

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the matter of: )  
) AS 99-5  
Petition of Abbott Laboratories ) (Adjusted Standard - Water)  
For Adjusted Standard From )  
35 Ill. Adm. Code 302.208 and 304.105 )

NOTICE OF FILING

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

G. Brent Manning, Director  
Department of Natural Resources  
524 South Second Street  
Suite 400  
Springfield, Illinois 62706

Alan P. Bielsawski  
Sidley & Austin  
One First National Plaza  
Chicago, Illinois 60603

John Knittle, Hearing Officer  
Illinois Pollution Control Board  
James R. Thompson Center,  
100 West Randolph St., Suite 11-500  
Chicago, Illinois 60601

PLEASE TAKE NOTICE that on March 12, 1999 I have filed with the Office of the Clerk of the Pollution Control Board, the Response of the Illinois Environmental Protection Agency, a copy of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: Caryn H. Nadenbush  
Caryn H. Nadenbush  
Assistant Counsel  
Division of Legal Counsel

Dated: March 12, 1999  
EPA File #734-98-AS

Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276

THIS FILING SUBMITTED ON RECYCLED PAPER

STATE OF ILLINOIS )  
 )  
COUNTY OF SANGAMON )

SS

**PROOF OF SERVICE**

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

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

John Knittle, Hearing Officer  
Illinois Pollution Control Board  
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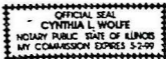
G. Brent Manning, Director  
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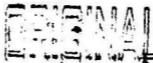
and mailing it from Springfield, Illinois on March 12, 1999 with sufficient postage affixed as indicated above.

*Nancy J. D. Lampert*

SUBSCRIBED AND SWORN TO BEFORE ME  
this 12<sup>th</sup> day of March, 1999

*Cynthia L. Wolfe*  
Notary Public





BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

RECEIVED  
CLERK'S OFFICE

MAR 16 1999

STATE OF ILLINOIS  
Pollution Control Board

In the matter of:

Petition of Abbott Laboratories  
For Adjusted Standard From  
35 Ill. Adm. Code 302.208 and 304.105

AS 99-5  
(Adjusted Standard - Water)

RESPONSE OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
TO THE PETITION OF ABBOTT LABORATORIES  
FOR AN ADJUSTED STANDARD FROM 35 ILL. ADM. CODE 302.208 AND 304.105

NOW COMES the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("Illinois EPA") by its attorney, ~~Garon H. Nadenbush~~, and pursuant to Section 28.1 of the Illinois Environmental Protection Act ("Act") 415 ILCS 5/28.1(1996) and the regulations of the Illinois Pollution Control Board ("Illinois PCB") at 35 Ill. Adm. Code 106.714(a), files this response to the petition of ABBOTT LABORATORIES ("PETITIONER" OR "ABBOTT LABS") for an adjusted standard from 35 Ill. Adm. Code 302.208 and 304.105 as they relate to the discharge of chloride and total dissolved solids ("TDS") from Abbott Labs' Abbott Park facility, in Lake County, Illinois. Specifically, the adjusted standards are requested for the receiving stream, the Middle Fork of the North Branch of the Chicago River ("Middle Fork"), for a reach of 2,000 feet.

Abbott Labs filed a petition for an adjusted standard from 35 Ill. Adm. Code 302.208 and 304.105 on November 12, 1998, that was then docketed as AS 99-5 by the Illinois PCB. The petition included a waiver of a hearing. Notice of the Petition was published in the Daily Herald of

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Artington Heights, Illinois on November 26, 1998 and filed with the Illinois PCB on December 3, 1998. On December 17, 1998, the Illinois PCB issued an Order requesting additional information from Abbot Labs. On January 14, 1999, Abbott Labs filed a Motion to Extend the Filing Date, and subsequently, Abbott Labs filed an Amended Petition on February 16, 1999.

The Illinois EPA recommends a grant of the relief requested in the adjusted standard petition with regard to 35 Ill. Adm. Code 302.208, and a denial of the relief requested in the adjusted standard petition with regard to 35 Ill. Adm. Code 304.105. Given the change in water quality standards as requested in the Petition, Abbott Labs' National Pollutant Discharge Elimination System ("NPDES") permit would be modified to reflect the adjusted standards. The effluents discharged from Abbott Labs will therefore not have the potential to cause an exceedance of the new adjusted standards. Therefore, in the interest of clarity and preciseness, relief from Section 304.105 is not necessary. In support of this recommendation, the Illinois EPA states as follows:

**A. STATEMENT OF STANDARD OF GENERAL APPLICABILITY  
FROM WHICH PETITIONER SEEKS AN ADJUSTED STANDARD**

1. Abbott Labs seeks an adjusted standard from the Illinois PCB's regulations for water quality contained in 35 Ill. Adm. Code 302.208 that provides in pertinent part:

Section 302.208 Numeric Standard for Chemical Constituents

- a) Concentrations of the following chemical constituents shall not be exceeded except in waters for which mixing is allowed pursuant to Section 302.102.

Constituent	Units	STORET Number	Standard
Chloride (total)	mg/L	00940	500.0
Total Dissolved Solids	mg/L	70300	1,000.0

Where: mg/L = milligrams per liter

2. Abbott Labs also seeks an adjusted standard from the Illinois PCB's regulations from the prohibition of discharges which violate water quality standards contained in 35 Ill. Adm. Code 304.105 that provides:

Section 304.105 Violation of Water Quality Standards

In addition to the other requirements of the Part, no effluent shall, alone or in combination with other sources, cause a violation of any applicable water quality standard. When the Agency finds that a discharge which would comply with effluent standards contained in this Part would cause or is causing a violation of water quality standards, the Agency shall take appropriate action under Section 31, or Section 89 of the Act to require the discharge to meet whatever effluent limits are necessary to ensure compliance with the water quality standards. When such a violation is caused by the cumulative effect of more than one source, several sources may be joined in an enforcement or variance proceeding, and measures for necessary effluent reductions will be determined on the basis of technical feasibility, economic reasonableness and fairness to all dischargers.

**B. IMPLEMENTATION OF FEDERAL LAW**

3. The effluent standards of 35 Ill. Adm. Code Part 304 were adopted by the Illinois PCB to implement, in part, the water quality standards of Section 303(a) of the Clean Water Act ("CWA"), 33 U.S.C. §1313(a) and the Illinois water quality standards of 35 Ill. Adm. Code Part 302. The existing Illinois water quality standards have been approved by the United

States Environmental Protection Agency ("USEPA") and the proposed adjusted standards for water quality, if adopted by the Illinois PCB, will be submitted for approval by the USEPA. In recent years, the USEPA has approved standards for chloride and TDS subsequent to the adoption of adjusted and site-specific standards for these parameters by the Illinois PCB. The Illinois EPA anticipates that the USEPA will consider the instant rule essentially similar to previous changes to standards and that this rule will also be approved.

#### C. LEVEL OF JUSTIFICATION REQUIRED

4. The Illinois EPA agrees with Petitioner that the regulations of general applicability at 35 Ill. Adm. Code 902.208 and 304.105 do not specify a level of justification or other requirements necessary for this type of adjusted standard.

#### D. NATURE OF PETITIONER'S ACTIVITY

5. The headquarters of Abbott Labs is located in Abbott Park, Lake County, Illinois ("Abbott Park"). The Abbott Park site includes manufacturing operations, administration offices, and research and development facilities. In order to support these facilities, Abbott Labs operates a utilities plant for the production and distribution of steam, process water, chilled water, distilled water and compressed air.
6. The Abbott Park site also contains a series of interconnected ponds, which serve several purposes, including: providing retention of site storm water runoff to control flooding of neighboring properties and receiving waters; functioning as a reservoir for re-circulating non-

contact cooling water for various utility systems; and, providing equalization and settling treatment of site storm water runoff and utility-related wastewater.

7. The Abbott Park ponds themselves are not waters of the State, and therefore not subject to the water quality standards. However, there are two monitoring points (Outfalls 001 and 002) where pond effluent is measured as it enters the Middle Fork. The effluent limits for these outfalls were established in the NPDES Permit No. IL0066435 issued to Abbott Labs on January 5, 1995.
8. Since the issuance of the NPDES permit, Abbott Labs occasionally has exceeded the limits for chloride and TDS, primarily in the winter and spring months. Some of the chloride and TDS come from the utility operations at the Abbott Park site, including the cooling tower blowdown and reverse osmosis reject water, which are known to be higher in chloride and TDS than the source water for the site.
9. During the winter, Abbott Park roads and sidewalks are salted for safety purposes. Because the ponds also serve a storm water retention function, this salt washes into the ponds and further increases concentrations of chloride and TDS. Additionally, road salt from off site streets and roads makes its way into the ponds. This is the reason the violations occur during the winter and early spring months, when the discharges from Outfalls 001 and 002 both commonly contain more than 500 milligrams per liter ("mg/L") of chloride and more than 1000 mg/L of TDS.

## **E. EFFORTS NECESSARY TO ACHIEVE COMPLIANCE AND ALTERNATIVES**

10. Petitioner correctly demonstrated the necessity of using road salt during the winter months for safety reasons. As described in its petition, Abbott Labs has experimented with alternate deicing options, only to find them impractical or prohibitively expensive. Road salt is widely accepted as the method for deicing roads and sidewalks.
11. Abbott Labs has experimented with using a mixture of salt and sand, only to discover this method caused an increase in debris and contamination in their facilities. Abbott Labs also investigated the possible use of a deicing material known as calcium magnesium acetate ("CMA"), which does not contain chloride. The cost of the CMA makes it economically impractical. Petitioner states that the cost per acre for deicing purposes for salt is \$42 and \$591 for CMA, which means that Petitioner would have spent approximately \$455,000 more during the winter of 1996-97 had it used CMA rather than salt to deice.
12. As noted in other proceedings before the Illinois PCB<sup>1</sup>, removing chloride and TDS from effluents can prove to be impractical. Petitioner identifies its least costly option as the installation and operation of a reverse osmosis treatment process preceded by an ultrafiltration system. Petitioner estimates the cost for installation to be \$750,000 and annual operation costs to be \$500,000. In view of the discussion below of any adverse environmental impacts being minimal, the Illinois EPA agrees that this places undue

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<sup>1</sup> See, in the matter of: Petition of Akzo Chemicals, Inc. for an Adjusted Standard from 35 Ill. 304.105 and 302.208, AS 93-8, September 1, 1994, and Marathon Oil Company, Petitioner v. Illinois Environmental Protection Agency, Respondent, PCB 91-173, October 7, 1993.



economic constraints on Abbott Labs.

#### F. PROPOSED ADJUSTED STANDARD

13. The Illinois EPA concurs with the language proposed for an Illinois PCB order granting the requested adjusted standard, with the exception of that which proposes relief from 35 Ill. Adm. Code 304.105.

#### G. IMPACT ON THE ENVIRONMENT

14. The impact to the Middle Fork stream environment is the key issue in this petition. The standards for chloride and TDS exist to protect aquatic organisms. Any adjusted standards would have to ensure that native and resident organisms are protected. There seems to be no doubt that the pond effluents have occasionally caused the stream to exceed water quality standards for chloride and TDS. Since these discharges have been occurring for several years, there exists the ability to directly measure any adverse impact on the stream.
15. Abbott Labs hired a consultant<sup>7</sup> to conduct a fisheries and benthic macroinvertebrate survey of the Middle Fork. The results of this study found a limited diversity, and therefore quality, of the fish community, which is typical for small streams in this area. The limiting factor to fish community quality is most likely the poor habitat found in this low gradient, channelized, headwater stream, and not impacts due to high TDS and chlorides. The fish

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<sup>7</sup> Gregory L. Seegert, EA Science, Engineering and Technology. Mr. Seegert's affidavit, professional profile and report are attached to the Petition as Exhibit 2.

species present are fairly tolerant to TDS and chloride, which is reflective of these species' tolerance to disturbed conditions, the primary facet being the marginal habitats present. Similar conclusions may be made for the macroinvertebrate populations present. The overall conclusion of the biotic surveys is that organisms in the stream are typical of local populations and appear to be suffering no adverse effects from the periodic episodes of higher TDS and chloride.

16. To better quantify the biological impact of its discharge, Abbott Labs has proposed a supplemental investigation by Mr. Seegert to take place in early, and again in late, spring. At these times, Abbott Labs would sample fish and benthos upstream of Outfall 001, below Outfall 002 and at the Route 176 intersection. The Illinois EPA agrees that this type of comparative study should provide a clearer understanding of any impacts associated with discharges from Abbott Park.
17. A 2,000 foot reach of the Middle Fork is requested to receive the adjusted standards. Many streams in this area that are in close proximity to highways will periodically exceed the general use TDS and chloride water quality standards. Although there is no practical way to determine the exact length of stream that is influenced by chloride and TDS from Abbott Labs, the 2,000 foot reach is a reasonable estimate.

#### H. JUSTIFICATION

The Illinois PCB must review the justification for a proposed adjusted standard pursuant to 35 Ill. Adm. Code 106.903. This rule provides that Abbott Labs must justify its adjusted

standard consistent with Section 27(a) of the Act, 415 ILCS 5/27(a)(1996). This provision of the Act requires the Illinois PCB to take into account five specified factors when promulgating regulations, including adjusted standards:

- a. the existing physical conditions;
- b. the character of the area involved including surrounding land use;
- c. zoning classifications;
- d. nature of the receiving water body; and
- e. the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution.

#### EXISTING PHYSICAL CONDITIONS

19. The receiving waterway in this area is a low gradient, channelized, headwater stream.

#### CHARACTER OF THE AREA INVOLVED, INCLUDING SURROUNDING LAND USES

20. The area surrounding Abbott Park is comprised of industrial facilities, corporate facilities and personal residences.

#### ZONING CLASSIFICATIONS

21. Abbott Labs has not specified the zoning classifications in the vicinity of the outfall. The Illinois EPA presumes that the area is properly zoned.

### NATURE OF THE RECEIVING WATER BODY

22. The Middle Fork of the North Branch of the Chicago River is a channelized stream classified as General Use Waters. It has been categorized as having a TQ10 of zero.

### TECHNICAL FEASIBILITY AND ECONOMIC REASONABLENESS

23. It is technically feasible to treat the ponds to reduce chloride and TDS concentrations in the effluent via the reverse osmosis treatment process identified in the Petition. Abbott Labs also mentioned that to install, operate and maintain this system would cost in excess of one million dollars, thereby placing substantial economic constraints on its operations. The Illinois EPA agrees that the implementation of a TDS and chloride treatment system would be economically infeasible for Abbott Labs. There are other available deicing compounds, such as the CMA identified by Abbott Labs in its Petition. Again, the cost of using CMA rather than salt for deicing purposes would place substantial economic constraints on Abbott Labs. Additionally, the Illinois EPA recognizes that the reduction or elimination of the use of road salt is impractical, and partly beyond the control of Abbott Labs.

### I. ADDITIONAL JUSTIFICATION FACTORS

24. The Illinois PCB regulation at 35 Ill. Adm. Code 106.903(a) further restates four additional factors specified in Section 28.1 of the Act, 415 ILCS 578.1(1996), to be proven by Petitioner:
- a. Petitioner's relevant factors are substantially and significantly different from the

factors relied upon by the Illinois PCB in adopting the general regulation applicable to Petitioner;

- b. that these factors justify an adjusted standard;
- c. the requested adjusted standard will not cause substantially or significantly more adverse environmental or health effects than those considered by the Illinois PCB in adopting the rule of general applicability; and
- d. the requested adjusted standard is consistent with any applicable federal law.

#### FUNDAMENTALLY DIFFERENT FACTORS

25. As stated above, the general applicability regulation adopted by the Board was one that would be sufficiently protective of aquatic life and public water supplies. The Middle Fork is not used as a source of drinking water, meaning public water supplies would not be affected. This is a fundamentally different factor than those considered by the Illinois PCB. In this case, the elevated TDS and chlorides concentrations are mainly the result of the use of road salt to deice roads and sidewalks. The cost of treatment of chlorides and TDS would be a fundamentally different factor than that considered by the Illinois PCB in adopting the chlorides and TDS limitations in 35 Ill. Adm. Code 302.208.

#### PETITIONER'S JUSTIFICATION

26. The Illinois EPA believes that the cost for chloride and TDS treatment, coupled with the

absence of a practical alternative doicing strategy, justifies the grant of the requested adjusted standard.

#### ADVERSE EFFECTS

27. The Illinois EPA believes there will be no measurable adverse effects on the receiving waterway from the grant of the requested adjusted standard. No designated or attained uses of the waterway will be impaired by this adjusted standard. The Illinois EPA does not foresee any adverse effects to the aquatic organisms whose habitat is the Middle Fork. In addition, the Middle Fork is not used as a source of drinking water, so there will be no adverse effects on any public water supply.

#### CONSISTENCY WITH FEDERAL LAW

28. The Illinois EPA asserts that the portion of the requested adjusted standard providing relief from the chloride and TDS water quality standards at 35 Ill. Adm. Code 302.208 is consistent with federal law. Relief from 35 Ill. Adm. Code 304.105, however, in addition to being unnecessary to solve the current dilemma of Abbot Labs, is believed to be contrary to federal law.
29. 40 CFR 122.4 states that:

No permit may be issued:

- a) When the conditions of the permit do not provide for compliance with the applicable requirements of the Clean Water Act, or regulations promulgated under the Clean Water Act.

These regulations include the State water quality standards under Section 302.208 or any adjusted standard the Illinois PCB adopts to augment these standards.

30. Also, at 40 CFR 122.44:

- D. Limitations must control all pollutants...which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard.

Again, federal law states that relief may not be granted carte blanc from water quality standards.

31. In the past, the Illinois PCB has granted relief from Section 304.105.<sup>3</sup> In this case, the Illinois EPA feels that relief solely from Section 302.208 is appropriate. At this time, Abbott Labs is the only permitted point source discharging to this length of the stream. If future dischargers wish to petition the Illinois PCB for an adjusted standard, then the cumulative effects should be handled at that time.

32. With the Illinois EPA's agreement that Section 302.208 standards should be granted, no further relief from the Illinois PCB regulations is needed. Relief from Section 304.105 would allow Abbott Labs to exceed the adjusted water quality standards for chloride (750

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<sup>3</sup> See, In the matter of Petition of the Rhone-Poulenc Basin Chemical Company, Thorn Creek Basin Sanitary District for an Adjusted Standard from 35 Ill. Adm. Code 302.201 and 304.105, AS 94-7, June 23, 1994; In the matter of Petition of the City of Springfield, Office of Public Utilities for an Adjusted Standard from 35 Ill. Adm. Code 302.208(e), AS 94-9, December 1, 1994; In the matter of Petition of Central Illinois Light Company (Dyck Creek Station) for Adjusted Standard from 35 Ill. Adm. Code 302.208 and 35 Ill. Adm. Code 304.105 regarding the Parameter Boron, AS 96-8, June 20, 1996; and In the matter of Petition of Illinois Power Company (Baldwin Power Plant) for Adjusted Standard from 35 Ill. Adm. Code 302.208 and 35 Ill. Adm. Code 304.105 regarding the Parameter Boron, AS 96-1, May 2, 1996.

mg/L.) and TDS (1,500 mg/L.) in the receiving stream. This addition to the relief requested is clearly unnecessary. The petition, the response and recommendation of the Illinois EPA and the order and opinion of the Illinois PCB will be forwarded to the USEPA for formal approval of the changed water quality standards.

#### I. HEARING

33. Abbott Labs has requested that hearing be waived.

#### CONCLUSION

As stated above, the Illinois EPA recommends a grant of an adjusted standard from the provisions of 35 Ill. Adm. Code 302.208 and a denial of an adjusted standard from the provisions of 35 Ill. Adm. Code 304.105 for Abbott Laboratories, Abbott Park facility, discharge of chlorides and total dissolved solids to the Middle Fork of the North Branch of the Chicago River for a reach of 2,000 feet.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By:

*Caryn H. Nadenbush*

Caryn H. Nadenbush  
Assistant Counsel  
Division of Legal Counsel

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