

ILLINOIS POLLUTION CONTROL BOARD  
September 25, 1986

IN THE MATTER OF: )  
 )  
PETITION FOR SITE SPECIFIC ) R85-11  
EXCEPTION TO EFFLUENT STANDARDS )  
FOR THE ILLINOIS-AMERICAN )  
WATER COMPANY, EAST ST. LOUIS )  
TREATMENT PLANT. )

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

PROCEDURAL HISTORY

This matter comes before the Board upon a petition for site-specific rulemaking filed on April 23, 1985, by Illinois-American Water Company ("Company"), a subsidiary of American Water Works Company. The Company requests that its East St. Louis water treatment plant be exempted from the effluent limitations relating to total suspended solids ("TSS") and total iron contained at 35 Ill. Adm. Code 304.124. The limitations found at 304.124 for these parameters are 15 mg/l and 2 mg/l, respectively.

Hearing was held in this matter on September 10, 1985, at the Sauget City Hall. Statements supporting the Company's petition were given at hearing by Senator Kenneth Hall (D-57th); Clyde Jordan, a Supervisor of East St. Louis Township, Commissioner of the East Side Health District, President of the East St. Louis School District 189 Board of Education, and businessman; and Jerry F. Costello, Chairman of the St. Clair County Board. The Board has also received 69 public comments supportive of the petition.

On February 14, 1986, the Illinois Environmental Protection Agency ("Agency") filed its comments regarding this matter. The Agency recommends that the site specific relief requested by the Company be denied.

The Illinois Department of Energy and Natural Resources issued a "Negative Declaration" of economic impact in this proceeding on March 4, 1986. The Economic Technical Advisory Committee concurred in that determination on March 7, 1986.

For the reasons discussed below, the Board declines to grant the regulatory change requested by the Company. The Company's petition will therefore be denied.

## BACKGROUND

The discharges at issue in this proceeding emanate from a facility known as the East St. Louis Treatment Plant ("Plant"), which is owned and operated by the Company. The Plant is located on the Mississippi River ("river") at mile 180.8, which is across from St. Louis, Missouri ("Evaluation of Wastes from the East St. Louis Water Treatment Plant and Their Impact on the Mississippi River", Lin, et. al., 1984, at 7; this document has been admitted onto the record in this proceeding as Petitioner's Exhibit 1, and will hereinafter be referred to as "Pet. Ex. 1").

Raw water is withdrawn from the river. The water is then purified and distributed to the homes and businesses of the Company's 14,000 customers in East St. Louis and 50,000 customers in surrounding areas (R. at 35). The Plant has a capacity to treat 56.6 million gallons per day ("mgd") of raw water, and during the period 1980-1984 treated an average of 43.7 mgd.

The Plant is served by two water intakes. One intake (the "low service" intake) is in the river near the Plant, about 15 miles downstream of the river's confluence with the Missouri River. The second intake is located in the river at Chouteau Island (river mile 192.0), about 10 miles upstream of the plant site and about five miles below the confluence of the Mississippi and Missouri Rivers.

Water from the Chouteau Island intake is treated by Dorr-Aldrich hydrotreaters. The hydrotreaters are circular clarifiers surrounded by a sand filter and topped by 4 inches of anthracite on top. Overflow from the clarifier portion enters the sand filter at the periphery. Each clarifier is equipped with mechanical equipment to remove accumulated sludge.

Water from the low service intake, as well as water blended from the two intakes, is treated by a conventional process. The first step of this process involves sending the water to a mixing tank where coagulants (usually alum, sometimes ferric chloride) and polymers (Nalco 8793, Nalco 8174, Magna floc 587C) used as supplemental coagulants or filter aids are added. Settling basins then remove the largest solids.

Solids accumulate at the bottom of the settling basins as sludge. Two of the four basins operated at the plant have mechanical equipment to remove the sludge. The other two basins are cleaned twice a year by draining them down to the sludge level and manually flushing the solids out with fire hoses (R. at 117). The resulting slurry is discharged by gravity drains to the river. The clarified water is then processed by mixed media filters. Each filter has 18 inches of granular carbon on top of 12 inches of sand. The filters are backwashed once or twice a day, and the backwash water is discharged to the river by gravity drains.

### TYPES AND VOLUME OF WASTE

The equipment utilized at the plant produces two different waste streams: backwash waste from the 20 conventional and seven Dorr-Aldrich filters which is discharged daily, and semi-annual discharges of accumulated solids from the four settling basins and seven Dorr-Aldrich clarifiers. Due to the differences between these waste streams, they will be discussed separately.

The 20 conventional filters used at the plant are each backwashed an average of 1.7 times per day, while the seven Dorr-Aldrich filters each receive 0.7 backwashes per day (Pet. Ex. 1 at 29). During each backwash cycle, a conventional filter releases approximately 100 pounds of suspended solids, while a Dorr-Aldrich filter releases about 150 pounds (Id. at 32). The total amount of dry solids discharged daily from the filter backwash operations is approximately 4,180 pounds (Id. at 35).

The amount of dry solids that accumulate daily in the sedimentation basins and the clarifier portions of the Dorr-Aldrich hydrotreaters totals 55,970 pounds and 22,280 pounds, respectively (Id.). Therefore, the daily dry solids residue in the basins and clarifiers totals approximately 78,250 pounds (Id.).

### ENVIRONMENTAL IMPACT

The Company commissioned the Illinois State Water Survey to undertake a study of the impact of the Company's discharges to the Mississippi River. The study (Pet. Ex. 1) concluded, inter alia, that

Except during 7-day 10-year low flow conditions, increases in suspended solids in the Mississippi River during occurrences of maximum waste discharges will not be perceptible. (Pet. Ex. 1 at 60).

The average flow past the Company's facility is estimated to be 177,000 cfs (Id. at 2), while the 7-day 10-year low flow of the Mississippi at St. Louis is 45,970 cfs (Id. at 39). The study also notes that although the composition of the bottom sediments of the impacted area of the Mississippi are altered, "there is no measurable blanket of sludge deposits" and the changes are "not a mark of environmental degradation" (Id. at 60). The impacted area is calculated to be 100 feet offshore and 4,000 feet downstream from the waste outfalls (Id. at 58). Within that area the composition of the bottom sediments are 0.6 percent gravel, 64.9 percent sand, and 34.5 percent silt (Id.). Natural Mississippi River bottom sediments, on the other hand, consist of 8 percent gravel, 92 percent sand, and no silt or clay (Id.).

The Agency, on the other hand, has expressed several concerns regarding the impact of the Company's discharges on the Mississippi. The Agency believes that the Company's discharges may violate certain other Board regulations, in addition to those for TSS and total iron. In furtherance of this contention the Agency submitted data compiled during March, 1974, from samples taken of, inter alia, the filter wash and basin sludge (Comments of the Illinois Environmental Protection Agency, hereinafter referred to as "Agency Comments"; the data are found in Agency Exhibit 1, attached to the Agency Comments). These data show excursions over the Board's standards for mercury, manganese, and five day biochemical oxygen demand (BOD<sub>5</sub>) (in violation of 35 Ill. Adm. Code 304.126, 304.124, and 304.120, respectively). These data also indicate high levels of total coliform in the Company's discharges<sup>1</sup>. The Company contends that the data are no longer valid due to changed conditions (R. at 160).

The record also contains more recent sampling data on these parameters. In response to Agency questioning at hearing, the Company agreed to provide current data on the levels of certain parameters in its discharges. Sampling conducted on the filter backwash water (from the conventional and Aldrich processes) and on the basin wash water during September and October, 1985, showed no violations of Board regulations for BOD<sub>5</sub>, fecal coliform, mercury, manganese, or copper (Memorandum in Support of Proposed Site-Specific Rule and Exception, hereinafter referred to as "Company Memorandum", at 12). However, sampling done of basin sediments at the Company's facility during that same period yielded the following information (this information is found in the Company Memorandum, Ex. 4):

Sediment Analysis  
(mg/l)

<u>Constituents</u>	<u>Basin Wash Discharge</u>	<u>Basin Sediments</u>	<u>Total Plant Discharge</u>
BOD (5 day)	13.2		6.4
Fecal Coliform (per 100 ml)	0		0
Mercury	0.0004	0.0002	0.00025
Manganese	2.24	72.90	0.44
Copper	0.10	1.20	0.04

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<sup>1</sup>The effluent bacteriological parameter utilized by the Board is fecal, rather than total, coliform. See 35 Ill. Adm. Code 304.121.

The Agency notes that these data "indicate the possibility of effluent standard violations for mercury<sup>2</sup>, manganese, and copper". The Agency emphasized that the data drawn from this basin sediment analysis should be of particular interest because "[they are] derived from sampling during periodic flushing of the basin and may be representative of long-term averages, whereas the data from daily backwashing is derived from several days and is more variable" (Agency Comments, at 3). The Company points out that it has responded to this potential problem by installing Lamella separators on the raw water intake line, at a capital cost of \$1.2 million (Illinois-American Water Company's Response to Agency Comments, hereinafter referred to as "Company Response", at 4). These separators are intended to remove sand and other solids from the raw water prior to potable water treatment, continuously returning these solids to the river (Id.). The Company believes the separators will reduce the solids loading of the basins by at least 25% (Company Response, at 5).

The Agency has highlighted several other concerns of an environmental nature. First, it alleges that the operations of the Company's plant concentrates the detectable amounts of mercury found in the Mississippi, and that the mercury contained in discharges of backwash water alone from the plant amounts to over 1.5 pounds per year (Agency Comments, at 3). Second, it believes the waste residual from the plant may contain hazardous materials and trace organics (Id.). Finally, the Agency notes that

With the exception of Alton Water Co. (PCB R82-3), the levels of suspended solids in Petitioner's waste are orders of magnitude higher than allowable in other permitted discharges in the state. Backwash maximum concentrations of TSS...range from 330 to 2,700 mg/l, with an overall average of 196 mg/l (Pet. Ex. 1, pp. 28,40). Basin wash water TSS "release concentration" was reported at 103,080 mg/l (Pet. Ex. 1, p. 40). (Id. at 3-4).

#### TREATMENT ALTERNATIVES

Information pertaining to the range of waste disposal alternatives available to the Company was introduced at hearing. Mr. Harry Herman, a senior planning engineer with the American Water Works Service Company, gave testimony on the six alternatives he studied and considered for use at the Company's plant. He listed the alternatives as:

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<sup>2</sup>The Board notes that the data do not appear to indicate any violation of 304.126, the effluent standard for mercury.

1. lagooning the waste at the plant site with natural dewatering;
2. mechanical dewatering at the plant (using centrifugal dewatering, filter-press dewatering, or plate-and-frame dewatering);
3. lagooning the waste at a remote site with natural dewatering and supernatant return to the plant (using barges or piping and pumping facilities to transport the waste to the remote site);
4. lagooning the waste at a remote site with natural dewatering but without supernatant return;
5. mechanical dewatering of the waste (using centrifugal, filter-press, or plate-and-frame dewatering) at a remote site, with disposal of the solids at the remote site and supernatant return to the plant; and
6. mechanical dewatering of the waste at a remote site with disposal of the solids at the remote site with no supernatant return. R. at 61-2.

Upon review, alternatives 3 and 5 were eliminated from further consideration because the cost of the facilities necessary to return the supernatant to the plant from any remote site would make that water more expensive than that treated at the plant (R. at 62). Alternative 6, mechanical dewatering at a remote location without supernatant return, was also dismissed as a possibility for the reason that the necessary facilities would be difficult and expensive to maintain (R. at 63).

Of the remaining alternatives (1, 2, and 4), mechanical dewatering (by centrifuge) at the plant site was indicated by Mr. Herman as the preferable alternative should the Company be required to install a treatment facility (R. at 67). He estimates this alternative would entail a capital cost of \$8.5 million and \$150,000 annually in operating expenses (R. at 67-8). Mr. Herman stated that the Company currently owns 18 acres of land on which the residue produced by this process could be disposed (R. at 68), but that the disposal capacity of that land (if used for this purpose) would be exhausted within eight years (R. at 69). After that time the residue would need to be trucked away (Id.).

The alternative recommended by Mr. Herman, alternative 2, is not the least expensive. Lagooning the waste at a remote site with natural dewatering but without supernatant return (alternative 4) would be the least costly. Depending on the remote site chosen (Millstadt, Illinois, or Columbia, Illinois), capital costs for this alternative (exclusive of land acquisition

costs) would be \$3.3 or \$3.43 million, respectively (Exhibits 1A and 1B). Annual operating costs for this alternative at either site would be \$151,332 (Exhibit 1B). Mr. Herman believes this alternative is not appropriate due to "problems with sludge settling in the transmission line, the questionable availability of land at affordable prices, and the very real liability risks relating to injury to children or others who trespass on our remote site" (R. at 66).

The alternative of lagooning at the treatment plant with natural dewatering was not recommended due to the large amount of acreage that would be required to satisfactorily accommodate the waste generated by the plant. Mr. Herman estimated that two 5-foot deep lagoons, each with a surface area of 29 acres, would be necessary (R. at 67).

In addition to the alternatives discussed above, the possibility of delivering the plant's waste to the regional sewage treatment facility was discussed by Mr. Herman at hearing. Due to the costs involved with this option (\$8.8 million capital cost and \$3.33 million annual operating cost), Mr. Herman described it as "the least reasonable or practical alternative of all" (R. at 70).

Though Petitioner believes that none of the treatment alternatives it examined are economically reasonable, it is true that all are technically feasible. A 1970 study by Evans et. al. of 114 water treatment plants in Illinois showed that about 43% of the plants discharged basin residues directly to lakes and streams, and that about 54% of the plants similarly discharged backwash waters (Pet. Ex. 1, at 38). About 16% of the plants discharged their waste to dry creeks (Id.). It can be assumed that the remaining plants applied some form of treatment to their waste streams. The study commissioned by the Company suggests that some changes in the practice of dealing with these wastes have likely occurred since 1970 (Id.), since alternative disposal methods such as sanitary sewer disposal, lagooning, mechanical dewatering, sand drying beds, and iron and aluminum recovery are available today (Id.).

Recent trends in handling water treatment plant wastes are illustrated in the following table, compiled in 1981 by Robertson and Lin from information collected in 1979-1980 (this data is excerpted from a document entitled "Waste Disposal From Water Treatment Plants", admitted onto the record in this proceeding as Board Exhibit 2). The data represents a survey of selected plants in the United States and Canada:

Waste Disposal Practice at Selected  
Plants in 1979-1980

<u>Plant</u>	<u>Design Capacity (MGD)</u>	<u>Sludge Disposal Method</u>	<u>Filter Washwater Disposal Method</u>
Lake Forest	10	San. Auth. <sup>3</sup>	Recycle
Evanston	72	San. Auth.	Recycle
Racine	40	San. Auth.	Recycle
Chicago (Jardine)	1440	San. Auth.	Recycle
Chicago (South)	720	San. Auth.	Recycle
Northbrook	14	San. Auth.	Recycle
Kenilworth	1.5	San. Auth.	Recycle
Glencoe	8	San. Auth.	Recycle
Green Bay	30	Lagoons	Recycle
Detroit			
(Springwells)	500	San. Auth.	Recycle
Toronto (Harris)	260	Lake	Lake
Toronto (Clark)	120	Lake	Lake
Toronto (Island)	110	N/A	Lagoon
Gary	54	San. Auth.	N/A
Louisville			
(Crescent Hill)	240	Lagoon	Recycle
Louisville (Payne)	60	N/A	Lagoon
Des Plaines	3	N/A	Lagoon

These data indicate that many plants similar to Petitioner's are applying various forms of treatment to their waste streams.

ECONOMIC HARDSHIP

Much of the argument for economic hardship as presented in the record deals with the depressed economic condition of the East St. Louis area. Mr. Robert Greaves, Vice-President and Manager of the Company, testified that 49.2% of all households in East St. Louis have incomes placing them below the poverty level (R. at 33). Mr. Clyde Jordan testified that almost 6,000 residents of East St. Louis Township receive general assistance (R. at 23). Mr. Jerry Costello added that East St. Louis has the highest unemployment rate in the state, and that the City's taxable assessed valuation fell from \$150 million in 1970 to \$36 million in 1980 (R. at 52). Many of the public comments received in this matter also reiterated the unfortunate economic condition of East St. Louis.

<sup>3</sup>Abbreviation for "Sanitary Authority".



Mr. Greaves noted that the Company would attempt to increase its rates by approximately 10% if required to construct and operate the facilities necessary to bring the plant into compliance (R. at 32). This calculation appears to be based on the assumption that the Illinois Commerce Commission, which has authority in such matters, would accept the Company's cost figures, would allow complete absorption of the costs by the customers, and that these costs would be equally prorated among the Company's customers<sup>4</sup>.

As the Company noted, the Illinois Commerce Commission determines rates which a company may charge its customers by district (R. at 29-30). The district in question is the Company's "Interurban District", which includes, among others, Belleville, Granite City, Caseyville, O'Fallon, Shiloh, Millstadt, Dupo, Columbia, Cahokia Water District, Mitchell and Pontoon Water Districts, and areas adjacent thereto (R. at 29, 44). Thus the Board notes that any costs which might warrant a rate increase would be expected to be shared among all customers in the Interurban District, not just the customers in East St. Louis.

#### FEDERAL LAW

The United States Environmental Protection Agency ("USEPA") has not yet promulgated regulations establishing effluent limitations on water treatment plant waste. In the absence of such regulations, effluent limitations are to be established on a case-by-case basis under 402(a)(1) of the Federal Water Pollution Control Act (hereinafter referred to as the "CWA"). Permits containing case-by-case effluent limitations are to be based on a permit writer's "best professional judgement" ("BPJ") (49 Fed. Reg. 38,025 (1984)). In discussing the application of BPJ to discharges from water treatment plants, USEPA has said that:

The particular technology used to determine BPJ technology-based effluent limits depends on the application of the statutory criteria for different levels of control, for example, best practicable or best conventional technology. These regulations are intended neither to ban such discharges nor to prohibit permit authorities from imposing such a ban in specific cases where this is the appropriate standard for control. (Id. at 38,027).

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<sup>4</sup>The Company's customers include both residential and commercial, industrial, and other utility customers. Approximately 40 to 45% of present revenues are derived from residential customers; the remainder is derived from the commercial, industrial, and other utility customers (R. at 39).

This directive from USEPA, being the most recent on the matter, appears to give the Board and the Agency (as permitting authorities) broad discretion in determining the appropriate standard of control to apply to discharges from water treatment plants.

#### THE ALTON PROCEEDING

Petitioner correctly notes that the circumstances presented here have some similarity to those of the Alton proceeding (Petition for Site Specific Exception to Effluent Standards For Alton Water Treatment Plant, R82-3, 57 PCB 139, March 8, 1984). That proceeding involved a water treatment plant owned by another subsidiary of American Water Works Company, the Alton Water Company. The Alton Water Company also draws raw water from the Mississippi River and sought exception from the Board's effluent limitations pertaining to TSS and total iron. The Board granted the requested relief to the petitioner there.

In the Alton proceeding the Board went to great lengths to point out the unique circumstances present there, and noted that it is "rather unlikely that two discharges would ever be so 'similarly situated' that a Board determination in one case would serve to control its determination in another" (57 PCB 139 at 149). The Board affirms this belief by noting that the instant matter is readily distinguishable from Alton. A principal distinction is in the volume of dry solids generated, which are approximately 82,430 and 12,500 pounds per day for the East St. Louis and Alton plants, respectively. The volume generated by the plant in question in this proceeding is therefore more than six times greater than that involved in Alton<sup>5</sup>. In addition, the capital costs for the treatment options selected in the instant matter and in Alton (\$8.5 and \$3 million, respectively) indicate a substantial difference in the cost of treatment per pound of dry solids. The Company can treat six times the solids at less than three times the cost that was present in Alton. Finally, the Alton plant, unlike the Company's plant, had no land available for adding facilities for treatment of suspended solids, much less their disposal, as negotiations to acquire such

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<sup>5</sup>The Board has considered the issue of partial relief for the Petitioner (i.e., requiring the Company to substantially reduce the volume of its discharge but allowing it to discharge at a level comparable to that allowed in Alton, for example). The Board was precluded from giving serious deliberation to such relief, however, due to statements made by the Petitioner. Specifically, the Company believes that treatment of a portion of the discharge would necessitate nearly identical capital costs as full treatment would require, with limited operating cost savings (Company Response, at 11).

land had proved fruitless. (This was a "special difficulty" of which the Agency took particular note).

#### CONCLUSION

In reaching the determination that the petition before it must be denied, the Board has taken many factors into consideration. Among these are consistency with environmental protection and technical feasibility and economic reasonableness. In cases of this type it is necessary to consider all of the various factors as a whole.

Among the factors contributing to the Board's decision is agreement with the position of the Agency regarding the seminal nature of this proceeding. The Agency's Comments forcefully communicate the belief that this proceeding is a seminal one in determining the level of treatment applicable to discharges in the water treatment plant industry:

The key point to be derived is that decisions on the appropriate level of technology for these wastes will continue to be made at the state level. This proceeding must establish the expected level of control in Illinois for this industry and do it in a way that allows other water treatment plants to plan for future needs. Otherwise, the Agency expects to see a series of these time and effort-consuming proceedings for a number of facilities. The Agency is supportive of a reasonable level of technology for all facilities. Complete relief should be restricted to the most extraordinary circumstances... To base relief solely upon the premise of no detectable impacts and alleged economic hardship undermines the basis of our effluent standards... There is no unreasonable or disproportionate economic hardship connected with achievement of existing discharge control requirements upon Petitioner. (Agency Comments at 11-13).

The Board agrees with the Agency that the position adopted by the Petitioner, that the Mississippi River has the assimilative capacity to handle the discharge and that treatment is expensive and therefore can be totally foregone, simply flies in the face of this State's technology-based effluent standards. The Company is in the business of processing a raw material, Mississippi River water, into a finished product, drinking water. During this process, waste materials are created. Like other businesses in the State whose operations create wastes, the Company is subject to regulations, which generally require the application of a varying degree of treatment to the waste in a manner consistent with the stated purpose of the Environmental Protection Act to "restore, protect

and enhance the quality of the environment..." (Section 2(b)). These effluent regulations are not based on the assimilative capacities of any stream. To accept the Petitioner's argument that treatment is unnecessary is to take a large step towards defeating the purpose of having a system of technology-based regulations in the first place. Moreover, the Board would add that granting the relief requested here would risk "opening the floodgates" on this type of dumping by water treatment plant operators along the Illinois reach of the Mississippi, let alone elsewhere in the State. Such a result would be unsupportable, but is especially so in the context of a stream as stressed by man as is the Mississippi.

The Agency desires this proceeding to "establish the expected level of control in Illinois for this industry and do it in a way that allows other water treatment plants to plan for future needs" (Agency Comments at 11). The Board is unable to provide any guidance of this nature in very precise terms in this proceeding; such matters are more appropriately dealt with in a general rulemaking than in a site-specific proposal. What is established here, however, is that no treatment is an unacceptable means of dealing with large-volume water treatment plant wastes.

As regards the specific rule proposed here by Petitioner, the Board's concern is in no small measure related to the staggering magnitude of waste material that is collected, concentrated, and discharged. As noted, the daily solids loading at the plant is approximately 82,430 pounds (41.2 tons). A daily solids loading of that level aggregates to over 30,000,000 pounds (15,000 tons) of dry solids discharged from Petitioner's facility to the Mississippi River on an annual basis. Certainly prohibiting the placing of this material back into the River is a significant step toward enhancing the quality of the environment.

The Board is no less troubled by the altered nature of the solids which are proposed to be discharged. Petitioner contends that it removes solids from the Mississippi as a consequence of its operations, and then simply "returns the sand and mud to the River". However, the record indicates that the discharges are not as innocuous as that. The Company uncontestably makes chemical additions to the solids during the processing of the water. An average of 10,820 pounds of alum, a coagulant utilized in water treatment, is added daily by the plant to the water withdrawn from the River<sup>6</sup>. Approximately 486 pounds per day of this material remains behind at the plant after the treatment process, and represents a portion of the daily solids

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<sup>6</sup>pet. Ex. 1 at 25. This figure represents a compilation of the alum used during operations of the plant's conventional process and its Dorr-Aldrich units.

generated<sup>7</sup>. Solids accumulated in the residue at water treatment plants additionally contain some substances at concentrations many times greater than the levels of those same substances in the stream (Fulton, "Disposal of Water Plant Alum Wastes", at 2; this document has been admitted onto the record in this proceeding as Board Exhibit 8). For example, the basin residue at the Company's plant contains an average iron level of 35,600 ppm, (Pet. Ex. 1, at 37). Of course, this level represents the quantity of iron found in the basin sediment itself, and is not the level found in the effluent which is discharged from the plant when the basins are flushed out. The addition of large volumes of water during the flushing process dilutes this level considerably. Even so, the estimated iron concentration in the wastestreams of basins 4 and 5, for example, is 3,790 mg/l (Pet. Ex. 1, at 41). When compared to the Board's 2 mg/l effluent limitation for iron found at 304.124, the very concentrated nature of this discharge becomes apparent. By way of further comparison, the average iron concentration in the Mississippi River is 3.2 mg/l (Id.).

Even if the Company were proposing to simply return unadulterated sand and mud to the Mississippi, this matter would not be one warranting site-specific relief. The Board believes that the Company does not possess a fundamental right, in this instance, to discharge pollutants simply because it has captured those pollutants during the course of its activities. Allowing the discharge of untreated water treatment plant waste would clearly not be in keeping with the spirit of the Act and would frustrate the objective to "restore, protect and enhance the quality of the environment".

Moreover, the Board's effluent limitations are based upon concentrations achievable with conventional treatment technology. It is assumed that in order to meet those limitations, a discharger will have to apply conventional technology in some form. The primary codified exception to this philosophical approach is found at 35 Ill. Adm. Code 304.103 (Background Concentrations), which reads in full as follows:

Because the effluent standards in this Part are based upon concentrations achievable with conventional treatment technology which is largely unaffected by ordinary levels of contaminants in intake water, they are absolute standards that must be met without subtracting background concentrations. However, it is not the intent of these regulations to require users to clean up contamination caused essentially by

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<sup>7</sup>Pet. Ex. 1 at 25. This figure represents a compilation of the solids generated (as a result of alum coagulation) by the plant's conventional process and Dorr-Aldrich units.

upstream sources or to require treatment when only traces of contaminants are added to the background. Compliance with the numerical effluent standards is therefore not required when effluent concentrations in excess of the standards result entirely from influent contamination, evaporation, and/or the incidental addition of traces of materials not utilized or produced in the activity that is the source of the waste.

This exception is not applicable to discharges such as those emanating from water treatment plants, and the Board has in fact previously held that section 304.103 does not apply to the Company's operations. East St. Louis and Interurban Water Co. and Alton Water Co. v. Illinois Environmental Protection Agency, PCB 76-297, 298 (consolidated) involved appeals filed by the Company (as it was then known) and the Alton Water Co. of denials of operating permits by the Agency. Both companies contended there that the Rule 401(b) (now section 304.103) exception to the numerical effluent limitation for concentrations caused by influent contamination should apply to them. The Board found that:

Rule 401(b) clearly exempts effluent concentrations which are a result of influent contamination. In the present case, Petitioners deliberately concentrate the suspended solids in their effluent by removing the water...The Board finds that the concentration of suspended solids in Petitioners' effluent is not a result of either influent contamination, evaporation or the addition of trace amounts of materials and that Rule 401(b) did not intend to exempt effluents in which contaminants were deliberately concentrated. Therefore, Rule 401(b) does not apply (24 PCB 801 at 803; emphasis as in original).

The Board has already noted that compliance in this instance is technically feasible (see p. 7). Given the enormity of the environmental matters at issue here, the Board also believes that it is not unreasonable for the Company to treat to the degree necessary to come into compliance with existing standards. Economic reasonableness is determined in part by considering the cost of control relative to the amount of environmental benefit to be gained. In the instant matter the environmental gain is of such magnitude as to justify the cost.

An additional facet of economic reasonableness is the ability of the responsible party to bear the cost. The record stresses the poor economic conditions within East St. Louis as the controlling element of ability to bear the cost. However, even assuming that all costs could be passed on to the customers of the Company, the record indicates that the Company's customers

in East St. Louis constitute but 14,000 of the Company's 64,200 service connections in the Interurban District (R. at 35). East St. Louis service connections therefore constitute approximately 22% of the total number. Moreover, some of the non-East St. Louis service connections are to municipalities and other water districts. These are considered by the Company as single connections, even though they "might serve a population of five or ten thousand" (R. at 43). Therefore, a more appropriate perspective of the role of East St. Louis in the Company's service area is based on population data. In this regard, the Company notes that it serves an Interurban District population of approximately 350,000 (R. at 43), which compares with an East St. Louis population of approximately 55,000. On this basis, the residents of East St. Louis constitute less than 16% of the population served by the Company. Furthermore, the majority of the Company's revenue is derived from the sale of water to non-residential users. Approximately 55% to 60% of the Company's revenue represents sales to commercial and industrial users and other utilities, with the remainder representing residential revenue (R. at 39). Assuming, arguendo, that the costs of the necessary improvements would be equally borne by all residents in proportion to this revenue ratio, the contribution of East St. Louis residents would be less than 7% of the total.

Moreover, while the economic situation of the East St. Louis area and its residents have been amply demonstrated, the economic situation of the Company, a for-profit corporation, has not. The Company has presented no data indicating whether, as a good corporate citizen but consistent with its duty to provide a reasonable return on investment to Company shareholders, it has the ability a) to absorb any or all compliance costs, or b) otherwise reduce that impact on the users. This record does not support the notion that a 10% rate increase would actually take place. Rather, the Company simply asserts such would occur. The 10% across-the-board rate increase envisioned by the Company would appear to be a worst case scenario. The best case impact on East St. Louis cannot be assessed by the Board, due to the selective manner in which data have been presented by the Company. The Board suspects that the full facts of this situation can be obtained only in the context of a proceeding before the Commerce Commission. Nevertheless, should the Commerce Commission hold that some rate increase is justified, the Board trusts that the Company would fully assist local or state officials in any effort to tap funding sources or otherwise relieve the financial burden on its economically distressed users.

Given all these circumstances, the Board is unable to reach the conclusion that it is economically unreasonable for the Company to provide the necessary improvements.

Finally, the Board wishes to emphasize that in denying the Company's petition it does not do so without great consideration of the depressed economic conditions within parts of the service area of the Company, and particularly within East St. Louis. This matter has, indeed, weighed heavily with the Board. However, in the final analysis it is the Board's responsibility to strive toward a quality environment for all, for economically depressed citizens as well as for citizens of more fortunate circumstances. The Board believes that today's action of denying the Company's petition is a necessary step in that direction.


ORDER

The April 23, 1985, petition for site-specific exception to effluent standards for the East St. Louis Water Treatment Plant is hereby denied.

IT IS SO ORDERED.

Board Member J. Theodore Meyer voted present.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 25<sup>th</sup> day of September, 1986, by a vote of 5-0.

  
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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board