval on a day-to-day basis.

Harold Reetz asked what would happen if agricultural land has a problem. Roger Kanerva replied that comes back to the policy of monitoring against background. Harold Reetz asked does that mean that sampling must be done. Roger Kanerva replied yes.

Jerry Paulson asked what do you use to trigger a downgraded use under the non-potable classification (general resource groundwater). Roger Kanerva replied that you would use the general resource criteria.

Allen Panek asked what needs to be done to go to a lower groundwater class designation. Roger replied that you would have to petition the board. Roger Kanerva stated that the policy does not allow downgrading of a designated use. Therefore, the quality of remedial action groundwater cannot degrade below the current existing conditions. A voluntary cleanup would use general resource criteria for cleanup.

Cathy Barnard asked if Sauget would represent an example of a voluntary cleanup. Roger Kanerva stated that we don't want to write off any groundwater. Currently, the Agency has limited authority at voluntary sites.

Cathy Barnard asked if an entire industrial area could petition for a remedial groundwater classification. Roger Kanerva replied they could if they meet the burden of proof.

John Baker stated that just because a site is listed on the NPL it doesn't mean that is contaminated. Roger Kanerva replied that if a site is scored under the hazardous ranking system, there is groundwater contamination. Roger stated that it becomes another issue if a public water well is effected or contamination is offsite.

Kevin Greene asked why [illegible] the board. Roger Kanerva stated that a variance still requires compliance. Jerry Paulson asked what is the trigger for general resource groundwater degradation.

Roger Kanerva replied that for potable resource groundwater we've generally applied a drinking water MCL in-situ. In trying to develop criteria for general resource groundwater there is not a surface water analog to use. Surface water general use criteria is based upon aquatic life toxicity, but that cannot be used for general resource groundwater because there is no aquatic life. Therefore, the level established for general resource groundwater should include an indicator to determine if pollution is occurring, and should recognize that there is a difference between uses.

Roger Kanerva stated that the Agency was preparing background documentation, which includes toxic effects, for every substance we are proposing criteria for. Numbers are not available for some of the compounds and we will try to develop numbers for those. If the Agency cannot justify a number for a compound we will remove the compound from the list.

Roger stated that the general organics indicator was derived by the following factors: when contamination is found there is usually more than one contaminant present; second the practical quantification (PQL) level for most carcinogenic organics is 5 ug/l; and third we multiplied the PQL by a factor of 5 resulting in 25 ug/l. Where the Agency has detected a level of organics at 25 ug/l, we are very confident that contamination is occurring.

John Baker stated that he felt that was a good approach for general resource groundwater. The levels established are all good indicators of when problems are truely occurring.

Kevin Greene asked what the Agency would like to propose. Roger Kanerva replied we would like to be able to designate more groundwater as potable resource. Kevin Greene asked if there was any way to propose an expedited designation process. Roger Kanerva replied that this has happened in the past. However, everybody in the process must agree, (e.g., the CSO exception process).

Roger stated that Monday April 24 the Agency would be sponsoring a regulatory development session followed by three public workshops on the Groundwater Quality Standards Proposal.

Bob Clarke encouraged everyone to attend those meetings.

State Pesticide Plan Update

Jerry Paulson stated that the final version of the USEPA strategy was waiting to be signed. Jerry stated that USEPA Aldicarb Plan would cancel the use of aldicarb if there was not a State Plan in place. In addition, USEPA could impose other restrictions on a county or regional basis. Jerry stated that the ICCG has designated a subcommittee to deal with these issues.

Bob Schwarburg stated that USEPA [illegible] national pesticides in groundwater workshops, 23 states attended the workshop. Bob stated that the summary put great emphasis on base acreage.

Bob Schwarburg stated that the State Plan on pesticides should be finalized in June. Bob stated that it was very inter-related with groundwater quality standards being in place. For further detail, (see Attachment I).

Bob Schwarberg stated that there was enough funding available to start the pilot study on pesticide monitoring for high, medium, and low priority areas.

Bob Schwarberg stated that the agrichemical containment rules are in place and that other preventative measures should be developed on a case-by-case basis. The State does not want to resort to banning a chemical we would prefer alternate approaches first, for example, terracing, alternating crops, etc.

Bob stated that a fund has been established for the Superfund Program to remediate public water supply wells contaminated by pesticides, but there is no funding source available for private well remediation.

Bob Clarke stated that the Agency has invested half a million dollars in monitoring public water supply wells for pesticides, but were missing the integral data from private wells.

Bob Schwarberg stated that the pilot network data should provide information needed to determine the next strategic step.

Recharge Area Mapping Update

Dick Berg stated that the Appropriate Recharge Area Map for Illinois is completed. Dick stated that the following variables were taken into consideration in developing this map:

- susceptibility to contamination map;
- public water wells to a depth of 300 feet and less;
- the combination of the two variables above, and an aquifer producing more than 70 gallons per minute (gpm) defined a major aquifer at depth (MAQ); and
- Soil infiltration rates of high, moderate, and low.

Dick stated that the survey attempted to also incorporate slope data into this model. However, that data was not available.

Dick Berg stated that an appropriate recharge area is defined where an aquifer underlies a recharge area. Dick also stated that the 300 foot depth approximately represented a 500 year groundwater travel time. The map will be printed by IEPA.

Chairperson Re-election

Jackie Bruemmer nominated Mel Dahl for re-election as GAC chairman. That motion was seconded by John Baker and the Council unanimously approved the nomination.

Technical Standards Update

Scott Philips stated that the Pollution Control Board Hearings are scheduled for May 16 and 17 in Springfield and June 1 and 2, in Chicago. Scott stated that the Agency will be providing testimony at those hearings. So far the Agency has only received two comments: one from Kathy Hodge on making an appearance at the hearing, and one from ENR commenting on the EcSIS.

Next Meeting

The next Council meeting is scheduled for Friday, September 15, 1989 at 9:30 a.m. at IEPA, 1340 North 9th Street, Springfield.

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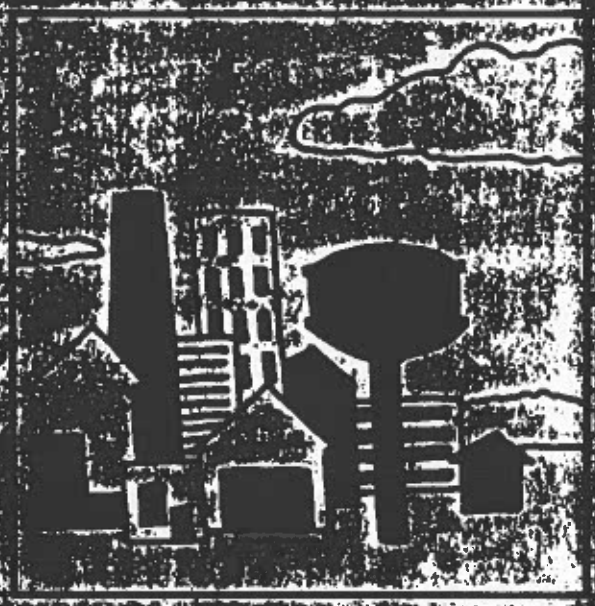
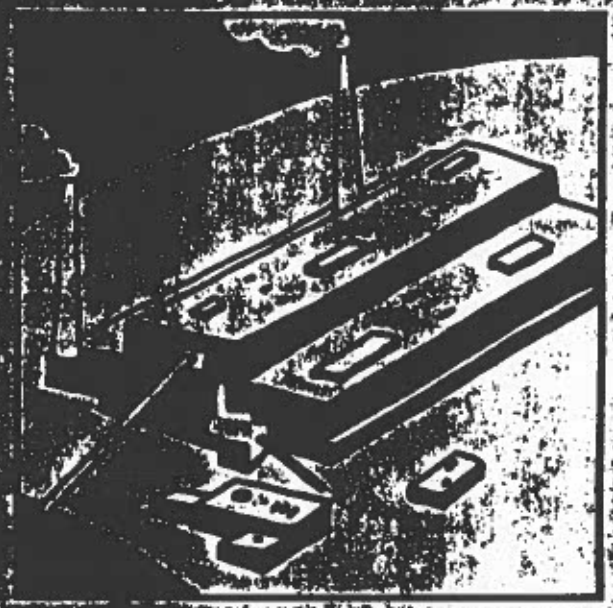
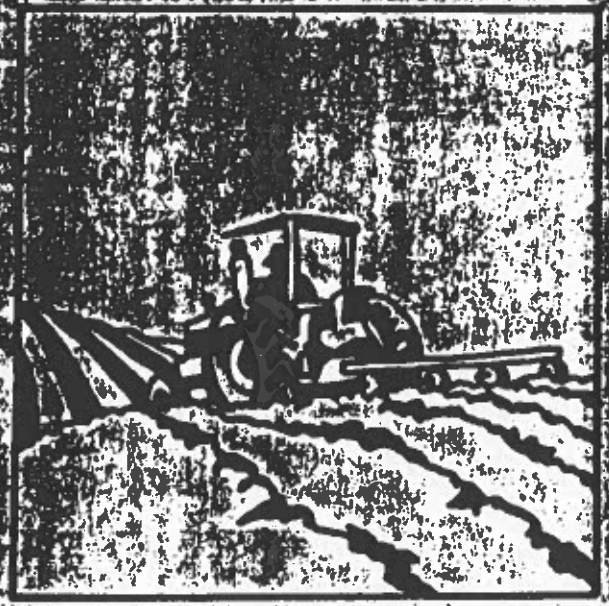
E X H I B I T 16

Discussion Document

Comprehensive Groundwater Quality Standards







Prepared by
Interagency Coordinating
Committee on Grou

Discussion Document

for

Comprehensive Groundwater Quality Standards

Prepared by

Interagency Coordinating Committee
on Groundwater

March, 1989

DISCUSSION DOCUMENT
GROUNDWATER QUALITY STANDARDS

This document is intended to further facilitate the process of establishing comprehensive groundwater quality standards in response to the Illinois Groundwater Protection Act of 1987 (IPGA). An Issues/Options Paper, dated December 1988, presented an overall approach and policy framework for such standards considering seven key issues and possible options. That paper presented a wide range of regulatory options. These issues and options were extensively discussed at the Groundwater Protection Policy Forum sponsored by the Groundwater Advisory Council on December 1, 1988. In the interest of maintaining progress in developing a rulemaking proposal which reflects informed input, we have further refined and narrowed the policy and technical options into four critical components, as follows:

- Classification System
- Nondegradation Procedures
- Numerical/Narrative Criteria
- Applicability Aspects

These components can form the basis for an integrated and functional standards proposal. Using these components, this document presents a more focused and cohesive framework for the groundwater standards. In this manner, it is hoped that this document will help achieve orderly development of the final regulatory proposal to be filed by the Illinois EPA with the Pollution Control Board by July, 1989.

Groundwater quality standards can serve multiple purposes. Standards can define water quality goals and set a regulatory basis for control of pollution sources. Classification procedures can be used to group either similar waters, areas, or uses based upon common properties; that is, classification can be resource based (i.e., aquifer classes) or use based (i.e., drinking water use, etc.). Classification can also provide a systematic management approach to help achieve intended environmental and socio-economic purposes. Simply put, it is a management tool and not an end in itself.

The principal value of a classification system, therefore, lies in its practical uses. It can help distinguish between different parts of the State having different groundwater problems or concerns. As has been well documented, the hydrology and land uses in the northern part of Illinois differ from the southern portion. Thus, a system could categorize water according to major intended uses. Classification by use provides the ability to manage and protect the resource according to existing and expected uses and could provide a combination of unique water quality protection and management options for each class. In addition, this also provides the opportunity to focus limited resources on classes of groundwater which warrant special protection or management.

Classification according to aquifer boundaries has been shown to be difficult largely because of linking "cross-connections", the inherent difficulty of "observing" them, the lack of specific aquifer boundaries, and the variability of water quality and other characteristics within an aquifer.

sufficient time and resources, a use classification approach could likely be enhanced by incorporation of aquifer-specific characterization. However, the concept of classification of groundwater according to current and future use appears at present as a viable starting point from both historic and practical perspectives.

Classification of groundwater, then, can take several forms and if properly designed and implemented can serve many purposes. The primary goal, however, is to provide an effective and reasonable procedure for establishing comprehensive water quality standards which protect specifically designated groundwaters. Given this goal, a formal process is needed to identify groundwater quality protection classes. The classification procedures described below include two alternatives which would meet this goal. Further consideration and discussion of these or other alternatives is invited.

System A (Four Classes)

Section 1. Classes of Groundwater

Class I: Potable Resource Groundwater - Groundwaters capable of being used directly for potable use with no treatment or with conventional treatment to assure compliance with health-based concerns.

I(A) Groundwaters associated with any existing potable water supply well, other than a community water supply well, and the applicable setback zone or area of influence under normal operating condition, whichever is greater;

I(B) Groundwaters associated with any existing community water supply well and the area of influence under normal operating conditions but not less than a lateral distance of 2,500 feet from the wellhead; and

I(C) Other groundwaters designated by the Pollution Control Board as capable of potable uses pursuant to specified petition procedures.

Class II: General Resource Groundwater - Groundwaters capable of being used for agricultural, industrial, recreational, and other legitimate beneficial uses or necessary to support wildlife, fish, and aquatic life via return flow to surface waters.

applicable area of influence under normal operating conditions; and

II(B) All other groundwaters not elsewhere classified.

Class III: Remedial Groundwaters - Groundwaters which are contaminated by human-induced actions and/or rendered temporarily unsuitable for their naturally occurring class. Some limited uses may be possible by applying appropriate treatment technologies or other procedures. Use limitations may be either short-term (less than ten years) or long-term (more than ten years).

III(A) Groundwaters associated with hazardous sites which are listed on the National or State priority lists for remedial action; and

III(B) Other groundwaters designated by the Pollution Control Board as remedial pursuant to the petition process.

Class IV: Naturally Limited Groundwaters - Groundwaters whose naturally occurring characteristics render them generally unsuitable for potable or general uses. Groundwaters unsuitable for withdrawal and uses or associated with hydrocarbons or minerals or considered a geothermal resource are also included here.

IV(A) Groundwaters naturally containing more than 10,000 mg/l of total dissolved solids; and

IV(B) Other groundwaters designated by the Pollution Control Board as naturally limited pursuant to the petition process.

Section 2. Designation/Petition Process

Any person may submit a petition to the Illinois Pollution Control Board to reclassify specific groundwaters as potable resource, naturally limited, or remedial groundwaters. In making a determination to reclassify groundwaters, the following factors shall be considered:

a. Whether the petitioner has identified, with sufficient specificity, the particular groundwaters for which reclassification is requested;

b. Whether the petitioner proposes a change or restriction of use which is either legitimate and beneficial or necessary;

c. The existing and forecasted use of the specific groundwaters;

d. The existing and forecasted quality of the specific groundwaters;

e. The existing and forecasted extent of contamination, if any, of the specific groundwaters;

f. The technical feasibility and economic reasonableness of eliminating or reducing any contamination of the specific groundwaters or maintaining existing water quality:

g. Whether contaminants will continue to be discharged by petitioner or other persons to the specific area;

h. The existing or forecasted impact on private or public water supplies by either contamination or interruption;

i. The feasibility and cost of alternative water sources or treatment for those users adversely affected;

j. The impact on property values;

k. Whether the specific underground waters have been designated an exempt aquifer under 35 Ill. Adm. Code Subtitle G; and

l. For imminent surface return flow underground waters, the impact on the quality of surface waters and aquatic life.

2.1 Specific groundwaters may be classified under the petition process as naturally limited, potable or remedial groundwater only if such waters will not cause or threaten to cause contamination or pollution of other waters of the State.

This classification process assumes that most groundwaters should be considered a usable resource and, thus, require protection. The system recognizes certain natural and man-induced factors, but does not condone degradation. This process also recognizes private water well uses as a legitimate use and provides a procedure for protection of future potable uses.

From a conceptual viewpoint, then, this process envisions a steadily evolving classification system. In the beginning, many groundwaters would be covered by the general resource groundwater class as being initially most reasonably representative of the full range of potential uses. Over time, however, it is anticipated that more groundwaters would be brought into the potable resource groundwater class using the petition process. Thus, additional protection could be incrementally afforded to priority groundwaters based upon sound technical justification and economic considerations.

On balance, this approach is suggested as a responsible and practical way to build a sound protective system. Moreover, this approach can be implemented without force-fitting broad threshold determinations which would be potentially skewed from the outset towards either excessive protection or insufficient protection of the State's groundwaters. This approach also enables the State to take full advantage of one of the innovative features of the IGPA, the regional groundwater protection planning program. Under the IGPA, the Illinois EPA is required to designate "priority groundwater protection planning regions" taking into account the mapping of recharge areas by the DENR. This mapping work was recently completed and submitted to the ICCG. For each of these regions, the Illinois EPA is also mandated to establish a regional planning committee. One of the principal functions of these committees is to provide recommendations regarding the need for regional protection in the form of regulated recharge areas. Other informational activities, such as development of local groundwater protection needs assessments and preparation of state well site surveys will be taking place over the next few years as well. The combination of all these state, regional and local actions should serve to facilitate the continued constructive evolution of the classification system.

An alternative approach, which uses two classes is as follows:

System B (Two Classes)

Class I - Resource Groundwaters

I(A) Potable use groundwater based upon public health related aspects

I(B) General use groundwater based upon public welfare aspects

Class II - Other Groundwaters

II(A) Naturally limited

II(B) Remedial groundwaters

System A. Either classification system would offer considerable flexibility to maximize the usability of the resource and provide for adequate protection. Both systems could be tailored to apply different technology controls for sources, management mechanisms, monitoring procedures or criteria. Above all, they could be a practical tool to effectively manage the resource on a multiple use basis to assure environmental and social goals are achieved. In addition, enhanced protection could be directed at recharge areas and aquifers via the petition process. The systems refine federally developed classification schemes and could provide for the unique resource and management needs of Illinois.

NONDEGRADATION PROCEDURES

The groundwater resources of Illinois are extensive, but not limitless. Recent studies and contamination incidents have demonstrated that groundwater is vulnerable to pollution. Although considerable reserves are yet untapped and available for future uses, groundwater degradation should be generally unacceptable. Once polluted, groundwater cleanup is technologically complex and expensive. Protection of the resource is recognized as the pervasive public policy. Many responses to this issue indicate a preference for maintaining and protecting all good groundwaters of current high quality and utility as well as providing for restoration and enhancement where feasible. This concept of nondegradation should not, however, be considered "absolute", since limited changes may naturally occur or be considered temporary until corrective action takes place.

already exist in 35 Ill. Adm. Code, Subtitle C: Water Pollution. This rovision only allows high quality waters (existing quality exceeds established standards) to be lowered if it is demonstrated that such change will not interfere with or change the uses and it is justifiable (i.e., public welfare). An analogous approach would be to establish nondegradation provisions specific to the protection of groundwater. For high priority groundwaters (i.e., potable resource groundwaters), "background" quality could be utilized to establish a trigger for preventive actions relative to potential contamination sources and activities; that is, preventive actions could be triggered by measurable and significant change from background conditions. For waters of lesser priority, more changes from background conditions could be tolerated but stopping short of a cumulative impact that would result in the downgrading of a water use.

Thus, a tiered provision for nondegradation should be provided. For all groundwaters, then, any degradation which would result in the downgrading of a designated use should be prohibited. Secondly, for potable resource groundwaters the background water quality should be established as the general benchmark. Any "detectable" excursion from this benchmark should prompt followup action such as continued and enhanced groundwater monitoring to track trends in water quality. Further excursions, which are statistically significant, should be just cause for triggering a regulatory response. Response actions should be selected from an approved protocol which would include appropriate mitigative measures by regulated sites and facilities and other areas as well. Such actions should be enforceable unless a timely

determination was made that significant adverse economic or social impacts would result. Such undue adversity determinations could be the responsibility of the Pollution Control Board based upon a petition filed by a general purpose unit of local government. Such determinations should not, however, be applicable in instances where a conflict would occur with federal requirements (e.g., RCRA). This approach would have the advantage of providing both a baseline of protection for all classes of groundwaters and special additional protection for certain priority waters. Careful consideration would need to be given to the development of an appropriate protocol of response actions.

In the final analysis, a workable nondegradation provision should enhance the overall protection afforded to groundwaters in Illinois without imposing an impossible burden on the affected parties. In other words, any acceptable regulatory program should be capable of being implemented without necessitating a fundamentally drastic and disruptive short-term impact upon desired community and socio-economic structures.

NUMERICAL/NARRATIVE CRITERIA

In general, the Illinois Groundwater Protection Act (IGPA) expresses a preference, where feasible, for numerical water quality criteria as opposed to narrative criteria. Numerical criteria for specific contaminants can provide a simple and clear basis to determine whether a water quality goal is being achieved. Typically, numerical criteria provide the specificity necessary to make timely and definite regulatory and environmental decisions.

more generic factors which reference either a general condition (i.e. drinkable) or a prohibition (i.e. free from toxic contamination). These can include using procedures to calculate a more specific criteria (i.e. process to determine numerical criteria for specific toxics). Narrative criteria do offer a degree of special protection in several instances. Narrative limits can be an advantage when specific numerical limits are not defined, or combinations of compounds are more toxic than the equal quantity of each separately (e.g., mixtures rule). In other cases, criteria can be set by a process which defines a measured response (e.g., 96 hour TLM). Some organic compounds can readily degrade from one species to another (PCE to TCE, breakdown products of pesticides, etc.). In these instances, a surrogate criteria or a screening parameter (total organics) of similar compounds can be a more effective measure of water quality and provide an added degree of general protection.

The recommended approach for Illinois is: 1) to establish numerical criteria for each compound where feasible; 2) to use compound class limits where appropriate (e.g., Total Organics) and 3) to define a toxicity assessment procedure where either specific limits or combinations are not available. This latter approach will provide a toxic screening process to allow regulation of compounds shown to have toxic effects, but which have not had formal drinking water levels established. It also is consistent with the Proposed Water Quality Standards Revision, Toxics Control Program (R88-21) which is currently under consideration by the Pollution Control Board.

Team has been formed as a work group of the Interagency Coordinating Committee on Groundwater. This Team is composed of technical and scientific representatives from various state agencies (See Attachment A). The purpose of this approach is to provide technical guidance and scientific resources to help assure that the final rulemaking proposal is valid and defensible. This Team also provides another means of coordinating the development of the standards.

The initial task of the Team was responding to the issue of what contaminants require consideration. The IGPA prescribed that the following must be addressed:

> "those contaminants which have been found in groundwaters of the State and which are known to cause, or suspected of causing cancer, birth defects, or any other adverse effect on human health according to nationally accepted guidelines."

However, the Team also included other chemical substances beyond this legislative mandate if potential adverse health effects warranted such action.

As a first step, a master list was developed for all compounds known to occur in Illinois' groundwater or suspected as possible contaminants in groundwaters on a national basis. This initial list contained almost 400 compounds. This master list also contained existing or proposed health-based criteria, health data and other related information to help systematically determine whether the known or suspected effects were suitable for use in criteria determinations. The reference sources for the health related information include the published or proposed Health Advisories (HAs) of the United States Environmental Protection Agency (USEPA), and data from the

Program (NTP), Occupational Safety & Health Agency (OSHA), and the Office of Health and Environmental Assessment Group (OHEA). These sources, coupled with the drinking water criteria documents of USEPA, can serve as the overall guidelines for evaluating health effects.

As a second step, the Team applied a sorting process to the master list. For example, the Team took into consideration the fact that only 132 of the 400 total chemicals have been found (confirmed detections) in community water supply wells or associated with cleanup sites identified by the Illinois EPA. In general, the following sorting criteria were used:

- Existence of numerical limits for listed chemical substances;
- Degree of toxic effects for listed chemical substances; and
- Extent of confirmed detections in Illinois' groundwaters.

As a result, the Team tentatively targeted the chemical substances shown in Table 1. While the parameter selection process will continue to be refined, this list represents a good starting point for detailed development of the rulemaking proposal.

The draft list is comprised of 82 chemical substances including some inorganic chemicals which occur naturally. Ten of these inorganic chemicals already have established drinking water limits, termed Maximum Contaminant Levels (MCLs), which indicates the existence of a health concern. In regard to the 31 listed pesticides, over half have been found in Illinois' groundwater. MCLs exist or are proposed by USEPA for 20 of the pesticides. Seven pesticides known to occur in Illinois do not have existing or proposed drinking water standards.

pesticides. These organics are generally described as the volatile organic compounds (VOC's). Twenty-four of these compounds have been documented in Illinois' groundwater. USEPA has set drinking water MCLs for eight VOCs on this list and proposed MCLs for another eight compounds. Total organics include these VOC compounds and, thus, may be used as an indicator parameter. Several of these compounds, such as methylene chloride and n-Hexane, are considered ubiquitous laboratory contaminants. Thus, any criteria for these must account for this situation.

One approach to setting standards for groundwaters assumes that drinking water criteria should apply to all groundwater since such levels would be protective of all uses. It should be recognized, however, that these federally developed criteria are based upon health effects and other feasibility factors such as availability of analytical methods, treatment technology and cost. Furthermore, taste and odor thresholds are considered. However, factors which apply to groundwaters for general uses, such as irrigation or livestock water, are somewhat different. Certain compounds, such as boron, can impact irrigation use but not affect drinking water use. Therefore, all waters of the State designated as potable resource groundwater should be protected for that use by application of specific numerical criteria including available drinking water quality criteria. This approach would also be consistent with general toxicological practice which usually involves consideration of the operative characteristics of discrete chemical substances to evaluate potential human health effects.

into play some key distinctions. Groundwaters in the natural underground state do not have an inherent use as do surface waters which are necessary for aquatic life. Of course, some groundwaters eventually return to waterways as base flow and, thus, can impact surface water quality. For the sake of this discussion paper, however, one can view many general use groundwaters as potentially available for human use at some future time. From this perspective, the management approach should be to adequately protect the "general usability" of these waters. In this context, variable occurrence of trace amounts of metals or organics in these groundwaters should not be an actionable concern provided that we are attentive to preventing contamination, in a cumulative sense, which renders such groundwaters generally unuseable. In other words, very minor natural or other background fluctuations in chemical substances should be accommodated as part of the overall system. In this regard, special indicator parameters are viewed as especially appropriate for these general use waters. Thus, waters designated as general resource groundwaters should have special water quality criteria appropriate to protect agricultural, industrial, recreational, and other legitimate beneficial uses of groundwater, as well as certain indicator parameters which serve as a cumulative protective cap.

The compounds requiring regulation and their associated criteria for both general and potable uses are as follows:

1. Inorganic Indicator - concentration of the following indicator constituent limits shall not be exceeded except due to natural causes:

Constituents	Units	Criteria
Total Trace Inorganics (Total of As, Cd, Cu, Pb, Hg, Se, Cr)	ug/l	500.0

2. Inorganic Constituents - concentrations of the following chemical constituents shall not be exceeded except due to natural causes:

Constituents	Units	Criteria
Barium	mg/l	1.0
Boron	mg/l	2.0
Chloride	mg/l	500.0
Chromium	mg/l	0.1
Cyanide	ug/l	200.0
Fluoride	mg/l	2.0
Iron	mg/l	5.0
Sulfate	mg/l	500.0
Zinc	mg/l	2.0
Nitrate-Nitrogen	mg/l	10.0
Total Dissolved Solids (TDS)	mg/l	1,500.0
Gross Alpha	pi/l	15.0

shall not exceed the organic impact cap:

Constituents	Units	Criteria
Total organics (summation of individual compounds)	ug/l	25.0
Any one pesticide	ug/l	10.0

4. General resource groundwater shall be free from any substances or combination of substances in concentration toxic or harmful to human health or animal, plant or aquatic life where such waters will cause or threaten to cause harm to other designated uses of waters of the State. (Detailed procedures for determining criteria will follow a modified version of the R88-21 provisions)

Potable Resource Groundwater Quality Criteria

1. Inorganic Chemical Constituents - concentrations of any constituent shall not be exceeded:

Parameter	Units	MCL	Proposed MCL	MAC**
Arsenic	ug/l	50.0	30.00	50.0
Barium	ug/l	1,000.0	5,000.0	1,000.0
Cadmium	ug/l	10.0	5.0	10.0
Chloride	mg/l	250.0*		
Chromium	ug/l	50.0	100.0	50.0
Copper	ug/l	1,000.0*		5,000.0
Cyanide	ug/l			200.0
Iron	ug/l	300.0*		1,000.0
Fluoride	ug/l	4,000.0		1,800.0
Lead	ug/l	50.0	5.0	50.0
Manganese	ug/l	50.0*		150.0
Mercury	ug/l	2.0	2.0	2.0
Nickel	ug/l			
Nitrate (as Nitrogen)	ug/l	10,000.0	10,000.0	10,000.0
Selenium	ug/l	10.0	50.0	10.0
Sulfate	mg/l	250.0*		
Silver	ug/l	50.0		50.0
Thallium	ug/l			
Total Dissolved Solids	mg/l	500.0*		
Zinc	ug/l	5,000.0*		5,000.0

*Secondary MCL

**Maximum Allowable Concentration (35 Ill. Adm. Code, Subtitle F)

shall not be exceeded:

Parameter	Units	MCL	Proposed MCL	MAC
Alachlor	ug/l	2.00		
Aldicarb	ug/l	10.00		
Aldrin	ug/l			1.0
Atrazine	ug/l		3.0	
Butylate	ug/l			
Carbofuran	ug/l		40.0	
Chlordane	ug/l		2.0	3.0
Chloropyrifos	ug/l			
Cyanazine	ug/l			
DDD	ug/l			
DDE	ug/l			
DDT	ug/l			50.0
2,4-D	ug/l	100.0	70.0	10.0
Diazinon	ug/l			
Dieldrin	ug/l			1.0
Endrin	ug/l	0.2		0.2
Heptachlor	ug/l		0.40	0.1
Heptachlor Epoxide	ug/l		0.20	0.1
Isofenphos	ug/l			
Lindane	ug/l	4.0	0.20	4.0
Malathion	ug/l			
Methoxychlor	ug/l	100.0	400.0	100.0
Metolachlor	ug/l			
Metribuzin	ug/l			
Pentachlorophenol	ug/l		200.0	
Pentamethalin	ug/l			
Toxaphene	ug/l	5.0	5.0	5.0
Trifluralin	ug/l			
2,4,5-TP	ug/l	10.0	50.0	10.0
2,4,5-T	ug/l	10.0	50.0	10.0

3. Other Organic Constituents

Parameter	Units	MCL	Proposed MCL	MAC
Acrylamide	ug/l			
Benzene	ug/l	5.0		
Carbon tetrachloride	ug/l	5.0		
Cyclohexane	ug/l			
Ortho-dichlorobenzene	ug/l		600.0	
Para- dichlorobenzene	ug/l	75.0		
1,1-Dichloroethane	ug/l			
Meta-Dichlorobenzene	ug/l		600.0	
1,2-Dichloroethane	ug/l	5.0		
1,1-Dichloroethylene	ug/l	7.0		
Cis-1,2-Dichloroethylene	ug/l		70.00	
Trans-1,2-Dichloroethylene	ug/l		100.00	
Ethylbenzene	ug/l		700.00	
Freons	ug/l			
N-Hexane	ug/l			
Methylene chloride	ug/l			
Monochlorobenzene	ug/l		100.00	
Phenols	ug/l			
Polychlorinated Biphenyls	ug/l		0.5	
Styrene	ug/l		5.0	
Tetrachloroethylene	ug/l		5.0	
1,1,1,2-Tetrachloroethane	ug/l			
1,1,2,2-Tetrachloroethane	ug/l			
1,1,2-Trichloroethane	ug/l			
Toluene	ug/l		2,000.00	
1,1,1-trichloroethane	ug/l	200.0		
Trichlorobenzene	ug/l			
Trichloroethylene	ug/l	5.0		
Vinyl chloride	ug/l	2.0		
Xylene (total)	ug/l		10,000.00	

4. Potable Resource Groundwaters of the State shall be free from any substances or combination of substances in concentrations toxic or harmful to human health.

4.1 Any substance or combination or substances shall be deemed toxic or harmful to human health if present in concentrations that exceed criteria based on either of the following:

1. Disease or functional impairment due to a physiological mechanism for which there is a threshold dose below which no damage occurs (human threshold criterion); or

2. Disease or functional impairment due to a physiological mechansim for which any dose may cause some risk of damage (human nonthreshold criterion).

(Detailed procedures for determining criteria will follow a modified version of the R88-21 provisions.)

Remedial groundwaters should initially have numerical criteria which are based upon existing water quality conditions. Such conditions are usually characterized as part of site investigation and development of remedial action plans for cleanups on the basis of either short-term (less than 10 years) or long-term (10 years or more) impairment. Such impacted groundwaters are expected to, at least, be upgraded to the general resource groundwater class.

APPLICABILITY ASPECTS

Groundwater standards are intended to serve as the rules established by the State to protect groundwaters. The standards are expressed as constituent concentrations or levels or narrative statements that represent the water quality levels to support intended uses or goals. Their primary utility is use in ambient monitoring and assessment, pollution control program evaluation, regulatory control criteria and enforcement programs. These either provide a baseline for the evaluations of groundwater resources, or the criteria to define performance expectations for contamination sources or activities. Applicability issues interact with classification provisions and nondegradation aspects and form the basis of goal measurement. The point where standards apply, when they apply, and how they are used brings together the entire process. Thus, groundwater standards development must consider what limits apply to which area and whether excursions or allowance of time or extent can be made to achieve the goals.

Four special application concerns have been identified as described below:

should apply appropriate groundwater criteria which are consistent with the designated groundwater classes. Additional cleanup objectives may still be imposed (i.e., air, soil, etc), however, because of other concerns. Regulated activities under Section 14.4 of the Act should apply appropriate monitoring criteria (i.e., potable resource groundwater criteria for existing activities and background criteria for new activities) at the compliance monitoring point. However, compliance with the designated class of groundwater should still apply to all groundwater underlying the site.

2) Ground and Surface Water Interface - Groundwaters which are hydraulically connected with surface waters should not cause or threaten to cause pollution or become harmful to human health or, animal, plant, or aquatic life. The appropriate procedures described in R88-21 (Toxics Control Program dated February 9, 1989) should apply in surface waters including adequate consideration of mixing zones.

3) Influence Zone of Subsurface Drainage Systems - Criteria for groundwater should not apply to waters controlled by subsurface drains, tunnels, storm sewers, tiles, sewers and other man-made conduits. Surface water quality criteria for discharges from these systems should apply at the point of discharge to surface waters.

4) Impacts Associated with Mining Operations - Criteria for waters pumped from the ground, or incidental to the mining operation should comply with the appropriate surface water quality criteria at the point of discharge or containment (i.e., ponded). Special condsideration may need to be given to design of monitoring points

and determination of compliance boundaries in order to generally ensure compatibility with applicable mining regulatory programs. In some instances, however, the new groundwater quality standards should be a major determinate in the design and operational control of mining activities.

CONCLUSION

Illinois needs and should have strong standards for the protection of groundwater quality. What should one consider as "strong" in terms of the rulemaking process and socio-economic and environmental conditions associated with our State? The following illustrative criteria are provided as guideposts for the reader in considering the question just posed.

- The standards should be enforceable.

  Compliance on the part of affected interests is essential for the benefits of this protective program to be realized. Thus, setting of these standards will likely involve extensive consideration of both the adequacy of protection afforded to groundwaters and the factors of technical feasibility and economic reasonableness. In other words, care should be taken to ensure that the final product is, in fact, implementable within the scientific and resource constraints which are realities for the participants.

- The standards should be progressive.

  After all is said and done, the availability and use of these standards should lead us in a markedly positive direction. We should eventually be able to record that circumstances in Illinois are clearly better because of all the effort that went into putting groundwater quality standards on the regulatory books. Furthermore, the standards should serve to prompt new ways of doing business in the long run.

- The standards should be timely.

  Filing a regulatory proposal with the Pollution Control Board only starts the formal rulemaking process. A proposal of this magnitude and complexity is likely to be subjected to an arduous test before a final product is achieved. In recognition of these concerns, the

IGPA included specific deadlines for submittal of a proposal by the ... the Board (within two years after submittal of proposal, i.e., July 1, 1991). These target dates deserve to be met but should be recognized as being optimistic. Knowing that Illinois needs improved protection of groundwaters, a phased development process for this proposal has been pursued with continuing opportunities for interaction with affected interests. Hopefully, this enhanced front-end effort will serve to expedite the formal rulemaking process, and help get the necessary protection in place in a timely manner.

The standards should be equitable.

Over the years, these standards are likely to affect, either directly or indirectly, many, many things in Illinois. Any governmental action with such potential for broad-scale impacts should satisfy an equally-wide sense of fairness. Ideally, no affected party should harbor strong concerns about being seriously aggrieved once the standards are adopted. To achieve such a demanding ideal, responsible give and take will be necessary all along the way. The business community stands to gain from having workable and predictable rules in place. Environmental groups, communities and citizens stand to gain from having improved protection in place. Such benefits could be long in coming for Illinois if an atmosphere of good faith negotiation is not maintained. The job can be done as we know from the experiences relating to the passage of the IGPA.

The ICCG is hopeful that this discussion document will be viewed as substantial progress towards satisfying these guideposts. While the Committee knows that continued refinement of the proposal is likely, the overall extent of such change needs to be rapidly narrowing towards a supportable rulemaking package.

Table 1

INTERAGENCY GW STANDARDS TECHNICAL TEAM'S
DRAFT LIST OF COMPOUNDS
FOR WHICH CRITERIA ARE JUSTIFIABLE

Inorganics

* Arsenic 1,2,3
* Barium 1,2,3
* Boron 1
* Cadmium 1,2,3
* Chloride 1
* Chromium 1,2,3
* Copper 1,3
* Cyanide 1
* Fluoride 1,2
* Iron 1
* Lead 1,2
* Manganese 1
* Mercury 1,2,3
* Nickel 1
* Nitrate 1,2,3
* Selenium 1,2,3
* Silver 1,2
* Sulfate 1
* Thallium
* Total Dissolved Solids 1
* Zinc 1

Pesticides

* Atrazine 3
  2,4,5-T 1,3
  2,4,5-TP (Silvex) 1,2,3
  2,4-D 1,2,3
* Alachlor (Lasso) 3
  Aldicarb 3
  Aldrin 1
* Butylate
* Carbofuran 3
* Chlordane 1,3
* Chloropyrifos (Dursban)
* Cyanazine
  DDT 1, DDD, & DDE
* Diazinon
  Dieldrin 1
  Endrin 1,2
* Heptachlor Epoxide 1,3
* Heptachlor 1,3
* Isofenphos
* Lindane 1,2,3
  Malathion
  Methoxychlor 1,2,3
* Metolachlor (Dual)
* Metribuzin (Sencor)
  Parathion 1
* Petachlorophenol 3
* Prowl (Pendimethalin)
  Toxaphene 1,2,3
* Trifluralin

Other Organics

  1,1,1,2-Tetrachloroethane
* 1,1,2,2-Tetrachloroethane
* 1,1,2-Trichloroethane
* 1,1-Dichloroethane
* 1,1-Dichloroethylene 2
* 1,2-Dichloroethane 2
* 111-Trichloroethane 2
  Acrylamide 3
* Benzene 2
* Carbon Tetrachloride 2
  Cis 1,2-Dichloroethylene 3
* Cyclohexane
* Ethylbenzene 3
  Freon
* Meta-dichlorobenzene
* Monochlorobenzene
* n-Hexane
* Ortho-dichlorobenzene
* Polychlorinated Biphenyls
  Styrene 3
* Tetrachloroethylene
* Toluene 3
* Trans 1,2-Dichloroethylene
* Trichlorobenzene
* Trichloroethylene 2
* Vinyl Chloride 2
* Xylene 3
* Para-dichlorobenzene 2
  Methylene Chloride
* Phenols 1

Footnotes:

1) General/PFP GW Criteria
2) MCL
3) Anticiptated MCL
* Detected in PWS Wells/Cleanup Sites/IDPH Monitoring

Attachment A

Technical Standards Team

Member/Position	Agency/Office
Robert Schwarberg Bureau Chief	Illinois Department of Agriculture Bureau of Laboratories
Thomas Long, PhD. Senior Toxicologist	Illinois Department of Public Health Environmental Health
Alan Felsot, PhD. Head, Pesticide, Chemistry and Toxicology Section	Department of Energy & Natural Resources Illinois Natural History Survey
Michael Barcelona, PhD. Head Aquatic Chemistry Section	Department of Energy & Natural Resources Illinois State Water Survey
A.G. Taylor Agricultural Advisor	Illinois Environmental Protection Agency Environmental Programs
Robert P. Clarke Manager, Groundwater Section	Illinois Environmental Protection Agency Division of Public Water Supplies
Richard P. Cobb, P.G. Manager, Hydrogeology Unit	Illinois Environmental Protection Agency Division of Public Water Supplies
James O'Brien Manager, OCS	Illinois Environmental Protection Agency Office of Chemical Safety
Thomas C. Hornshaw, PhD. Chief Environmental Toxicologist	Illinois Environmental Protection Agency Office of Chemical Safety
Tracy Virgin Environmental Toxicologist	Illinois Environmental Protection Agency Office of Chemical Safety
Harry Chappel, P.E. Manager, Compliance Monitoring Section	Illinois Environmental Protection Agency Division of Land Pollution Control

E X H I B I T 17

INTERAGENCY COORDINATING COMMITTEE ON GROUNDWATER

May 8, 1989

The session was called to order at 9:30 am, at the Illinois Environmental Protection Agency. The following people were there:

Present

Roger Kanerva	Illinois Environmental Protection Agency
Robert Clarke	Illinois Environmental Protection Agency
David Baker	Illinois Department of Energy and Natural Resources
Harry Hendrickson	Illinois Department of Energy and Natural Resources
David Antonacci	Illinois Department of Public Health
John Washburn	Illinois Department of Transportation
Dick Schicht	Illinois State Water Survey
Dick Berg	Illinois State Geological Survey
Rick Cobb	Illinois Environmental Protection Agency
Carl Kamp	Illinois Environmental Protection Agency

Not Present(Note - Agenda was not sent in advance)

Gretchen Bonfert	Governor's Office
Jack Moore	Illinois State Fire Marshall
Bob Schwarberg	Illinois Department of Agriculture
Stephen Nussbaum	Illinois Department of Mines & Minerals
Stewart Schrodt	Illinois Department of Commerce & Comm. Affairs

The meeting was chaired by Roger Kanerva, IEPA. Approval of the minutes of March 7, 1989 were deferred until the upcoming meeting due to lack of a quorum.

Groundwater Standards Update

Roger Kanerva (IEPA) stated that a good dialogue was developed during the GAC meeting on April 21, 1989 concerning the Discussion Document. Roger stated that the environmental group representatives felt the proposal was not aggressive enough, and the business interest groups thought it was a good proposal. Roger Kanerva stated that Kevin Green proposed that we should consider developing an expedited designation procedure (e.g., similar to the CSO exception process).

Roger Kanerva stated that the Agency made some changes to the Discussion Document relative to comments received. He added 2,500 feet as the outer boundary of the potable resource classification. Roger stated that he felt that this was a modest and reasonable proposal. Two million acres would be affected by adding the 2,500 foot distance or about 9 percent of the total area in the state. He stated that the environmental interests encouraged the designation of 50 percent of the total area in Illinois as potable resource groundwater.

Statewide Regulatory Development Session - Roger Kanerva stated that the business groups were having a difficult time understanding the applicability concepts discussed at the session. In addition, Roger stated that more work is needed on the organic indicator.

Regional Workshops - Roger Kanerva (IEPA) stated that there are three regional workshops slated for the third, ninth, and eleventh of May. One workshop has already been held in Elgin.

Bob Clarke (IEPA) stated that there was very light attendance at the Elgin workshop.

Miscellaneous - Dave Baker (DENR) asked how the regulated recharge area program related to the potable resource classification. Roger Kanerva (IEPA) replied that the intent of the regulated recharge area is to apply to potable resource groundwater. However, the groundwater designation process is such that it is not exactly coincident with the regulated recharge area to allow the Pollution Control Board some flexibility. Roger stated that the future goal of potable resource groundwater is to coincide with the regulated recharge area.

Dick Berg (ISGS) asked who establishes the recharge area. Roger Kanerva (IEPA) replied that a regional planning committee can petition the Agency to make a regulated recharge area proposal to the Pollution Control Board. The Agency may also propose such a regulation to the Board.

Roger Kanerva (IEPA) stated that a draft groundwater quality standards rule will need to be prepared for the next ICCG meeting on July 17, 1989, and a polished proposed rule will probably be completed by late July.

Recharge Area Mapping Update

Roger Kanerva (IEPA) stated that a very good discussion occurred between the Agency and the ISWS/ISGS concerning the recharge area program. A change was made to title the map from Potential For Aquifer Recharge and Aquifer Sensitivity to Appropriate Recharge Area Map of Illinois.

Dick Berg (ISGS) stated that the map is still being reviewed by the surveys editorial review committee. Bob Clarke suggestd not using Northern Illinois University to print the Appropriate Recharge Area Map due to high costs, but rather have a smaller map produced by the Agency.

Bob Clarke asked if soil classification was going to be dropped. Dick replied that soil classification will probably still be included on the map.

Roger Kanerva stated that we are in the process of adding factors (e.g., CERCLIS SITES, and WELLSITE SURVEY DATA) to help designate priority areas. This will probably be an important map, and we hope to be ready after July to begin designating Regional Planning Committees.

Dick Berg (ISGS) asked if the survey was responsible for printing the priority areas map.

Dick Schicht (ISWS) asked who appoints the regional planning committee. Roger Kanerva replied that the Director of the Agency selects the committee.

Dick Schicht asked how are the regions selected, and how many will be designated. Roger Kanerva replied that we will probably use political boundaries (eg., SMAs) and might begin the process by establishing 2-4 areas.

Groundwater Education Update

Harry Hendrickson (ENR) reported that the education committee met on April 3, 1989 and discussed sealing and abandoning wells, and the groundwater video. The next meeting will be on June 5, 1989 at the SCS office in Champaign. The committee plans to discuss a work plan for next year. Harry stated that during groundwater protection month over 4,000 packets were sent out about sealing abandoned wells. Also, the TV stations were sent a special report for news reporting. Many meetings are being held through out the state at the local and county levels concerning the subject of groundwater. Water filters have been a popular topic recently, due to a wave of commercial rip-off sales tactics. This is generally occuring in the northern part of state.

Harry Hendrickson stated that the Questions/Answers brochure is being distributed. Harry also stated that the Illinois State Geological Survey has completed its slideset on the Groundwater Protection Act.

Harry Hendrickson stated that some counties have established water quality committees which provide education on a local level.

Roger Kanerva (IEPA) stated that it might be a good idea to have someone from the sessions come and provide an update to the ICCG.

Roger Kanerva (IEPA) asked Dave Antonnoci if the Department of Public Health has studied point of use devices (POU). Dave Antonnoci replied that they've been around for years' and the only thing that can be done about them is to get the Attorney General involved.

David Antonacci stated that these water treatment purveyors use various scare tactics selling point-of-use water filters to the public.

Roger Kanerva (IEPA) explained that this water filter issue won't go away, especially with the groundwater legislation going on.

Dave Antonacci (IDPH) explained that there are no national standards on water filters available.

Roger Kanerva (IEPA) asked if Public Health could do a study on this issue, with ENR. He also asked the Water Survey to consider being involved in such a study.

Monitoring Well Legislation Update

Dave Antonacci (IDPH) stated that the legislation concerning monitoring well permits is on hold in the senate.

Other Business

Bob Clarke (IEPA) stated that the Pollution Control Board has made a ruling that an ECIS is to be done on the proposed technology regulations and that the title of the proposal be changed to "Groundwater Protection: Regulations for Existing and New Activities Within Setback Zones and Regulated Recharge Areas".

Roger Kanerva stated that the tentative agenda for the next ICCG meeting will be to discuss the groundwater quality standards, ECIS, and the regulated recharge area mapping.

Next Meeting

The next meeting will be held on July 17, 1989 at 9:00 am at 1346 North Ninth Street, Springfield.

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