

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

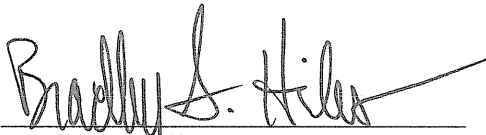
IN THE MATTER OF:	)	
	)	
PROPOSED EXTENSION OF ADJUSTED STANDARD	)	AS 06-_____
APPLICABLE TO ILLINOIS-AMERICAN	)	(Adjusted Standard)
WATER COMPANY'S ALTON PUBLIC WATER	)	
SUPPLY FACILITY DISCHARGE	)	
TO THE MISSISSIPPI RIVER	)	


NOTICE OF FILING

PLEASE TAKE NOTICE that on October 31, 2006, the PETITION FOR EXTENSION OF ADJUSTED STANDARD and the MOTION TO INCORPORATE BY REFERENCE THE PETITION FOR ADJUSTED STANDARD FILED IN DOCKET NUMBER AS 99-6, AND THE SITE SPECIFIC IMPACT STUDY ACCEPTED INTO EVIDENCE IN DOCKET NUMBER AS 99-6, INTO PETITIONER'S PETITION FOR ADJUSTED STANDARD PURSUANT TO 35 ILL. ADM. CODE 101.306(a) were filed with the Clerk of the Pollution Control Board. A copy of each is herewith served upon you.

Respectfully submitted,

ILLINOIS-AMERICAN WATER COMPANY

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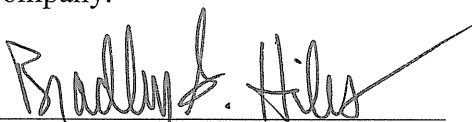
Attorneys for Petitioner

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APPEARANCE

I hereby file my appearance in this proceeding on behalf of Petitioner, Illinois-American Water Company.




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**PETITION FOR EXTENSION OF ADJUSTED STANDARD**

Petitioner, Illinois-American Water Company ("Illinois-American"), by its attorneys Bradley S. Hiles and Alison M. Nelson, pursuant to Section 28.1 of the Illinois Environmental Protection Act ("the Act"), 415 Ill. Comp. Stat. 5/28.1 and Part 104 of the Procedural Rules of the Illinois Pollution Control Board ("Board"), 35 Ill. Adm. Code Part 104, respectfully requests the Board to adopt an extension of Adjusted Standard 99-6, the adjusted standard now applicable to Illinois-American's public water supply treatment facility in Alton, Illinois (the "Alton facility"). Adjusted Standard 99-6, which is scheduled to expire on October 16, 2007, provides that the effluent standard for offensive discharges at 35 Ill. Adm. Code 304.106, the effluent standard for total suspended solids (TSS) at 35 Ill. Adm. Code 304.124, and the effluent standard for total iron at 35 Ill. Adm. Code 304.124 shall not apply to discharges from the Alton facility, and that the general use water quality standard for offensive discharges at 35 Ill. Adm. Code 302.203 shall not apply to a one mile stretch of the Mississippi River which receives effluent from the Alton facility and is immediately downstream from the Alton facility's discharge.

**SUMMARY OF THE CASE AND THE ISSUE PRESENTED**

Adjusted Standard 99-6 (sometimes referred to as "AS 99-6") was issued by the Board, in large part, because of a sediment reduction project now known as the Piasa Creek Watershed Project (sometimes referred to as "PCWP" or "the Project"). Funded by Illinois-American at a

rate of \$415,000/year for ten years, the Project was expected to reduce soil loading into the Mississippi River by two tons for every one ton of solids in the Alton facility's effluent. Not knowing whether the 2 to 1 offset would be attained, the Board inserted two safeguards in AS 99-6. First, the Board obligated Illinois EPA to assess the effectiveness of the Project at the five-year mark (roughly October, 2005) to determine if the Project was on pace to reach its 2 to 1 objective by the end of the ten year period. Second, the Board imposed a seven-year sunset provision into AS 99-6, in case the Project fails to meet expectations.

The issue in the present proceeding is whether the Piasa Creek Watershed Project has been effective enough after five years that the 2 to 1 offset will likely be achieved by the end of the ten year period. The answer is simple and cannot be disputed. The Project has already achieved its goal — a savings of 6,600 tons of soil — four years ahead of schedule. In fact, the Project is a model of success which has been showered with accolades statewide (*i.e.* the Governor's Pollution Prevention Award) and nationally. Furthermore, the Project has achieved an additional result that was not initially contemplated by AS 99-6 or Illinois-American: total iron loading from the Piasa Creek Watershed has been reduced so significantly that the offset ratio from the Alton facility in recent years is no less than 3.8 to 1 (and perhaps as great as 8.8 to 1) for that metal. Further reductions will be achieved as Illinois-American continues to fund the Project into 2010. The TSS reductions attained by the Project will be sustained through stewardship activities completed on the lands owned, leased, or under cooperative agreement with Great Rivers Land Trust ("GRLT"), a local non-profit land trust.

With AS 99-6, the Board set in motion a cooperative effort among a public water supplier, the state's environmental protection agency, and a non-profit land trust that has

achieved remarkable success and has exceeded the expectations of all stakeholders years ahead of schedule. Accordingly, AS 99-6 should be extended indefinitely.

## I. BACKGROUND

1. Illinois-American Water Company operates a public water supply treatment facility in Alton, Illinois, in Madison County. This public water supply treatment facility (the “Alton facility”) is located along the Mississippi River near River Mile 204. Illinois-American constructed the Alton facility in 1999 and 2000 to replace an aged facility previously located at that site (the “previous facility”), which was inundated by the Mississippi River in 1993 and threatened again in 1995. The Alton facility was constructed across a highway from the previous facility, and was constructed on the top of a bluff to minimize the potential for future flooding.

2. In connection with the construction of the Alton facility, Illinois-American filed a petition on March 19, 1999, for an adjusted standard from the generally-applicable effluent standards for offensive discharges, total suspended solids, and total iron, and from the general use water quality standard for offensive conditions (the “March 1999 Petition”). The March 1999 Petition was offered and received by the Board in a previous proceeding, In the Matter of: Petition of Illinois-American Water Company’s Alton Public Water Supply Replacement Facility Discharge to the Mississippi River for an Adjusted Standard from 35 Ill. Adm. Code 302.203, 304.106, and 304.124 (Sept. 7, 2000), AS 99-6.<sup>1</sup>

3. As part of the March 1999 Petition, Illinois-American submitted a Site-Specific Analysis of Impacts of Potential Alternatives for Handling Public Water Supply Residuals at Proposed Alton, IL Facility (the “Site Specific Impact Study” or “SSIS”) prepared by ENSR, an environmental consulting and engineering firm, dated March 1999. The purpose of the Site

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<sup>1</sup> By separate written request filed on the date of this Petition, Illinois-American has moved to incorporate by reference the March 1999 Petition into evidence in the present proceeding pursuant to 35 Ill. Adm. Code 304.106.

Specific Impact Study was to provide the Board with sufficient information regarding the environmental impact, technical feasibility, and economic reasonableness of the potential alternatives to treat discharges from the Alton facility; to satisfy state and federal requirements under various substantive and procedural statutes; and to address Illinois Environmental Protection Agency (“IEPA” or “the Agency”) concerns about the new facility. The Site Specific Impact Study was offered to and received in evidence by the Board in a previous proceeding, In the Matter of: Petition of Illinois-American Water Company’s Alton Public Water Supply Replacement Facility Discharge to the Mississippi River for an Adjusted Standard from 35 Ill. Adm. Code 302.203, 304.106, and 304.124 (Sept. 7, 2000), AS 99-6.<sup>2</sup>

4. On September 7, 2000, the Board adopted Adjusted Standard 99-6, which provided that the effluent standard for offensive discharges at 35 Ill. Adm. Code 304.106 and the effluent standard for total suspended solids (TSS) at 35 Ill. Adm. Code 304.124 shall not apply to discharges from the Alton facility, and that the general use water quality standard for offensive conditions at 35 Ill. Adm. Code 302.203 shall not apply to a one mile stretch of the Mississippi River which receives effluent from the Alton facility and is immediately downstream from the Alton facility’s discharge. Opinion & Order of the Board, In the Matter of: Petition of Illinois American Water Company’s Alton Public Water Supply Replacement Facility Discharge to the Mississippi River for an Adjusted Standard from 35 Ill. Adm. Code 302.203, 304.106, and 304.124 (Sept. 7, 2000), AS 99-6 at 21 (“Opinion & Order of the Board dated Sept. 7, 2000”).

On October 19, 2000, the Board issued an order modifying AS 99-6 to provide that the effluent

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<sup>2</sup> Petitioner believes it is unnecessary to rehash all of the findings and conclusions from the SSIS in the present proceeding, which has the success of the PCWP as its primary focus. However, Petitioner also recognizes that the Board’s procedures do not have a focused process for Extension Petitions. Therefore, since the SSIS has already been accepted into evidence by the Board, Petitioner has moved by a separate written request filed on the date of this Petition to incorporate by reference the Site Specific Impact Study into evidence in the present proceeding pursuant to 35 Ill. Adm. Code 304.106. Findings and conclusions from the SSIS, to the extent relevant in this proceeding, remain reliable today. *See* Affidavit of Alley Ringhausen (attached to this Petition

standard for total iron at 35 Ill. Adm. Code 304.124 also shall not apply to discharges from the Alton facility. Order of the Board, In the Matter of: Petition of Illinois-American Water Company's Alton Public Water Supply Replacement Facility Discharge to the Mississippi River for an Adjusted Standard from 35 Ill. Adm. Code 302.203, 304.106, and 304.124 (Oct. 19, 2000), AS 99-6 at 5 (“Order of the Board dated Oct. 19, 2000”).

5. As a condition of AS 99-6, the Board required Illinois-American to enter into a contract with GRLT for a sediment loading reduction project to be managed by GRLT. *See* Opinion & Order of the Board dated Sept. 7, 2000 at 5. This sediment loading reduction project has come to be known as the Piasa Creek Watershed Project. The Board required the contract to specify that Illinois-American must provide a minimum of \$4,150,000.00 to GRLT for the Project. *Id.*

6. The goal of the Piasa Creek Watershed Project is to reduce sedimentation in the 78,000 acre Piasa Creek Watershed, located in portions of Jersey, Madison, and Macoupin counties, by approximately 6,600 tons of soil per year by the year 2010.<sup>3</sup> The Piasa Creek discharges into the Mississippi River approximately 5.5 miles upstream from the point at which the Alton facility discharges into the River. The 6,600 tons in sedimentation reductions, if achieved, would represent a 2 to 1 offset of the 3,300 tons of TSS that were anticipated to be present in the Alton facility's effluent. That is, the Piasa Creek Watershed Project, if successful, would prevent two tons of soil from entering the Mississippi River for every one ton of TSS that Illinois-American's Alton facility was anticipated to discharge into the River each year.

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as Attachment A), at ¶¶12–13; Affidavit of Howard O. Andrews, Jr. (attached to this Petition as Attachment E), at ¶¶2, 4–5; Affidavit of Paul Keck (attached to this Petition as Attachment D), at ¶¶3, 6–8.

<sup>3</sup> The goal was established in the contract between Illinois-American and the Great Rivers Land Trust. (*See* Piasa Creek Watershed Report, Attachment B to the Petition, at Appendix 1, p. 5). Illinois-American entered into that contract as a condition of AS 99-6.



7. The Board's September 7, 2000 Order directs the Agency to make a determination of the Project's effectiveness after five years, which coincides with the renewal of Illinois-American's NPDES permit for its Alton facility. *See* Opinion & Order of the Board dated Sept. 7, 2000 at 16. In its Order dated October 19, 2000, the Board extended the deadline for this review to reflect the time that had passed since its September 7, 2000 Order was adopted. *See* Order of the Board dated Oct. 19, 2000 at 5.

8. The Board's September 7, 2000 Order also provides that if the Project is showing signs of success by the five year mark, Illinois-American will continue to fund the second half of the ten year project. *See* Opinion & Order of the Board dated Sept. 7, 2000 at 16. (Illinois-American has continued to fund the Project since the five-year anniversary.) In addition, that Order provides that if the Project is not showing signs of success at that time, the Agency will either give Illinois-American a set amount of time to fix the Project, or will require Illinois-American to treat the effluent from the new facility as a condition for Illinois-American to receive a new NPDES permit. *Id.* (The Agency has not imposed either obligation on Illinois-American because the Project has shown signs of success.) The Agency's Final Brief in the initial proceeding before this Board regarding AS 99-6 similarly notes that "in the case of an insurmountable failure of the program the Agency will require treatment of the water plant's effluent" as a permit condition. IEPA, Final Brief of Illinois Environmental Protection Agency, Proposed Adjusted Standard Applicable to Illinois-American Water Company's Public Water Supply Replacement Facility Discharge to the Mississippi River (June 20, 2000), AS 99-6 at 5.

9. The Piasa Creek Watershed Project has been remarkably successful. As of the five year mark on October 19, 2005, the Project had achieved a savings of approximately 6,487 tons of soil per year. *See* Affidavit of Alley Ringhausen (attached to this Petition as Attachment

A) at ¶5. So, at the Project's half-way point in 2005, the ten-year goal had nearly been achieved. As of October 12, 2006, the Project has already surpassed the ten-year goal, by achieving a savings of approximately 6,691 tons of soil per year. *Id.* Mr. Alley Ringhausen, Executive Director of GRLT, estimates that by 2010, the Project will achieve a savings of no less than 10,000 tons per year, and may save as much as 12,000 to 15,000 tons per year. *Id.* As a result of its success in achieving such savings, the Project has received the 2002 Illinois Governor's Pollution Prevention Award as well as numerous other awards from nationally-recognized environmental organizations. *Id.* at ¶8. The national awards bestowed on the Piasa Creek Watershed Project include:

- the Trees Forever National Award for the Business/Education/Nonprofit Category, which is awarded to one business or organization that has improved water quality and promoted land stewardship;
- a National Resource Conservation Service's Conservation Academy Award, which is awarded in recognition of conservation-related achievements;
- a U.S. Department of Agriculture Earth Team Volunteer Program Award, which is awarded to organizations that achieve a certain level of volunteer participation; and
- one of three Soil and Water Conservation Society's National Merit awards, which are given in recognition of an outstanding project by an organization that promotes conservation of soil, water, and related natural resources.

10. But the Piasa Creek Watershed Project is far more successful than these numbers indicate. As noted above, the Project has already achieved this 6,600 ton mark. The actual amount of TSS in the Alton facility's effluent is, however, far lower than anticipated. While the

6,600 ton goal is based on the estimate that the Alton facility would discharge approximately 3,300 tons of TSS each year, this estimate was based on predicted operating conditions, and the actual operating conditions at the facility differ from those predicted. *See* Affidavit of Paul Keck (attached to this Petition as Attachment D) at ¶15. If this estimate had been calculated using the actual operating conditions at the facility, the estimated tons of TSS discharged each year would have been 1,545.<sup>4</sup> *Id.* Using this estimate calculated on the basis of actual operating conditions at the facility, the reductions achieved so far by the Project have resulted in an offset of 4.3 to 1.

11. This Petition relies on the estimated tons of TSS discharged (1,545) to calculate the offset for the reductions achieved so far by the Project because this estimate is based on the same formula previously utilized before this Board, but incorporates data reflecting actual operating conditions of the facility. However, another set of data could also be utilized to examine TSS loading. This data was generated by a mandate imposed by Illinois EPA, under which Illinois-American must collect and analyze grab samples each month as a condition in the facility's NPDES permit. *See* Affidavit of Paul Keck at ¶21. Illinois-American's practice is to collect these grab samples on a random day each month during times of discharge from Superpulsator blowdown and filter backwash events. *Id.* This practice presents a worst case scenario of TSS and total iron in the Alton facility's effluent, as the TSS in Illinois-American's effluent is higher during such events. *Id.* Based on the data generated from the 59 grab samples collected from the Alton facility between February 2001 and December 2005, approximately 1,333 tons of solids are discharged in the facility's effluent each year. *See id*; Evaluation of Residuals (attached to this Petition as Attachment C) at 3.<sup>5</sup> Illinois-American is not advocating

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<sup>4</sup> The calculation of this estimate is outlined in further detail, below. *See* ¶¶49-50.

<sup>5</sup> It is important to note, however, that the facility optimized its operations in 2002 by decreasing the time between operational maintenance events such as blowdowns from the Superpulsator. *See* Affidavit of Paul Keck at ¶10. If only the data from 2002-2005 is considered, the tons of TSS discharged from the facility each year is 691. *See* Evaluation of Residuals at 5.

use of this grab sample data in establishing the tons of solids discharged from the facility, because the estimate of 1,545 tons presents a more conservative estimate of the tons of TSS in the facility's effluent and is based on a greater number of samples. However, that data is consistent with the 1,545 ton estimate, *see* Affidavit of Paul Keck at ¶21, which further validates the estimate of TSS discharged.

12. As of the date of this Petition, the Project has also achieved an environmental benefit which was not specifically planned but is of significant value and relevance. Sedimentation reductions have reduced the total iron discharged to the Mississippi River by approximately 79 tons of total iron per year. *See* Evaluation of Residuals at 4. NPDES monthly monitoring data for the facility indicates that the Alton facility discharges an average of 21 tons of iron per year.<sup>6</sup> *Id.* This annual offset of approximately 3.8 to 1 will prevent nearly four tons of total iron from entering the Mississippi River for every one ton of total iron that the Alton facility discharges into the River each year. *Id.* at 5. Data collected by Black & Veatch in a recent sampling supports the conclusion, however, that the amount of iron discharged from the facility is far lower than may be gleaned from NPDES monthly monitoring data. Based on Black & Veatch's study, Illinois-American's discharge contains an average of only 9 tons of iron each year, which represents an offset of approximately 8.8 to 1. *Id.* The NPDES data from 2002 through 2005 (i.e., that data collected after optimization of the facility's operations) generally supports this figure; based on that data, Illinois-American's discharge contains an average of 12.5 tons of iron each year, which represents a 6.3 to 1 offset. *Id.*

13. TSS reductions achieved by the Piasa Creek Watershed Project will be sustained through stewardship activities completed on the lands owned, leased, or under cooperative

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<sup>6</sup> Illinois-American does not measure the amount of iron in the facility's influent, so an estimate for the amount of iron predicted to be discharged from the facility is not available.

agreement with GRLT. *See* Affidavit of Alley Ringhausen at ¶6. In other words, an offset of at least 2 to 1 for total suspended solids for the calendar year in question and the four preceding calendar years will be maintained year after year. Although additional funding by Illinois-American will be required for some period of time after the expiration of the ten-year agreement between Illinois-American and GRLT, and Illinois-American will provide such funding, the Project is expected to reach a point at which it will be sustainable without future funding from outside sources. *See id.*

14. The Board's October 19, 2000 Order imposes a seven-year sunset provision on Adjusted Standard 99-6, and provides that Illinois-American must request an extension of the Adjusted Standard past its seventh year. *See* Order of the Board dated Oct. 19, 2000 at 4-5. Adjusted Standard 99-6 will therefore expire on October 16, 2007 unless the Board grants Illinois-American an extension to Adjusted Standard 99-6, as requested in this Petition. *Id.* at 5.

15. Based on the renewal provisions in the Board's Orders dated September 7, 2000 and October 19, 2000, and on the overwhelming success of the Piasa Creek Watershed Project, the Board should approve this Petition and adopt an extension of Adjusted Standard 99-6.

16. A new sunset provision providing for expiration of the adjusted standard in a set number of years is not necessary under these circumstances. In other adjusted standard proceedings, this Board has identified several factors that justify use of such a sunset provision to allow the Board to revisit a case. *See, e.g., In the Matter of: Petition of PDV Midwest Refining, L.L.C. for a Site-Specific Rulemaking Amendment to 35 Ill. Adm. Code 304.213* (Dec. 17, 1998), R98-14 at 3 (including a sunset provision when such a provision would encourage the petitioner to take advantage of new technology and to continually explore methods to lower its effluent levels); *In the Matter of: Proposal of Union Oil Company of California to Amend the*

Water Pollution Regulations (March 19, 1987), R84-13 at 12 (including a sunset provision when the water quality of the receiving stream was expected to change in the near future, when granting permanent relief would remove any incentive for the petitioner to improve its effluent quality, and when the petitioner's evaluation of alternatives was not detailed enough to conclusively rule out all alternatives); In the Matter of: Site-Specific Rulemaking for the Sanitary District of Decatur, Illinois (Jan. 23, 1986), R85-15 at 7 (noting that there may be merit in considering sunset provisions when granting permanent relief would utilize a portion of the receiving water that would not then be available to future dischargers). Relief of an indefinite duration is appropriate in this case because none of the above factors are present. The conditions in the Piasa Creek Watershed and the Mississippi River are not likely to change in the near future, and Illinois-American's Site-Specific Impact Study was comprehensive enough to rule out other alternatives. In addition, the Piasa Creek Watershed Project actually reduces the amount of TSS and iron in the Piasa Creek Watershed and in the Mississippi River and creates capacity in the receiving waters for future dischargers. Therefore, exploration of new technologies or alternative methods to reduce the amount of TSS and iron in Illinois-American's effluent is not necessary.

17. Permanent relief is also appropriate on these facts because Illinois-American has successfully enhanced water quality in the Mississippi River above even the most ambitious expectations, and this Board has granted permanent relief to petitioners on lesser grounds. *See, e.g., In the Matter of: Proposal of Mobil Oil Corporation to Amend the Water Pollution Regulations* (Feb. 5, 1987), R84-16 at 8 (holding that a sunset provision was not necessary when the petitioner's discharge was "quite close" to the regulation of general applicability).

18. Finally, requiring submission to the Board of annual reports reflecting the soil savings of the Project and conditioning the adjusted standard on satisfaction of certain conditions (such as ensuring that the average offset for the calendar year in question and the four preceding calendar years is not reduced below a 2 to 1 offset for total suspended solids), rather than including a sunset provision, would allow this adjusted standard to remain in place until the Board determines that the adjusted standard is no longer successfully reducing the TSS loading to the Mississippi River. This Board has approved the use of a reporting requirement in other adjusted standard proceedings, provided that the Board retains some oversight over the petitioner's compliance with the standard. *See, e.g.,* In the Matter of: Amendments to Water Quality and Effluent Standards Applicable to the Chicago River System and Calumet River System (March 24, 1988), R87-27 at 23 (including a reporting requirement); In the Matter of: Site Specific Rule for City of Effingham Treatment Plant Fluoride Discharge, 35 Ill. Adm. Code 304.233 (July 24, 2003), R03-11 at 9 (granting permanent relief, but noting that the Board would revisit the standard if the passage of time reveals that the proposed water quality standards are not being met).

## II. INFORMATIONAL REQUIREMENTS

19. Neither the Illinois Environmental Protection Act (the "Act") nor the Board's rules establish a separate procedure for an extension to an adjusted standard. This Petition therefore satisfies the requirements for an initial petition for an adjusted standard as required by Section 28.1 of the Act and Subpart D of Part 104 of the Board's procedural rules.

20. Section 28.1 of the Act provides that after the Board adopts a regulation of general applicability, the Board may grant, in a subsequent adjudicatory determination, an adjusted standard for persons who can justify such an adjustment consistent with Section 27 of the Act. 415 Ill. Comp. Stat. 5/8.1(a). Section 27 of the Act provides in pertinent part as follows:

In promulgating regulations under this Act, the Board shall take into account the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the . . . receiving body of water, as the case may be, and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution.

415 Ill. Comp. Stat. 5/27(a).

21. Section 28.1 of the Act also provides that the Board shall adopt procedures applicable to adjusted standard determinations. 415 Ill. Comp. Stat. 5/28.1(d). The Board adopted such procedures at Subpart D of Part 104 of the Board's procedural rules. Section 104.406 (the section of Part 104 that establishes requirements for the contents of a petition for an adjusted standard) lists several categories of information that must be included in each petition. Each of these categories is discussed in greater detail, below.

22. Section 28.3 of the Act also lists several factors that should be considered in an adjusted standard proceeding for the direct discharge of waste solids to the Mississippi or the Ohio Rivers from clarifier sludge and filter backwash generated in the water purification process by any public water supply utilizing the Mississippi or the Ohio Rivers as its raw water source that does not utilize lime softening in the purification process. 415 Ill. Comp. Stat. 5/28.3(a).

That Section provides as follows:

Justification based upon discharge impact shall include, as a minimum, an evaluation of receiving stream rations, known stream uses, accessibility to stream and side land use activities (residential, commercial, agricultural, industrial, recreational), frequency and extent of discharges, inspections of unnatural bottom deposits, odors, unnatural floating material or color, stream morphology and result of stream chemical analyses. Where minimum impact cannot be established, justification shall also include evaluations of stream sediment analyses, biological surveys (including habitat assessment), and thorough stream chemical analyses that may include but are not limited to analysis of parameters regulated in 35 Ill. Adm. Code 302.



415 Ill. Comp. Stat. 5/28.3(c). However, that Section, by its terms, applies only to petitions submitted no later than January 1, 1991. 415 Ill. Comp. Stat. 5/28.3(b). This Board has noted that it will therefore examine these factors only to the extent relevant to an examination of the factors at Section 28.1(c) of the Act. *See* Opinion & Order of the Board dated Sept. 7, 2000 at 6.

**A. Standard from which an Adjusted Standard is Sought**

23. Section 104.406(a) of the Procedural Rules provides that the petition must contain a statement describing the standard from which an adjusted standard is sought. This must include the Illinois Administrative Code citation to the regulation of general applicability imposing the standard as well as the effective date of that regulation.

24. Illinois-American seeks an extension to its adjusted standard from the following sections of the Board's Water Pollution Control Regulations: the effluent standard for total suspended solids at Section 304.124; the effluent standard for total iron at Section 304.124; the effluent standard for offensive discharges at Section 304.106; and the general use water quality standard for offensive discharges at Section 302.203.

25. Section 304.124 of the Board's Water Pollution Control Regulations provides that no person shall cause or allow the concentration of Total Suspended Solids in any effluent to exceed 15.0 mg/l, and that no person shall cause or allow the concentration of total iron in any effluent to exceed 2.0 mg/l. These effluent standards apply to all discharges to waters of the State of Illinois, regardless of the nature of the receiving stream or the environmental impact of the discharge. The Board's effluent standards initially became effective on January 6, 1972. *See* Opinion of the Board, Effluent Criteria, Water Quality Standards, Water Quality Standards Revisions for Intrastate Waters (SWB 14) (Jan. 6, 1972), R70-8, R71-14, and R71-20 at 19. These standards are now codified in Part 304 of the Board's Water Pollution Control

Regulations, which became effective July 27, 1978. Section 304.124, the section of Part 304 addressing TSS and iron, was amended in R88-1 at 13 Ill. Reg. 5976, effective April 18, 1989.

26. Section 304.106 of the Board's Water Pollution Control Regulations provides in pertinent part that no effluent shall contain settleable solids or sludge solids, and that turbidity must be reduced to below obvious levels. This effluent standard applies to all discharges to waters of the State of Illinois, regardless of the nature of the receiving stream or the environmental impact of the discharge. As noted above, the Board's effluent standards initially became effective on January 6, 1972. *See id.* at 5. These standards are now codified in Part 304 of the Board's Water Pollution Control Regulations, which became effective July 27, 1978.

27. Section 302.203 of the Board's Water Pollution Control Regulations provides in pertinent part that waters of the State shall be free from sludge or bottom deposits and turbidity of other than natural origin. This water quality standard applies to all discharges to waters of the State of Illinois for which there is no specific designation. This water quality standard also became effective on January 6, 1972. *See id.* at 4. This standard is now codified in Part 302 of the Board's Water Pollution Control Regulations, which was filed with the Secretary of State on January 1, 1978. Section 302.203, the section of Part 302 addressing water quality, was amended at 14 Ill. Reg. 2899, effective February 13, 1990.

**B. Indication of whether the Regulation of General Applicability was Promulgated to Implement the Requirements of Federal Environmental Law**

28. Section 104.406(b) of the Procedural Rules provides that the petition must contain a statement that indicates whether the regulation of general applicability was promulgated to implement, in whole or in part, the requirements of the Clean Water Act (33 U.S.C. § 1251 et seq.); the Safe Drinking Water Act (42 U.S.C. § 300(f) et seq.); the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. § 9601 et seq.); the Clean

Air Act (42 U.S.C. § 7401 et seq.); or the State programs concerning the Resource Conservation and Recovery Act, the Underground Injection Control program, or the National Pollution Discharge Elimination System.

29. Neither the effluent standards for total suspended solids and total iron at Section 304.124 nor the effluent standard for offensive discharges at Section 304.106 was promulgated to implement the requirements of any of the above-listed federal environmental laws or state programs. The Clean Water Act (33 U.S.C. § 1251 et seq.) requires effluent standards for “discharges of pollutants from a point source or group of point sources” to be established, 33 U.S.C. § 1312(a), but the effluent standards at Section 304.124 and Section 304.106 apply to all discharges to waters of the State of Illinois. *See Illinois Institute for Environmental Quality, Evaluation of Effluent Regulations of the State of Illinois*, Document No. 76/21 at 4–5 (1976) (noting that federal law “differs from Illinois law, in requiring industrial category-specific guidelines whereas the Illinois standards apply equally to all dischargers”). In addition, there are no federal categorical effluent limitations for public water supply treatment facilities. *See, e.g., SSIS at 1.2; Opinion & Order of the Board, In the Matter of: Petition for Site-Specific Exception to Effluent Standards for the East St. Louis Water Treatment Plant by the Illinois American Water Company*, PCB 85-11 (Feb. 2, 1989) at 1. Rather, effluent limitations are developed on a site specific basis using Best Professional Judgment (“BPJ”). *Id.*

30. In contrast, the general use water quality standard for offensive discharges at Section 302.203 was promulgated to implement the requirements of the Clean Water Act (33 U.S.C. § 1251 et seq.). *See* 33 U.S.C. 1313(c) (requiring states to adopt water quality standards, and noting that whenever states revise water quality standards or adopt a new standard, such

revised or new standard shall be submitted to the USEPA Administrator). *See also* Opinion & Order of the Board dated Sept. 7, 2000 at 20.

**C. Level of Justification Necessary for an Adjusted Standard as Specified by the Regulation of General Applicability**

31. Section 104.406(c) of the Procedural Rules provides that the petition must contain the level of justification as well as other information or requirements necessary for an adjusted standard as specified by the regulation of general applicability, or a statement that the regulation of general applicability does not specify a level of justification or other requirements.

32. Section 302.124, Section 304.106, and Section 302.203 of the Board's Water Pollution Control Regulations do not specify a level of justification or other requirement for an adjusted standard. Section 28.1(c) of the Act does, however, specify a level of justification or other requirement for an adjusted standard that applies when no such justification or requirement is specified by the regulation of general applicability. That Section provides as follows:

If a regulation of general applicability does not specify a level of justification required of a petitioner to qualify for an adjusted standard, the Board may grant individual adjusted standards whenever the Board determines, upon adequate proof by petitioner, that:

- (1) factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to that petitioner;
- (2) the existence of those factors justifies an adjusted standard;
- (3) the requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and
- (4) the adjusted standard is consistent with any applicable federal law.

415 Ill. Comp. Stat. 5/28.1(c).

**D. Nature of Illinois-American's Activity that is the Subject of the Proposed Adjusted Standard**

33. Section 104.406(d) of the Procedural Rules provides that the petition must contain a description of the nature of the petitioner's activity that is the subject of the proposed adjusted standard. The description must also include the location of, and area affected by, the petitioner's activity; the number of persons employed by the facility at issue; the age of that facility; the relevant pollution control equipment already in use; and the qualitative and quantitative description of the nature of emissions, discharges or releases currently generated by the petitioner's activity. Each of these issues is discussed in greater detail, below.

**1. Location of Illinois-American's Activity**

34. Illinois American's Alton facility is located on the Mississippi River near River Mile 204. The facility site consists of approximately 22 acres located within the bounds of the City of Alton, Illinois, in Madison County. Alton is located in southwestern Illinois north of St. Louis, Missouri. Other local population centers near Alton include the towns of East Alton, Elsah, Grafton, Bethalto, and Godfrey. Highways that pass near the vicinity of the site include Illinois Routes 3, 67, 100, 111, 140, 143, and 267. The site is located on Illinois Route 100 (Great River Road), a four-lane highway along the Mississippi River, at the site of a former quarry. Access to the site is from Route 100. The site can also be accessed from Grand Avenue, an unimproved street. SSIS at 4-1.

**2. Area Affected by Illinois-American's Activity**

35. Residential subdivisions are located along the western and northeastern corners of the property. The site is abutted by both single and multi-family residences. Land uses near the site include higher and moderate income single family residences, apartments, and industrial sites. The immediate area is nearly fully developed with minimum vacant land available. Barges

tie up along the River banks just downstream of this area prior to or traveling through the Melvin Price Locks and Dam. SSIS at 4-2.

**3. Number of Persons Employed by Illinois-American's Alton Facility**

36. The Alton facility currently employs 31 people. The Production Department, which works inside the plant itself, employs one management level employee and eight hourly employees; the Network Department, which performs meter reading and maintenance activities for the distribution system, employs one management level employee and 20 hourly employees; and the Environmental Management and Compliance Department, which works to ensure that Illinois-American's operations in the Alton Water District and the Cairo Water District remain in compliance with all applicable permits and laws, employs one management level employee.

**4. Age of Alton Facility**

37. The Alton facility was constructed in 1999 and 2000 to replace a previous water treatment facility that was located near the site of the current facility. The "replacement" facility, referred to as the "Alton facility" or the "new Alton facility," began operations on December 31, 2000. As of the date of this Petition, the Alton facility is therefore approximately six years old.

**5. Relevant Pollution Control Equipment Already in Use**

38. With the exception of several minor changes to the dechlorination process, the Alton facility was constructed as proposed in the March 1999 Petition and the Site Specific Impact Study, and the capacity and output of the facility are consistent with the estimates contained therein. *See* Affidavit of Paul Keck at ¶¶3, 6-8, 14. Much of the information in the following sections is thus addressed in the March 1999 Petition and the Site Specific Impact Study, and citations to those documents are provided for reference and completeness.

39. The Alton facility consists of a raw water intake and pumping station, clarification and filtration units, filtered water storage, and chemical feed facilities. SSIS at 3-4.

Clarification of raw water at the facility is provided by four Superpulsator units, which are high rate “sludge-blanket” type clarifiers manufactured by Infilco Degremont, Inc. SSIS at 3-5.

Filtration is provided by six gravity dual media (sand/granular activated carbon) filter units, and each filter is equipped with a rate-of-flow controller, filter-to-waste piping, an air wash system, and automated monitors for flow rate, head loss, and water level. The chemical feed facilities include a sodium thiosulfate dechlorination system. *See* Affidavit of Paul Keck at ¶4. Other equipment used at the facility includes an analyzer, controller, flow proportioning system, automatic switchover device, diffuser, and a scale for cylinders. SSIS at 3-6.

40. Illinois-American uses the technique of chloramination at the Alton facility. SSIS at 3-5. With chloramination, ammonia is applied just after chlorine treatment in order to form chloramines rather than free chlorine residuals. *See* Affidavit of Paul Keck at ¶6. Ammonia and chlorine are added to the raw water prior to Superpulsator treatments. As a result, the Total Residual Chlorine (TRC) level in the Superpulsator units is approximately 1.0 to 1.5 mg/l. *Id.* Settled solids are continually removed from the Superpulsators, routed in the Superpulsator blowdown trough, and periodically flushed to the effluent discharge.

41. Clarified water from the Superpulsators flows to the six carbon/sand dual media filter units. SSIS at 3-5 to 3-6. The filtration of the clarified water through carbon causes a reduction in chlorine residuals. Chlorine and ammonia are then re-applied to the filtrate to maintain a disinfectant residual in the potable water as it passes on to the clearwell and then to the distribution system; this application raises the level of TRC to the targeted range of 3.0 to 3.5 mg/L in the finished water. *See* Affidavit of Paul Keck at ¶6. Periodically, finished water from the clearwell is used to backwash the filters to remove accumulated solids. *Id.* at ¶11. Filter backwash is routed to the effluent discharge. SSIS at 3-6.

42. The Alton facility prevents unacceptable TRC concentrations in effluent discharge through dechlorination with sodium thiosulfate. SSIS at 3-6. There is one dechlorination system, which has two feed points that can be used to treat the effluent discharge stream. *See* Affidavit of Paul Keck at ¶5. First, a sodium thiosulfate feed system feeds to a dechlorination basin which receives effluent discharge composed of Superpulsator blowdown and filter backwash. The facility's use of Supervisory Control and Data Acquisition (SCADA) programming allows the sodium thiosulfate dosage to the dechlorination basin to increase during filter backwashes to accommodate the resulting higher flow volume. There is also an alternative feed point to the filter backwash influent water that is used if the facility decides to run the filters in a biologically active mode. To date, this alternative feed point has not been used. *Id.*

**6. Qualitative and Quantitative Description of the Nature of Discharges**

43. The Alton facility currently discharges its effluent directly to the Mississippi pursuant to Adjusted Standard 99-6. Effluent discharges from the Alton facility include operational discharges and maintenance discharges. *See* Affidavit of Paul Keck at ¶8. Operational discharges occur regularly (on a daily or weekly basis) during periods when the facility is treating raw water, and include return of intake screen wash, blowdown from the Superpulsators, and filter backwash. Maintenance discharges occur during the semi-annual cleaning of accumulated solids in the clarifier, sedimentation basins, and mixing tanks. *Id.*

44. The two main operational discharges consist of intermittent Superpulsator blowdown and filter backwash. *Id.* at ¶9. Approximately 72,000 gallons per day ("gpd") of blowdown are discharged each day from the Superpulsators. In addition, approximately 227,000 gallons of backwash are discharged from the six sand/carbon filters in each filter backwash. There are normally one to three filter backwashes per day, depending on water temperature and turbidity; the daily average for 2005 was 1.6 backwashes per day. *Id.*



45. The frequency and duration of these blowdowns are generally fixed. *Id.* at ¶10. Blowdown in the Superpulsator now occurs twice per hour. Stated differently, the interval between blowdowns is approximately 30 minutes. Throughout 2001 and early 2002, the intervals were less regular — at times, the interval between blowdowns was as long as 5.5 hours. The duration of the filter backwash process is generally fixed at 25 minutes. *Id.* at ¶11. Each filter runs approximately 30 to 120 hours between backwashings. *Id.*

46. The TSS and total iron concentrations in the blowdown are highly variable because they are dictated by raw water turbidity and plant operational conditions. *Id.* at ¶12. Higher levels of TSS and total iron in the raw water generally correlate with higher levels of TSS and total iron in the facility's discharge. In addition, longer intervals between blowdowns allows solids to build up in the blowdown troughs, so the amounts of TSS and total iron in samples collected from Superpulsator blowdowns after such longer intervals will generally be elevated. Finally, the flow rate of the facility's influent can affect TSS and total iron in the facility's discharge. TSS and iron in the facility's influent can become trapped for several hours in the solids blanket in a Superpulsator, but a higher flow rate can cause these solids blankets to expand and overflow into the collection troughs. Directly following such an overflow, the amount of TSS and iron in the facility's discharge will likely be higher. *Id.*

47. Maintenance discharges arise from cleaning accumulated solids from the Superpulsators. *Id.* at ¶13. These maintenance discharges occur two times per year, and each maintenance discharge lasts approximately four days. Approximately 5,000 gpd of water containing residuals are discharged each day during each four day maintenance activity. The total annual discharge from maintenance activities is therefore approximately 40,000 gallons. *Id.*

48. The Alton facility treats sufficient raw water to make available, on average, 8.5 million gallons per day (MGD) of potable water for the Alton area. *Id.* at ¶14. The average proportional internal facility demand is 0.49 MGD for the average potable water flow of 8.5 MGD. *Id.* The combined flow of 8.99 MGD was therefore considered in quantifying the discharges and evaluating the potential discharges in Section II.G, below.

49. At the time that the original Petition for an Adjusted Standard was prepared, Illinois-American and GRLT estimated that the annual dry tons of solids in the Alton facility's effluent would be approximately 3,300. *See* Piasa Creek Watershed Report, Attachment B to the Petition, at Appendix 1, p. 5. This estimate assumed that 100% of the TSS in the facility's influent would be discharged in the facility's effluent. *See* Affidavit of Paul Keck at ¶16. This assumption is consistent with facility operations. *Id.* However, that estimate was based on predictions regarding the operating conditions of the facility, which are different than predicted.

50. The estimated amount of solids discharged assumed that the turbidity of the influent of the new Alton facility would be the same as the turbidity of the influent at the previous facility (90 NTU, or 180 mg/L). *Id.* at 17. However, the turbidity of the new facility's influent, determined using data collected three times each day at the new facility, is 54 NTU (108 mg/L). *Id.* The estimated amount of solids discharged also assumed that the daily flow rate for the facility would be 11.2 MGD, but the actual daily flow rate for the facility is 8.99 MGD. *Id.* at 18. Finally, Illinois-American uses coagulants to precipitate out those solids naturally occurring in the river water, *see id.* at ¶7, and the estimated amount of solids discharged assumed that the application rate of the coagulants would be the same as in the previous facility (40 ppm).<sup>7</sup>

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<sup>7</sup> The original estimate of the amount of coagulant residuals predicted to be discharged from the facility each year was also calculated incorrectly. *Id.* at 20. If the proper formula had been used, the amount of coagulant residuals predicted to be discharged from the facility would have been approximately 50 tons per year (rather than the 290 tons set forth in the original petition). *Id.* This would have resulted in a total estimated discharge of 3,120 tons each year (3,070 tons of suspended solids in the influent, plus 50 tons of coagulant residuals). A soil savings of only 6,240 tons thus would achieve a 2 to 1 offset.

However, the actual application rate of coagulants is 60 ppm. *Id.* at 20. If the formula relied upon in the initial petition is used with these actual figures, the estimated tons of solids discharged from the facility is 1,545. *Id.* at 21.<sup>8</sup> Even if the daily flow rate of the facility is increased to 16 MGD (the maximum daily flow rate for the facility, *see* SSIS 3-4), the estimated tons of solids discharged from the facility is 2,749. *See* Affidavit of Paul Keck at ¶22. These figures are considerably lower than the 3,300 annual dry tons of solids estimated by Illinois-American and GRLT when they negotiated their contract in 2000.

51. The facility's effluent also contains total recoverable iron. Based upon monthly monitoring conducted at the Alton facility,<sup>9</sup> the average amount of iron discharged each year by the facility is 21 tons. *See* Evaluation of Residuals at 4.

**E. Efforts Necessary to Comply with the Regulation of General Applicability**

52. Section 104.406(e) of the Procedural Rules provides that the petition must contain a description of the efforts that would be necessary if the petitioner were to comply with the regulation of general applicability. All compliance alternatives, with the corresponding costs for each alternative, must be discussed. The discussion of costs must include the overall capital costs as well as the annualized capital and operating costs.

53. To prepare its petition to request the adoption of Adjusted Standard 99-6, Illinois-American conducted a comprehensive study regarding the efforts that would be necessary if Illinois-American were to comply with Section 302.124, Section 304.106, and Section 302.203

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<sup>8</sup> This is consistent with the actual tons of solids measured in the facility's effluent based on the 59 grab samples collected from the new Alton facility between February 2001 and December 2005 and reported to IEPA as required by the facility's NPDES permit. That data indicates that approximately 1,333 tons of solids are discharged from the facility each year. *Id.*

<sup>9</sup> The data collected from the facility between February 2001 and December 2005 is used to calculate the amount of iron discharged from the facility each year because the Alton facility does not measure the amount of iron in the facility's influent and therefore it is not possible to calculate a predicted value. Although a predicted value for iron based on a large number of samples obtained from the facility's influent may be slightly more reliable than a value calculated using the facility's grab samples alone, Illinois-American's practice of collecting one discrete grab sample per month during times of discharge from Superpulsator

of the Board's Water Pollution Control Regulations. *See* ¶3, above. This Site Specific Impact Study evaluated several technologies for treatment of the effluent from the Alton facility: (1) land application; (2) discharge to the Alton publicly owned treatment works (POTW); (3) permanent storage in monofills; and (4) temporary storage and dewatering in lagoons coupled with off-site landfilling. *See* SSIS at 6-1 to 6-20. Illinois-American also considered direct discharge to the Mississippi River without such treatment. These technologies and the corresponding costs of each are discussed in greater detail, below.

**1. Land Application**

54. One of the options explored by Illinois-American is land application of residuals in Illinois-American's effluent. This option involves separating river silts out of the effluent, temporarily storing the residuals at the Alton facility, and then transporting these residuals to local agricultural land. These residuals would either be applied to the land as a liquid or as a dewatered residual called "cake." For liquid residuals, the residuals are injected into the soil, or applied to the surface as a spray and then disked or plowed into the soil within 24 hours of application. For cake residuals, the residuals are spread in thin layers directly from the truck using a device similar to a manure spreader and then disked or plowed into the soil.

55. Applying liquid residuals costs between \$70 and \$300 per ton, which depends on the distance the soil must be hauled. Significant farmland is not available in the immediate vicinity, and residential growth trends in the area indicate that the farmland will be even further away from the Alton facility in the future. The high end of the cost range is therefore a more

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blowdown and filter backwash events ensures that these samples are obtained when concentrations of TSS and total iron are likely to be the highest. *See* Affidavit of Paul Keck at ¶12.

reasonable estimate of the cost of such treatment. Applying dewatered residuals costs between \$20 and \$68 per ton.<sup>10</sup> SSIS at 6-2 to 6-3.

56. Although land application is technically feasible, this treatment method is associated with considerable uncertainty due to weather, public acceptance, permit requirements, and land availability. Application may not be feasible during some winter months due to frozen soil, and public acceptance of residuals is likely to be low because the residuals add little to (or detract from) soil fertility. In addition, land application is further complicated by permit regulations concerning the content of applied materials. Finally, approximately 263 acres of land must be acquired every twenty (20) years due to the manganese content of the effluent. SSIS at 6-3 to 6-4. This option was eliminated from further consideration when the Alton facility was constructed in 1999, and remains eliminated at the current time.

## 2. Discharge to Alton POTW

57. Another option explored by Illinois-American is the discharge of effluent to the Alton POTW, an option similar to that used by many other water treatment facilities.

58. The cost of expansion of the Alton POTW would be similar to the cost if Illinois-American were to construct an on-site treatment facility.

59. This option is technologically infeasible for several reasons. Specifically, the estimated flow and mass of solids could not be treated at the Alton POTW without expansion of the POTW. Without such expansion, the flexibility of the POTW's future operations would be severely curtailed by accepting the Alton facility's residuals. SSIS at 6-4. This option was explored on a preliminary basis with the Alton POTW staff, who indicated that this option is not

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<sup>10</sup> From this point through paragraph 73, Petitioner will present cost figures for the various options it explored in 1999 in order to comply with the regulation of general applicability. The cost figures reflect costs in the SSIS, which was prepared in 1999. Adjusting for inflation, those figures could properly be increased by 21% according to the "CPI Inflation Calculator" utilized by the U.S. Department of Labor's Bureau of Labor Statistics. See [www.bls.gov/cpi.cpicalc](http://www.bls.gov/cpi.cpicalc). Petitioner will, nevertheless, set forth all costs in 1999 dollars in this Petition in order to avoid confusion between the Petition and the SSIS.

feasible based on potential hydraulic overload of the adjacent sewer system, inadequate slope of the inceptor sewer, elimination of the POTW's reserve capacity, and a quadrupling of the solids loading. *Id.* Accordingly, this option was eliminated from further consideration when the Alton facility was constructed in 1999 and remains eliminated at the current time.

### **3. Permanent Storage in Monofills**

60. Illinois-American also explored permanent storage of residual solids in a monofill as a treatment option. This option involves the construction of impoundments for permanent storage. SSIS at 6-4. Based on the average loading of 92 tons of wet residuals (10% solids) per day over a typical 20 year period, a 40 acre monofill with a 14 foot depth would be required.

61. The site of the Alton facility is not large enough to construct such a monofill, so Illinois-American would have to purchase farmland at a cost of approximately \$6,000–\$10,000 per acre. SSIS at 6-4. In addition, the construction of the large, lined impoundment necessary to implement this option would cost at least \$20 million, based on preliminary estimates calculated in 1999. Annual operation and maintenance costs would be approximately \$1.3 million.

62. Storage in a monofill is neither technologically feasible nor economically reasonable on a long-term basis. SSIS at 6-4. Disposal in monofills is likely to limit the future use of the land, and replacement monofills will continually be required. Accordingly, this option was eliminated from further consideration when the Alton facility was constructed in 1999 and remains eliminated at the current time.

### **4. Dewatering Residuals Coupled with Offsite Landfilling**

63. Finally, Illinois-American explored temporary storage and dewatering coupled with offsite landfilling. Dewatering can be accomplished by non-mechanical or mechanical techniques, or a combination of multiple techniques.

64. Non-mechanical dewatering techniques such as drying beds and lagoons rely on drainage, decanting, evaporation, and freezing processes to dewater residuals. SSIS at 6-5. Non-mechanical techniques are commonly used because of their simplicity and low operational costs. However, use of drying beds requires more land area than use of lagoons and construction costs are estimated to be higher, so drying beds were not considered further. Use of lagoons and other non-mechanical techniques alone is also not feasible because non-mechanical dewatering can be disrupted by fluctuations in climate, and such techniques have a low overload capacity if a facility's production of solids is greater than planned.

65. Mechanical dewatering techniques are typically used in the water industry when insufficient space is available for non-mechanical processes, when high solids concentrations are required for disposal, or when economics dictate their use. SSIS at 6-5. Illinois-American considered several mechanical dewatering techniques including vacuum filtration, centrifugation, and belt filter pressing.

66. In vacuum filtration, a vacuum is applied to a rotating drum surface coated with residuals to dewater the solids and to form a cake. SSIS at 6-6. The feasibility of using vacuum filtration is not clear, however, as this method has only been evaluated on a pilot project scale for sludge application due to the high amounts of conditioning chemicals used in producing potable water and poor cake yield.

67. Centrifugation is a proven method of dewatering residuals. SSIS at 6-6. Solid bowl centrifuge technology is the most common type of unit used in centrifugation, as such technology can operate either in co-current or counter-current flow modes. The costs of centrifugation are similar to the costs of dewatering using belt filter press technology. However, Illinois-American ruled out centrifugation because belt filter press technology is more common

and is used in several of Illinois-American's "sister" operations throughout the United States, and because centrifugation has a poor track record in handling residuals from the Mississippi.

68. The belt filter press uses a well-known and reliable technology to dewater residuals. SSIS at 6-6. Although use of a belt filter press is more expensive than use of a non-mechanical means, belt filter presses produce a higher density product (15 to 25 percent solids) and thus require less space for landfilling. Space at the Alton facility site is available for filter press units and all associated tanks.

69. A combination of non-mechanical and mechanical dewatering is an even more viable option for treating residuals from the Alton facility. Illinois-American considered a dewatering technique involving lagoons and belt filter press technology coupled with disposal of dewatered residuals in offsite landfills. To implement this technique, Illinois-American would need to build four one-acre lagoons for dewatering its residuals on-site at the Alton facility. SSIS at 6-8. Residuals would be stored in these lagoons until they reached a 4% solid state. This stage of the dewatering would have minimal maintenance requirements. After the residuals reach a 4% solid state, the residuals would be removed from the lagoons and further dewatered in a mechanized belt filter press system in order to produce a product that is between 15% to 25% solids. The residuals would then be shipped to an offsite landfill.

70. Provided that the residuals contain no hazardous waste, the residuals may be landfilled in a permitted non-hazardous special waste landfill. Preliminary discussions in 1999 with the operator of the nearest landfill that accepts residuals from water treatment plants, Waste Management Inc., located in Granite City, Illinois, indicated that there was at that time, sufficient capacity at the Granite City site to hold residuals from the Alton facility for 30 years. SSIS at 6-6. Presumably, only 23 years of capacity now remain.



71. The total capital cost for dewatering residuals from the Alton facility through four on-site lagoons, permanent mechanical dewatering by belt filter presses, and subsequent landfilling is approximately \$7,380,000. SSIS at Table D-1A. Assuming that the capital will be amortized over 30 years at an interest rate of 9%, the total annualized cost is approximately \$1.14 million, which is comprised of an annualized capital cost of \$720,000 and an annualized operation cost of \$420,000.

72. Although Illinois-American determined that a combination of non-mechanical and mechanical dewatering techniques was a viable means of treating its residuals, this option is nevertheless a less preferable option than direct discharge to the Mississippi coupled with completion of a sedimentation reduction program. The costs for dewatering residuals through four on-site lagoons, permanent mechanical dewatering by belt filter presses, and subsequent landfilling are extremely high and do not justify the meager environmental benefits. *See* Opinion & Order of the Board dated Sept. 7, 2000 at 11. As landfill capacity diminishes and tipping fees increase, Illinois-American believes that it may become cheaper to build a monofill which would only accept residuals from the facility. *See id.* at 12. In addition, landfilling dewatered residuals is an extremely ineffective use of landfill capacity and, over time, the landfill's useful life may be shortened and may require construction of another landfill or increased cost and energy to haul future trash to other distant landfills. *Id.* In addition, an estimated 750 truck trips per year will be required on the Great River Road to haul away the treated residuals; two trips per day will be required on average, but there could be as many as 17 truck trips per day. *See id.* at 13. Increased traffic leads to congestion, air pollution from truck exhaust, hazards to safety, and a possible decrease in the value of nearby real estate. *Id.* Accordingly, this option was eliminated

from further consideration when the Alton facility was constructed in 1999 and remains eliminated at the current time.

**5. Direct Discharge to the Mississippi River**

73. Each of the four alternative means of treating Illinois-American's effluent was eliminated for the reasons discussed above. Adjusted Standard 99-6 authorized direct discharge by Illinois-American to the Mississippi River without such treatment, and the Board should continue to authorize such direct discharges at this time. The proposed extension to Adjusted Standard 99-6 is discussed in Section II.F, below.

**F. Proposed Adjusted Standard**

74. Section 104.406(f) of the Procedural Rules requires the petition to contain a narrative description of the proposed adjusted standard as well as proposed language for a Board order imposing the standard. Efforts necessary to achieve this proposed standard and the corresponding costs must also be presented. These issues are discussed in greater detail, below.

**1. Description of Proposed Adjusted Standard**

75. Illinois-American petitions the Board to extend Adjusted Standard AS 99-6, which provides that the effluent standard for offensive discharges at 35 Ill. Adm. Code 304.106, the effluent standard for total suspended solids (TSS) at 35 Ill. Adm. Code 304.124, and the effluent standard for total iron at 35 Ill. Adm. Code 304.124 shall not apply to discharges from the Alton facility, and that the general use water quality standard for offensive discharges at 35 Ill. Adm. Code 302.203 shall not apply to a one mile stretch of the Mississippi River which receives effluent from the facility and is immediately downstream from the facility's discharge.

76. The adjusted standard should be conditioned on Illinois-American's compliance with the terms of the Consulting and Performance Agreement between Illinois-American and GRLT throughout the term of that Agreement, and on Illinois-American's agreement to enter

into a contract for maintenance of the Project with GRLT or such other nonprofit corporation, soil and water conservation district, or other person or entity selected by Illinois-American and approved by IEPA, which approval shall not be unreasonably withheld. The order should also require Illinois-American to enter into a substitute or additional contract for maintenance of the Project if the contract for maintenance is terminated by either party or if Illinois-American determines that a substitute or additional contract is necessary. Any such contract for maintenance will require Illinois-American to provide funds needed to ensure that the average offset for the calendar year in question and the four preceding calendar years is not reduced below a 2 to 1 offset for total suspended solids, and will require the contracting party to submit to IEPA annual reports detailing the reductions achieved by implementation of the sediment reduction measures and describing the sediment load reductions achieved for each measure.

77. The relief granted by the adjusted standard should be indefinite in nature, and should expire if (a) the Board determines that the conditions of the Mississippi have changed such that the adjusted standard is made obsolete or infeasible, or (b) the average offset for the calendar year in question and the four preceding calendar years fails to reach a 2 to 1 offset for total suspended solids. In the event that any of the above events occur, the Adjusted Standard should remain in effect for three years from the occurrence of such event. Expiration of the Adjusted Standard should be delayed, however, during pendency of a petition for extension, and the Board should consider another extension at that time, if warranted by the petition.

78. The order should also provide that Illinois-American will not be required to enter into any contract for maintenance, or may terminate any then-existing contract for maintenance, if new regulations are promulgated that limit or prohibit Illinois-American's discharges to the Mississippi or otherwise invalidate the adjusted standard.

79. Proposed language for a Board order imposing this adjusted standard is attached to this Petition at Attachment F and incorporated herein.

**2. Efforts and Costs Necessary to Achieve the Adjusted Standard**

80. Achieving the proposed adjusted standard at the Alton facility will require Illinois-American to comply with the terms of the Consulting and Performance Agreement between Illinois-American and GRLT throughout the term of that Agreement. That Agreement requires Illinois-American to provide a minimum of \$4,150,000 to GRLT for completion of the sediment loading reduction project managed by GRLT (the "Project"), payable in equal payments of \$415,000 per year for ten years. Illinois-American has already made six of these required ten payments. GRLT will use the remaining payments to continue implementation of the Project, to monitor sediment reduction, and to take other actions necessary to obtain additional soil savings. The Project is anticipated to save 12,000 to 15,000 tons of soil each year by the expiration of the Agreement. *See* Affidavit of Alley Ringhausen at ¶5. Although additional funding by Illinois-American will be necessary after the expiration of the ten-year agreement between Illinois-American and GRLT to maintain these savings and Illinois-American will provide such necessary funding, the Project is expected to reach a point at which it will be sustainable without future funding from outside sources. *See* Affidavit of Alley Ringhausen at ¶6. Illinois-American and GRLT are currently engaged in discussions regarding a potential contract for maintenance.

**G. Quantitative and Qualitative Impact on the Environment**

81. Section 104.406(g) of the Procedural Rules provides that the petition must contain the quantitative and qualitative description of the impact of the petitioner's activity on the environment if the petitioner were to comply with the regulation of general applicability as compared to the quantitative and qualitative impact on the environment if the petitioner were to

comply with only the proposed adjusted standard. To the extent applicable, cross-media impacts must be discussed. Also, the petitioner must compare the qualitative and quantitative nature of emissions, discharges or releases that would be expected from compliance with the regulation of general applicability as opposed to that which would be expected from compliance with the proposed adjusted standard.

82. Illinois-American examined the potential impact from its discharges from the Alton facility and concluded that the Alton facility's discharges pose no significant impact to the receiving body of water. SSIS at 5-11. Specifically, Illinois-American's analysis indicated that the discharge of untreated effluent from the Alton facility would not result in either measurable sedimentation or observable TSS, and reached similar conclusions regarding aluminum and iron in the discharge effluent. *See id.* This analysis is discussed in significant detail in the Site Specific Impact Study. *See id.* at 5-11 to 5-25.

83. As noted above, the environmental characteristics and conditions of the Mississippi River near the Alton facility have not changed significantly since the Site Specific Impact Study was prepared in March 1999. *See* Affidavit of Alley Ringhausen at ¶¶12-13; Affidavit of Howard O. Andrews, Jr. (attached to this Petition as Attachment E) at ¶¶2, 4-5. In addition, the facility was constructed as proposed in the March 1999 Petition and the Site Specific Impact Study, and the capacity and output of the facility are consistent with the estimates contained therein. *See* Affidavit of Paul Keck at ¶¶3, 6-8, 14. The evaluation set forth in the Site Specific Impact Study of the impact of the Alton facility is therefore reliable today. *See* SSIS at 5-11 to 5-25; Affidavit of Paul Keck at ¶23.

84. The flow amount and TSS concentration of the discharge effluent are sensitive to intake TSS amounts. SSIS at 5-3. The Study therefore evaluated potential increases based on

TSS concentrations in the influent as low as 20 mg/l and as high as 600 mg/l. SSIS at 5-27.

Under low flow conditions (the worst case scenario), the Study estimated that a river surface area of approximately 175 feet by 30 feet (or 0.12 acres) would be subject to concentrations of 1.0 to 2.5 mg/l higher than ambient levels following a discharge of untreated effluent from the Alton facility. *Id.* This change in TSS concentration is 5% to 13% higher than ambient levels. SSIS at 5-4. The Study concluded that the lower end of the range represents a value that will be difficult to visually discern and very difficult to measure with conventional instrumentation. *Id.* After the edge of this mixing zone, however, the incremental increases in TSS concentration were 0.1 mg/l to 0.3 mg/l, or 0.43% to 0.06% higher than ambient levels. SSIS at 5-27.

85. The Site Specific Impact Study also concluded that the amount of coagulant added will not lead to an exceedance of the ambient water quality standards for either aluminum or iron, even under low flow conditions. *See* SSIS at 5-4. Under low flow conditions, the incremental increase in aluminum concentration is 0.003 mg/l, or a 10.2% increase over ambient conditions. SSIS at 5-28. However, under average flow conditions, the increase in aluminum concentration is estimated to be much lower; the incremental increase is 0.001 mg/l, or a 0.5% increase over ambient conditions. *Id.* The Study also estimated that there would be no measurable increase in mean dissolved iron concentration. *See* SSIS at 5-29. The concentrations of total iron, however, are slightly higher. *See* Section II.D.6.

86. In addition, the Study identified the potential for unnatural bottom deposits, odors, and unnatural floating material or color. The Study indicates that the River currents will not allow a significant build-up of effluent solids on the river bottom. *See* SSIS at 5-11. In addition, the potential water quality effects or bottom deposit impacts are either confined to a small surface area or are negligible in accumulation, and are not anticipated to result in visible oils or

odors. SSIS at 5-22. Since the discharge does not elevate nutrients in the receiving water, no additional plant or algal growth is expected. Due to the naturally occurring character of the majority of the effluent material (i.e., river silts), no unusual discoloration will result from the discharge. *Id.*

87. The Study also determined that the turbidity in the area of the discharge may increase in intensity. However, the discharge plume is not expect to reach the surface until some distance downstream (900 to 1000 ft), at which time the surface concentrations range from 25 to 50 mg/l TSS above ambient but quickly decrease to <10 mg/l. The Study concluded that it is extremely doubtful that these areas of increased turbidity will be discernible. *Id.* Natural flow, local navigational traffic, or activities in the barge tugboat docking area are anticipated to produce similar variations in turbidity level, and incremental increases in this area generally cannot be detected due to the opaqueness of the Mississippi River. SSIS at 5-23.

88. Finally, the Study also concluded that discharges of untreated effluent from the Alton facility would have no impact on the stream morphology or water chemistry, due to the considerable channel size, the potential for high volume and high velocity flows, the negligible quantity of discharge material relative to natural sediment loads, and the existing influence of periodic disturbance due to operation and maintenance of the nearby navigational channel. *Id.*

89. If Illinois-American were to comply with the standards of general applicability, the incremental increases in TSS, aluminum, and total iron concentrations discussed above would be slightly lower. However, the discharges of untreated effluent from the Alton facility together with the completion of the Piasa Creek Watershed Project will decrease the overall sediment loading of the River, which will have a net positive effect on the TSS and iron concentrations in the River system.

90. As this Board has already determined, the Project “will eventually keep much more TSS out of the Mississippi than the [Alton] facility’s discharge puts in.” *See* Opinion & Order of the Board dated Sept. 7, 2000 at 19. As this Board has also observed, Ms. Annie Hoagland, Chair of the Alton Lake Heritage Parkway Commission, has stated in support of this Project that “the potential to permanently reduce sediment is tremendous, while at the discharge site, they [Illinois-American] are merely putting back what they took out of the river.” *Id.* at 14. At this time, only six years into the Project, the Project has already reached its ten-year goal of achieving a 2 to 1 offset if the TSS loading estimate from 1999 (3,300 tons) is utilized. If the TSS loading estimate is calculated using actual operating conditions from the facility each year (1,545 tons/year), the offset has already reached 4.3 to 1.

91. In addition, Illinois-American commissioned Black & Veatch Corporation to conduct a study to determine the extent to which the total iron loading in the River is reduced by the sedimentation reduction projects implemented as part of the Piasa Creek Watershed Project. In conducting this study, Black & Veatch considered several factors, including the different soil types present in the Piasa Creek Watershed, the concentrations of total iron present in each soil type, and the type of sedimentation project implemented. *See* Evaluation of Residuals at 2. Based on an evaluation of the NPDES sampling data, Black & Veatch concludes in this study that the Alton facility’s effluent contains, on average, approximately 21 tons of total iron each year.<sup>11</sup> *See id.* at 4. However, based on an evaluation of the additional sampling conducted by Black & Veatch, Black & Veatch concluded that the Alton facility’s effluent contains approximately 9 tons of total iron each year. *Id.*

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<sup>11</sup> As noted above, Illinois-American does not measure the amount of iron in the facility’s influent, so an estimate for the amount of iron predicted to be discharged from the facility is not available.



92. Black & Veatch also concluded that the sedimentation reduction projects implemented as part of the Piasa Creek Watershed Project have achieved a savings of approximately 79 tons of total iron each year as of June 2006. *Id.* at 4. Even using the NPDES sampling data, which provides the highest values for the amount of iron in the effluent, there is an offset ratio of 3.8 to 1. *Id.* at 5. That is, the Piasa Creek Watershed Project, prevents nearly four tons of total iron from entering the River for every one ton of total iron that Illinois-American's Alton facility discharges into the River. However, considering Black & Veatch's sampling data, the sediment reduction projects implemented as part of the Project have achieved a net yearly decrease of 70 tons of iron each year, which represents an offset ratio of 8.8 to 1. *Id.*

93. Due to operational optimization within the facility, however, considering data reported for February 2001 through December 2005 may not accurately represent the average amount of iron contained in the facility's discharge. While blowdown in the Superpulsator now occurs twice per hour (i.e., at intervals of 30 minutes), the intervals between blowdowns in 2001 and in the early part of 2002 were much less regular. *See* Affidavit of Paul Keck at ¶10. At times, the interval between blowdowns was as long as 5.5 hours. *Id.* Longer intervals between blowdowns allows solids to build up in the blowdown troughs, so the amounts of TSS (and thus iron) in samples collected from Superpulsator blowdowns after such longer intervals will generally be elevated. *Id.* at ¶12. If iron loading from the plant for only years 2002 through 2005 is considered (12.5 tons/year), the offset is 6.3 to 1. *See* Evaluation of Residuals at 5.

94. The incremental increases and other slight impacts of the facility's discharge pursuant to the extension of Adjusted Standard 99-6 requested herein are thus justified in light of the success of the Project. Justification for this adjusted standard is discussed in greater detail in Section II.H, below.

**H. Justification for the Proposed Adjusted Standard**

95. Section 104.406(h) of the Procedural Rules provides that the petition must contain a statement which explains how the petitioner seeks to justify, pursuant to the applicable level of justification, the proposed adjusted standard. As noted in Section II.C, above, Section 28.1 of the Act establishes the level of justification required by Illinois-American. Each element of this level of justification, along with an explanation of how Illinois-American seeks to justify each element, is discussed below.

**1. Substantially and Significantly Different Factors**

96. The first element of the level of justification set forth in Section 28.1 requires Illinois-American to establish that factors relating to Illinois-American are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to that petitioner. 415 Ill. Comp. Stat. 28.1(c)(1).

97. The factors relied on by the Board in adopting the effluent standards for TSS in 1972 were increased turbidity and “harmful bottom deposits.” *See Effluent Criteria, Water Quality Standards, Water Quality Standards Revisions for Intrastate Waters (SWB 14)* (Jan. 6, 1972), R70-8, R71-14, R71-20, at 19. The factors relied on by the Board in adopting the effluent standards for iron were the nuisances that excessive iron can cause for domestic uses, and undesirable bottom deposits. *Id.* at 16. The factors relied on by the Board in adopting the effluent standard for offensive conditions were that primary treatment of effluent should be universal, and that nuisances should be unacceptable. *Id.* at 5. Finally, the factors relied on by the Board in adopting its general water quality standards were protection against health hazards, protection of aquatic life in streams that support it, and protection of potability in potable streams. *Id.* at 4.

98. This Board has previously determined that “[t]he factors relating to [Illinois-American] are substantially and significantly different than the factors which the Board relied

upon in adopting the regulations at issue herein.” *See* Opinion & Order of the Board dated Sept. 7, 2000 at 20. Specifically, the offsets attainable (and attained) by the Piasa Creek Watershed Project are a substantially different factor than those that the Board considered in adopting the standards of general applicability. The general assumption underlying each of those standards was that the reduction of TSS and iron in effluent would be achieved by a technology applied to the effluent itself. In the present case, however, reductions in suspended solids and total iron in the Mississippi River are achieved through alternative, non-technology based methods applied outside the Alton facility. The amount of these reductions, therefore, is not limited by the effectiveness of the technology that would otherwise be used to reduce the sediment loading and total iron in Illinois-American’s discharge.

**2. Justification on the Basis of Substantially and Significantly Different Factors**

99. The second element of the level of justification requires Illinois-American to establish that the existence of those substantially and significantly different factors justifies an adjusted standard. 415 Ill. Comp. Stat. 5/28.1(c)(2).

100. The offsets achievable through the completion of the Piasa Creek Watershed Project, a substantially and significantly different factor, justify the extension to the adjusted standard as requested herein. In granting Adjusted Standard 99-6, this Board concluded that Illinois-American had “properly justified its petition for an adjusted standard.” Opinion & Order of the Board dated Sept. 7, 2000 at 20. As noted above, the environmental characteristics and conditions of the Mississippi River near the Alton facility have not changed significantly since the Site Specific Impact Study was prepared in March 1999. *See* Affidavit of Alley Ringhausen at ¶¶12–13; Affidavit of Howard O. Andrews, Jr. at ¶¶2, 4–5. The Board’s previous decision that an adjusted standard for discharges from the Alton facility was justified is therefore reliable

in this proceeding. This Petition therefore discusses this justification only briefly, and refers this Board to the Site Specific Impact Study for a detailed discussion of this justification. *See* SSIS at 6-9 to 6-20.

101. Justification for the extension of the adjusted standard turns on the absence of site specific environmental and health impacts of the Alton facility. Although the offsets achievable by the Piasa Creek Watershed Project are a substantially and significantly different factor, the Project will not have environmental and health impacts substantially and significantly different from those considered by the Board in adopting the standards of general applicability.

102. As noted above, the factors relied on by the Board in adopting the effluent standards for TSS were increased turbidity and “harmful bottom deposits.” *See* ¶97. However, the Site Specific Impact Study determined that discharge from the Alton facility pursuant to the adjusted standard would not significantly increase turbidity or harmful bottom deposits in the Mississippi, *see* SSIS at 5-11, and this Board has determined that any increase in turbidity and bottom deposits will be “so slight that they will be difficult to measure” and that “[s]uch bottom deposits could hardly be described as ‘harmful.’” Opinion & Order of the Board dated Sept. 7, 2000 at 18. In addition, the factors relied on by the Board in adopting the effluent standards for iron include the nuisances that excessive iron can cause for domestic uses, and undesirable bottom deposits, *see* ¶97, and this Board has previously determined that the Alton facility’s effluent will not contribute to the concerns that the Board expressed in adopting the total effluent standards for total iron. Order of the Board dated Oct. 19, 2000 at 3. Next, the factors relied on by the Board in adopting the effluent standard for offensive conditions were that primary treatment of effluent should be universal, and that nuisances should be unacceptable, *see* ¶97, and the Site Specific Impact Study determined that no visible oils or odor are expected, no

additional plant or algal growth is expected to result, and no unusual discoloration would result from the discharge. *See* SSIS at 5-22. Finally, the factors relied on by the Board in adopting its general water quality standards were protection against health hazards, protection of aquatic life in streams that support it, and protection of potability in potable streams. *See* ¶97. This Board has determined that the untreated discharge from the facility, including the iron in the effluent, will not harm human health and will protect aquatic life immediately downstream of the discharge, Order of the Board dated Oct. 19, 2000 at 3, and that potability of the water in the area of the facility's discharge should not be affected. *Id.* at 17.

103. To fully evaluate the site specific impacts of the Alton facility, however, it is necessary to determine the Best Degree of Treatment (BDT), as guided by the factors identified in 35 Ill. Adm. Code Section 304.102. That Section provides that “it shall be the obligation of any person discharging contaminants of any kind to the waters of the state to provide the best degree of treatment of wastewater consistent with technological feasibility, economic reasonableness and sound engineering judgment,” and that a determination of BDT must consider “[w]hat degree of waste reduction can be achieved by process change, improved housekeeping and recovery of individual waste components for reuse,” and “[w]hether individual process wastewater streams should be segregated or combined.” 35 Ill. Adm. Code § 304.102(a). Illinois-American’s BDT analysis is discussed in greater detail in the Site Specific Impact Study. *See* SSIS at 6-1 to 6-14.

104. Significantly, the Site Specific Impact Study concluded that “no treatment” of TSS in the Alton facility’s discharge is the Best Degree of Treatment for discharges from the facility. *See* SSIS at 6-14. The offsets achievable through the Piasa Creek Watershed Project therefore justified Adjusted Standard 99-6, and justify the extension of that standard at this time.

Six years into the Project, the results once thought “achievable” have already been achieved. Using the conservative estimate of tons of TSS expected to be discharged from the facility each year, the offset is 4.3 to 1. A similar (though unanticipated) offset has been attained for total iron. If the Board extends the Adjusted Standard, Illinois-American will continue to contribute to the PCWP for its full ten year term, and even greater TSS and iron reductions will be achieved.

**3. No Environmental or Health Effects Substantially and Significantly More Adverse than under the Rule of General Applicability.**

105. The third element of the level of justification requires Illinois-American to establish that the requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability. 415 Ill. Comp. Stat. 5/28.1(c)(3).

106. Illinois-American evaluated the potential environmental and health effects to the biota and habitats in the Mississippi River that could result from potential increases in TSS, dissolved iron, and dissolved aluminum in the Mississippi River due to daily discharges from the Alton facility. This evaluation is detailed in the Site Specific Impact Study. *See* SSIS at 5-12 to 5-25. As noted above, the environmental characteristics and conditions of the Mississippi River near the Alton facility have not changed significantly since the Site Specific Impact Study was prepared in March 1999. *See* Affidavit of Alley Ringhausen at ¶¶12–13; Affidavit of Howard O. Andrews, Jr. at ¶¶2, 4–5. The findings and conclusions set forth in the Site Specific Impact Study therefore remain reliable in this proceeding. This Petition therefore discusses the environmental and health effects of the adjusted standard only briefly, and refers this Board to the Site Specific Impact Study for a detailed discussion of this issue. *See* SSIS at 5-12 to 5-25.

107. The aquatic receptors of concern were the fish and macroinvertebrate communities near the proposed discharge. SSIS at 5-12. The Site Specific Impact Study

identified the major habitats present near the Alton facility's discharge, as well as the fish and macroinvertebrate communities present in each habitat. *See* SSIS at 5-12 to 5-14. Both the physical (non-toxic) impacts from TSS and the potential impacts from coagulant-associated metal/metalloid addition to the Mississippi River in water treatment plant residuals were considered to evaluate the potential environmental impacts of the discharge effluent on this biota. For physical (non-toxic) impacts, the Study concluded that an increase of TSS would cause a small but finite impact to riverine biota, which "may lead to avoidance behavior by some aquatic species but should not lead to any significant impact to fish or aquatic communities in the River near Mile 204." *See* SSIS at 5-16. In addition, the Study concluded that the minor rates of deposition of silty material on the river bottom "are unlikely to bury sessile organisms found there," as a bottom habitat characterization conducted in 1997 revealed that no observable silt accumulation has occurred due to discharges from the former facility, which was located at the site of the Alton facility and operated at full capacity until December 31, 2000 (and at a reduced capacity until February 12, 2001), despite 100 years of operation at that site. *See* SSIS at 5-17. For toxic impacts, the Study concluded that site-specific (i.e., non-salmonid) species like those near River Mile 204 are more tolerant and aluminum toxicity is thus unlikely. *See* SSIS at 5-20 to 5-21. In addition, the Study concluded that due to the high levels of natural complexation of aluminum and iron, discharges of untreated effluent from the Alton facility have no significant potential impact to the river environment and its biota. *See* SSIS at 5-21. As noted above, the environmental characteristics and conditions of the Mississippi River near the Alton facility have not changed significantly since the Site Specific Impact Study was prepared in March 1999. *See* Affidavit of Alley Ringhausen at ¶¶12-13; Affidavit of Howard O. Andrews, Jr. at ¶¶2, 4-5.

The findings and conclusions set forth in the Site Specific Impact Study therefore remain reliable in this proceeding.

108. Finally, the Study concluded that there are no state-listed threatened or endangered species present in the Mississippi River near the Alton facility, *id.*, and Illinois-American determined “to the Board’s satisfaction” that there is no mussel community in the Mississippi immediately downstream of the Alton facility’s discharge pipe. *See* Order of the Board dated Oct. 19, 2000 at 3.

109. This Board therefore determined in the previous adjusted standard proceeding that “the untreated discharge from the new facility, provided it occurs in the context of the GRLT Project, will not harm human health and will protect aquatic life immediately downstream of the discharge.” Opinion & Order of the Board dated Sept. 7, 2000 at 19. Because the findings and conclusions set forth in the Site Specific Impact Study remain reliable in this proceeding, the Board's previous determination regarding the effluent's lack of effect on human health and on the environment is similarly reliable regarding this issue.

**4. Consistency with Applicable Federal Law.**

110. The final element of the level of justification requires Illinois-American to establish that the adjusted standard is consistent with any applicable federal law. 415 Ill. Comp. Stat. 5/28.1(c)(4). This element is discussed in depth in Section II.I, below.

**I. Reasons that the Board may Grant the Proposed Adjusted Standard Consistent with Federal Law**

111. Section 104.406(i) of the Procedural Rules provides that the petition must contain a statement with supporting reasons that the Board may grant the proposed adjusted standard consistent with federal law. The petitioner must also inform the Board of all procedural



requirements applicable to the Board's decision on the petition that are imposed by federal law and not required by this Subpart. Relevant regulatory and statutory authorities must be cited.

**1. Consistency with Federal Law**

112. Under federal law, a permit authorizing the discharge of a pollutant may be issued upon the condition that the discharge will meet all applicable requirements set forth in the Clean Water Act, including the technology-based effluent limitations provided in Section 1311 of that Act and the water quality-based effluent limitations provided in Section 1312 of that Act. *See* 33 U.S.C. § 1342(a); 33 U.S.C. §§1311, 1312. In cases where there are no federally-promulgated categorical effluent limitations, as here, case-by-case effluent limitations must be developed reflecting Best Professional Judgment (BPJ). *See* 33 U.S.C. § 1342(a)(1); SSIS at 1-8.

113. Federal regulations implementing the Clean Water Act establish that such case-by-case limitations reflecting BPJ should be developed after consideration of the statutory factors listed in 40 C.F.R. Section 125.3(d); consideration of the appropriate technology for the category or class of point sources of which the applicant is a member; and consideration of any unique factors relating to the applicant. 40 C.F.R. § 125.3(c)(2).

114. The first consideration in the required BPJ determination, the statutory factors listed at 40 C.F.R. Section 125.3(d), requires two separate analyses. First, it is necessary to determine the Best Practicable Control Technology (BPT) as guided by the factors identified in 40 C.F.R. Section 125.3(d)(1). BPT is a minimum standard, however, so it is also necessary to determine the Best Conventional Pollution Control Technology (BCT) as guided by the factors identified in 40 C.F.R. Section 125.3(d)(2), and to consider whether the effluent limitation developed with such technology should be more stringent than BPT requirements.

115. The factors identified in 40 C.F.R. Section 125.3(d)(1) for consideration in the BPT determination for the facility include:

- (i) the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such reduction;
- (ii) the age of equipment and facilities involved;
- (iii) the process employed;
- (iv) the engineering aspects of the application of various types of control techniques;
- (v) process changes; and
- (vi) non-water quality environmental impact (including energy requirements).

40 C.F.R. §125.3(d)(1). Next, 40 C.F.R. Section 125.3(d)(2) lists the factors that must be considered to determine Best Conventional Treatment. With the exception of a cost-reasonableness factor requiring consideration of “[t]he reasonableness of the relationship between the costs of attaining a reduction in the effluent and the effluent reduction benefits derived,” the factors listed in 40 C.F.R. Section 125.3(d)(2) are substantially similar to those set forth in 40 C.F.R. Section 125.3(d)(1).

116. Illinois-American determined through BPJ that the BPT for the Alton facility is “no treatment” of the discharge. SSIS at 6-17. In addition, Illinois-American also determined that application of BCT technology was not cost-reasonable, and adoption of the BCT effluent limitations in lieu of the previously developed BPT effluent limitation thus was not warranted. SSIS at 6-20. Illinois-American’s BPJ analysis is discussed in greater detail in the Site Specific Impact Study. *See* SSIS at 6-15 to 6-20.

117. The second consideration in the required BPJ determination, the appropriate technologies for the category or class of point sources, requires consideration in this case of the various technologies for treating residuals from drinking water production facilities. These various methods, along with the reasons that such methods were rejected from further consideration, are discussed at Section II.E, above.

118. Finally, the third consideration (any unique factors relating to the applicant) requires consideration on these facts of the effects of the Piasa Creek Watershed Project.

Justification for the adjusted standard on the basis of the completion of the Piasa Creek Watershed Project, a substantially and significantly different factor than those relied upon by the Board in adopting the regulation of general applicability, is discussed at Section II.H.2, above.

119. In the previous proceeding on this adjusted standard, this Board determined that “the requested adjusted standard is consistent with existing federal law.” Opinion & Order with the Board dated Sept. 7, 2000 at 20. As noted above, the environmental characteristics and conditions of the Mississippi River near the Alton facility have not changed significantly since the Site Specific Impact Study was prepared in March 1999. *See* Affidavit of Alley Ringhausen at ¶¶12–13; Affidavit of Howard O. Andrews, Jr. at ¶¶2, 4–5. In addition, the federal laws applicable to this adjusted standard have not changed since 1999 such that the Board’s decision would no longer be relevant to the proceeding at hand. Granting an extension to Adjusted Standard 99-6 as requested herein is thus consistent with federal law.

**2. Procedural Requirements Imposed by Federal Law**

120. Federal law does not impose any additional procedural requirements that must be satisfied in this proceeding.

**J. Waiver of Hearing on the Petition**

121. Section 104.406(j) of the Procedural Rules provides that the petition must contain a statement requesting or waiving a hearing on the petition.

122. Illinois-American hereby waives a hearing on its Petition. Although Section 104.422(a)(4) of the Board’s Procedural Rules provides that a public hearing will be held and the Board will assign a hearing officer to an adjusted standard proceeding when the adjusted standard is sought pursuant to 35 Ill. Adm. Code 212.126 of the Clean Air Act, the Board’s Rules do not similarly require a hearing for the adjusted standard sought here. The facts relevant

to this Petition involve the progress and success of the Piasa Creek Watershed Project, which Petitioner believes to be undisputed.<sup>12</sup>

**K. Supporting Documents or Legal Authorities**

123. Section 104.406(k) of the Procedural Rules provides that the petition must cite to supporting documents or legal authorities whenever they are used as a basis for the petitioner's proof. Relevant portions of the documents and legal authorities other than Board decisions, State regulations, statutes, and reported cases must be appended to the petition.

124. Illinois-American has appended the following documents to this Petition in compliance with Section 104.406(k):

- Attachment A: Affidavit of Alley Ringhausen, Executive Director of Great Rivers Land Trust;
- Attachment B: Great Rivers Land Trust, Piasa Creek Watershed Project Report (October 2006);
- Attachment C: Black & Veatch Corporation, Evaluation of Residuals Discharged from Illinois-American Water Company's Alton Water Treatment Plant (October 2006);
- Attachment D: Affidavit of Paul Keck, the water quality supervisor at Illinois-American Water Company's Alton facility;
- Attachment E: Affidavit of Howard O. Andrews, Jr., an engineer at Black & Veatch Corporation; and
- Attachment F: Proposed Order of the Board.

To avoid duplication of the documents produced in the previous proceeding before this Board regarding Adjusted Standard 99-6, many of the documents relied upon in that previous proceeding have not been appended to this Petition.

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<sup>12</sup> Petitioner notes that GRLT has provided quarterly progress reports on the PCWP to the Agency and the Agency has steadfastly overseen the Project, all as noted by the Board. *See* Opinion & Order of the Board dated September 7, 2000 at 15, 16.

**L. Additional Information which may be Required by the Regulation of  
General Applicability**

125. Section 104.406(l) of the Procedural Rules provides that the petition must contain any additional information which may be required in the regulation of general applicability.

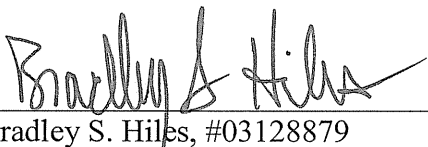
126. Sections 304.124, 304.106, and 302.203 of the Board's Water Pollution Control Regulations do not require a petition for an adjusted standard to contain any information in addition to that contained herein.

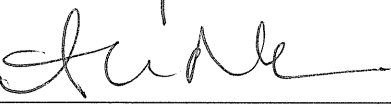
**IV. CONCLUSION**

WHEREFORE, for all the reasons stated above, Illinois-American Water Company respectfully requests that the Board grant the adjusted standard specified herein for Illinois-American's public water supply treatment facility in Alton, Madison County, Illinois in accordance with the Proposed Order of the Board attached hereto.

Respectfully submitted,

**ILLINOIS-AMERICAN WATER COMPANY**

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Attorneys for Petitioner

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED EXTENSION OF ADJUSTED STANDARD	)	AS 06-
APPLICABLE TO ILLINOIS-AMERICAN	)	(Adjusted Standard)
WATER COMPANY'S ALTON PUBLIC WATER	)	
SUPPLY FACILITY DISCHARGE	)	
TO THE MISSISSIPPI RIVER	)	

**MOTION TO INCORPORATE BY REFERENCE THE PETITION FOR ADJUSTED STANDARD FILED IN DOCKET NUMBER AS 99-6, AND THE SITE SPECIFIC IMPACT STUDY ACCEPTED INTO EVIDENCE IN DOCKET NUMBER AS 99-6, INTO PETITIONER'S PETITION FOR EXTENSION OF ADJUSTED STANDARD PURSUANT TO 35 ILL. ADM. CODE 101.306(a)**

Petitioner, Illinois-American Water Company ("Illinois-American"), by its attorneys Bradley S. Hiles and Alison M. Nelson, requests approval to incorporate by reference into the attached Petition for Extension of Adjusted Standard the PETITION FOR ADJUSTED STANDARD filed by Illinois-American Water Company in Docket Number AS 99-6 (the "March 1999 Petition"). Illinois-American also requests approval to incorporate by reference the attached SITE-SPECIFIC ANALYSIS OF IMPACTS OF POTENTIAL ALTERNATIVES FOR HANDLING PUBLIC WATER SUPPLY RESIDUALS AT PROPOSED ALTON, IL FACILITY prepared by ENSR, an environmental consulting and engineering firm, dated March 1999 (the "Site Specific Impact Study"), which was accepted into evidence in Docket Number AS 99-6.

In support of its motion, Illinois-American states the following:

1. On March 19, 1999, Illinois-American filed the March 1999 Petition with the Board, seeking an adjusted standard from the effluent standard for offensive discharges at 35 Ill. Adm. Code 304.106, the effluent standard for total suspended solids (TSS) at 35 Ill. Adm. Code 304.124, the effluent standard for total iron at 35 Ill. Adm. Code 304.124, and the general use water quality standard for offensive discharges at 35 Ill. Adm. Code 302.203. The March 1999 Petition was assigned a docket number of AS 99-6.
2. On September 7, 2000, the Board adopted Adjusted Standard 99-6, which provided that the effluent standard for offensive discharges at 35 Ill. Adm. Code 304.106 and the effluent standard for total suspended solids (TSS) at 35 Ill. Adm. Code 304.124 shall not apply to discharges from the Alton facility, and that the general use water quality standard for offensive discharges at 35 Ill. Adm. Code 302.203 shall not apply to a one mile stretch of the Mississippi River which receives effluent from the Alton facility and is immediately downstream from the Alton facility's discharge. On October 19, 2000, the Board issued an order modifying AS 99-6 to provide that the

effluent standard for total iron at 35 Ill. Adm. Code 304.124 also shall not apply to discharges from the Alton facility.

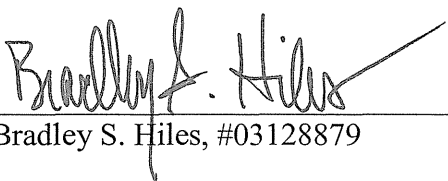
3. 35 Ill. Adm. Code 101.306 allows the Board or hearing officer to incorporate materials from the record of another proceeding provided that the material to be incorporated is authentic, credible, and relevant to the proceeding. See 35 Ill. Adm. Code 101.306(a).
4. Illinois-American's Petition for Extension of Adjusted Standard seeks an extension of the adjusted standard granted by the Board in AS 99-6. The March 1999 Petition that accompanies this filing was printed from the Board's website. This makes the March 1999 Petition authentic and credible. Also, the Petition for Extension of Adjusted Standard relies on much of the same information set forth in the March 1999 Petition, and the March 1999 Petition may therefore be useful to the Board to provide supplemental information regarding the issues discussed in the Petition for Extension. This makes the March 1999 Petition relevant.
5. The Site Specific Impact Study provides information regarding the environmental impact, technical feasibility, and economic reasonableness of the potential alternatives to treat discharges from the Alton facility; to satisfy state and federal requirements under various substantive and procedural statutes; and to address Illinois Environmental Protection Agency concerns about the facility. The Site Specific Impact Study was offered to and received in evidence by the Board in Docket Number AS 99-6. The Board has therefore already determined that the Site Specific Impact Study is authentic and credible. Also, the Petition for Extension of Adjusted Standard cites to the Site Specific Impact Study as the source for much of the information set forth in the Petition, and refers the Board to the Site Specific Impact Study for a detailed discussion of the justification for extension of Adjusted Standard 99-6. In addition, several affidavits submitted along with the Petition for Extension of Adjusted Standard also establish that the environmental conditions of the Mississippi River near the Alton facility have not changed significantly since the Site Specific Impact Study was prepared in March 1999. See Affidavit of Alley Ringhausen (attached to the Petition for Extension of Adjusted Standard as Attachment A), at ¶¶11-12; Affidavit of Howard O. Andrews, Jr. (attached to the Petition for Extension of Adjusted Standard as Attachment E), at ¶¶4-5. This makes the Site Specific Impact Study relevant.
6. The granting of this motion will not modify the Petition for Extension of Adjusted Standard or prejudice any party.

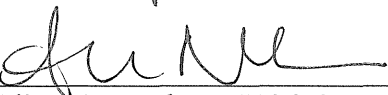
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WHEREFORE, Illinois-American respectfully requests that the Board grant this motion and incorporate by reference the PETITION FOR ADJUSTED STANDARD filed by Illinois-American Water Company in Docket Number AS 99-6 (the "March 1999 Petition") and the SITE-SPECIFIC ANALYSIS OF IMPACTS OF POTENTIAL ALTERNATIVES FOR HANDLING PUBLIC WATER SUPPLY RESIDUALS AT PROPOSED ALTON, IL FACILITY prepared by ENSR, an environmental consulting and engineering firm, dated March 1999 (the "Site Specific Impact Study") into Petitioner's Petition for Adjusted Standard pursuant to 35 Ill. Adm. Code 101.306(a).

Respectfully submitted,

ILLINOIS-AMERICAN WATER COMPANY

By:   
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By:   
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Attorneys for Petitioner



BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED EXTENSION OF ADJUSTED STANDARD	)	AS 06-_____
APPLICABLE TO ILLINOIS-AMERICAN	)	(Adjusted Standard)
WATER COMPANY'S ALTON PUBLIC WATER	)	
SUPPLY FACILITY DISCHARGE	)	
TO THE MISSISSIPPI RIVER	)	

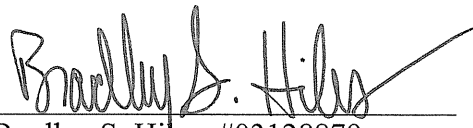
CERTIFICATE OF SERVICE

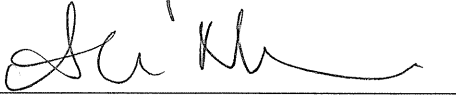
I hereby certify that on October 31, 2006, the attached PETITION FOR EXTENSION OF ADJUSTED STANDARD and the attached MOTION TO INCORPORATE BY REFERENCE THE PETITION FOR ADJUSTED STANDARD FILED IN DOCKET NUMBER AS 99-6, AND THE SITE SPECIFIC IMPACT STUDY ACCEPTED INTO EVIDENCE IN DOCKET NUMBER AS 99-6, INTO PETITIONER'S PETITION FOR ADJUSTED STANDARD PURSUANT TO 35 ILL. ADM. CODE 101.306(a) were filed by electronic transmission with the Office of the Clerk of the Illinois Pollution Control Board, and were served by first class mail, postage prepaid, upon the following person:

Division of Legal Counsel  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276

Respectfully submitted,

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