

ILLINOIS POLLUTION CONTROL BOARD
July 11, 1986

IN THE MATTER OF:)
)
AMENDMENT TO 35 ILL. ADM.) R86-29
CODE 604.202 OF SUBTITLE F:)
PUBLIC WATER SUPPLIES)
(Aluminum))

INQUIRY HEARINGS. PROPOSAL OF THE BOARD.

ORDER OF THE BOARD (by J. D. Dumelle):

In recent years a great deal of attention has been given to Alzheimer's Disease. It is believed to affect about 2,000,000 persons in the United States of whom half are in nursing homes. It is both crippling and eventually fatal.

Alzheimer's Disease victims, upon autopsy, are found to have characteristic neurofibrillary tangles in the brain. High aluminum content is also found in these cases.

Kidney failure victims who had dialysis with water containing aluminum developed "dialysis dementia" and died within a year. Their brains had elevated aluminum levels.

It is not certain that aluminum is the cause of Alzheimer's Disease but it appears prudent to limit its level in public drinking water supplies until more research can be done. Excessive dosage with alum (aluminum sulfate) used in water treatment can raise aluminum levels in finished water to as much as 2.67 mg/l. The American Water Works Association has had, since 1968, a goal of keeping aluminum levels at 0.050 mg/l. The U.S. Environmental Protection Agency recommends this concentration as a guidance level to optimize treatment and avoid particle sedimentation in the distribution system. Since a standard carries with it enforcement powers and potential penalties, the rule proposed below has been set at 0.100 mg/l. It is a level which is believed to be easily attained by competent operators of water treatment plants. To the extent that overdosing with alum is occurring, the proposed standard will save public funds being spent on unneeded chemicals.

The following references are listed for detailed information:

"Relationship of Aluminum to Alzheimer's Disease" by Daniel P. Perl. In Environmental Health Perspectives, Vol. 63, pp. 149-153, 1985.

"Pathologic Association of Aluminum in Alzheimer's Disease" by Daniel P. Perl. In Alzheimer's Disease, Barry Reisberg, M.D. editor, The Free Press, 1983, pp. 116-121.

"Alzheimer's Disease" by Richard J. Wurtman M.D. In Scientific American, January 1985, pp. 62-66, 71-74, 120.

"Aluminum" by Leopold Liss and David J. Thornton. In Generations, Winter 1984.

Garrot, P.O. (1986) Metabolism and possible health effects of aluminum. Environmental Health Perspectives, Vol. 65, pp. 363-441.

The rule proposed below is offered for purposes of decision and format. In proposing this particular rule the Board does not in any way intend to indicate a favorable predisposition toward its adoption. The Board hereby authorizes inquiry hearings to be held concerning the proposal and invites public participation and comment.

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE F: PUBLIC WATER SUPPLIES

CHAPTER I: POLLUTION CONTROL BOARD

PART 604

FINISHED WATER AND RAW WATER QUALITY AND QUANTITY

SUBPART B: CHEMICAL AND PHYSICAL QUALITY

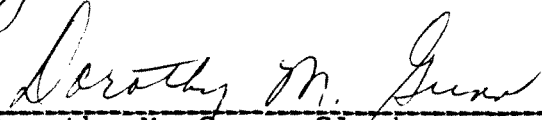
Section 604.202 Contaminants and Maximum Allowable Concentrations

The concentration of substances in the finished water shall not exceed the limits listed, except as provided in Section 604.203.

Substance	Reported As	Maximum Concentration mg/l
Aluminum	Al	0.100
Arsenic	As	0.05
Barium	Ba	1.
Cadmium	Cd	0.010
Chromium	Cr	0.05
Copper	Cu	5.
Cyanide	CN	0.2
Fluoride	F	1.8
Iron	Fe	1.0
Lead	Pb	0.05
Manganese	Mn	0.15
Mercury	Hg	0.002
Nitrate-Nitrogen	N	10.
Organics		
Pesticides		
Chlorinated Hydrocarbon Insecticides		
Aldrin		0.001
Chlordane		0.003
DDT		0.05
Dieldrin		0.001
Endrin		0.0002
Heptachlor		0.0001
Heptachlor Epoxide		0.0001
Lindane		0.004
Methoxychlor		0.1
Toxaphene		0.005
Chlorophenoxy Herbicides		
2,4-Dichlorophenoxyacetic acid (2,4-D)		0.01
2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP or Silvex)		0.01
Total Trihalomethanes		0.10
Selenium	Se	0.01
Silver	Ag	0.05
Turbidity	NTU	1.
Zinc	Zn	5.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Order was adopted on the 17th day of July, 1986 by a vote of 6-0.



 Dorothy M. Gunn, Clerk
 Illinois Pollution Control Board