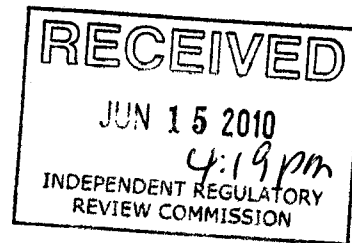


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2841

June 14, 2010



Environmental Quality Board  
P.O. Box 8477  
Harrisburg, PA 17105-8477

Re: AK Steel Corporation, Butler Works, Butler Pa.  
Comments Regarding: 25 Pennsylvania Code, Part 1, Subpart C Article II  
Chapter 93.7 – Proposed Ambient Water Quality Criteria, Chloride

AK Steel appreciates the opportunity to submit the following comments on the Environmental Quality Board's (EQB) proposed aquatic life water quality criteria for chloride.

In short, the proposed criteria do not reflect current scientifically-supported information regarding aquatic life chloride toxicity. We believe the proposed criteria should be withdrawn for this reason among others as discussed below.



The proposed rule, if implemented as final, will have extremely significant adverse impacts on the Butler Works. If the proposed aquatic life water quality criteria for chloride are adopted as proposed, and water quality based effluent limits based upon those standards are included in the NPDES Permit for the Butler Works, AK Steel would face massive capital, as well as operational and maintenance, costs for wastewater treatment, and the possibility of significant reductions to steel manufacturing operations currently performed at the Butler Works. These operations would be transferred to other AK Steel manufacturing facilities located in other states.

#### **About AK Steel and the Butler Works**

AK Steel is a leading producer of flat-rolled carbon, stainless and electrical steels, primarily for automotive, infrastructure and manufacturing, distributors and converters, and electrical power generation and distribution markets. The company is headquartered in West Chester, Ohio and operates facilities in the states of Ohio, Kentucky, Indiana and Pennsylvania.

AK Steel operates an electric furnace steel mill in Butler, PA (the Butler Works) for production of electrical, stainless, and carbon steels. AK Steel and its predecessor companies have operated from this location since the early 1900s. Operations include melting of steel scrap in electric furnaces, metallurgical refining, continuous casting, hot rolling and several steel finishing operations including combination acid pickling, annealing and surface coating. Over the last four years, the Butler Works produced an average of approximately 1,000,000 tons of steel per year. Much of the steel made is further processed and finished at the Butler Works.

AK Steel currently employs approximately 1,400 men and women at the Butler Works with an annual payroll of more than \$135 million.

The steel finishing operations at the Butler Works include hydrochloric acid pickling. During this process, chloride is carried from the process with the process wastewaters. The Butler Works uses the best available process wastewater treatment technologies as required by the USEPA's regulations. However, these technologies do not remove chloride from process wastewaters.

### **Comments on Proposed Water Quality Criteria for Chloride**

AK Steel finds it difficult to comprehend how the Department can propose such a broad brush, far reaching standard without considering the latest science and technology and without properly considering potential impacts on the manufacturing community and the economic viability of the Commonwealth. The Department allowed little "early and meaningful" involvement of the regulated community in the development of this proposed rulemaking. This failure is inconsistent with the mandate in the Commonwealth's regulatory review and promulgation regulations that require that regulations "shall be drafted and promulgated with early and meaningful input from the regulated community" (4 Pa. Code § 1.371(8)). AK Steel questions if this proposed rulemaking was fully reviewed and vetted, as there are numerous deficiencies from an environmental, technical, and economic perspective, as well as an apparent noncompliance with the Commonwealth's own regulatory review and promulgation regulation.

- The Department has provided no credible evidence that this action will provide any real or measurable improvement in aquatic life for affected streams in the Commonwealth, or that there are any more than a few waters impaired due to chloride toxicity. Simply stating that the proposed criterion "would provide an appropriate level of protection for all of this Commonwealth's waters" does not satisfy the requirements that these regulations address "a compelling public interest" or "definable public health, safety, or environmental risks," as required in 4 Pa. Code 1.371 (1) and (4). Particularly for such a wide-reaching and costly rule, these requirements should be extensively documented and available for public review.
- AK Steel supports the comments made by the Pennsylvania Chamber of Commerce regarding the deficiencies in the proposed chloride criteria and the biological basis for those criteria.
- A considerable amount of study on chloride toxicity has been conducted since the 1988 USEPA criteria were developed.<sup>1,2,3,4</sup> There is no information in the

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<sup>1</sup> Pickering, Q.H., J.M. Lazorchak, and K.L. Winks. 1996. Subchronic sensitivity of one-, four-, and seven-day-old fathead minnow (*Pimephales promelas*) larvae to five toxicants. *Environ. Toxicol. Chem.* 15:353-359.

<sup>2</sup> Wisconsin State Laboratory of Hygiene, 2007. Summary results available at [www.iowadnr.gov/water/standards/files/cissue.pdf](http://www.iowadnr.gov/water/standards/files/cissue.pdf)

<sup>3</sup> GLEC and INHS. 2008. Acute Toxicity of Chloride to Select Freshwater Invertebrates. Final Draft Report to USEPA. 9-26-08.

preamble for the proposed regulation that suggests Pennsylvania considered any more recent chloride toxicity information than that relied upon by USEPA more than 20 years ago when USEPA developed its recommended criteria at that time. In fact, USEPA has recently worked with the State of Iowa to develop chloride water quality criteria for the protection of aquatic life different than the currently recommended criteria of 230 mg/l (chronic) and 860 mg/l (acute).<sup>4</sup>

Proposing criteria without considering the most recent scientifically valid and available information and relying solely on a 22-year old document, which itself consists of data generated back to 1954, does not represent sound water quality management policy. Pennsylvania should retract its proposed water quality criteria for chloride given that the criteria are not based upon the most recent relevant and scientifically valid information.

- PaDEP's own document states that "scientists at the USEPA are currently conducting research to determine if the national criteria for chloride should be updated. The Department recommends adopting the current national aquatic life criteria...until new national aquatic life criteria are available for consideration."<sup>5</sup> While USEPA has not published new national recommended criteria as of this writing, the comment above suggests strongly that the current criteria are outdated and questionable. Also, USEPA's hand in development and approval of Iowa's chloride criteria certainly warrants PaDEP's consideration, especially considering the above comment.<sup>6</sup>
- In its 1988 criteria development document, USEPA states that sodium chloride is the only chloride compound with adequate data to facilitate deriving water quality criterion. Is it reasonable or practicable to limit all chloride compounds based upon dated information that relied heavily upon one chloride compound?
- How will the Department limit and control the application of road salt, a major contributor to chlorides in Pennsylvania waters?
- AK Steel notes that, as with the proposed standards for TDS, the water quality criteria for chloride were proposed primarily because of the development of the Marcellus Shale formation for natural gas production. PaDEP states as much in the preamble to the proposed chloride criteria:

"The Department recommends adopting these National chloride criteria for protection of aquatic life due to increasing concerns

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<sup>4</sup> Iowa Department of Natural Resources. Water Quality Standards Review: Chloride, Sulfate, and Total Dissolved Solids Consultation Package. February 9, 2009, updated March 2, 2009.

<sup>5</sup> Evaluation of Water Quality Criteria for Aquatic Life Use Protection, Chloride, January 2010, (i.e. PaDEP "Rationale Document")

<sup>6</sup> 05/1910 Letter from William A. Spratlin (USEPA,) to Wayne Gieselman (Director, Environmental Protection Division, Iowa Department of Natural Resources).

about the Statewide impact of natural gas extraction from the Marcellus Shale formation.”

Considering this statement, it follows that PaDEP's primary objective with this rule, as with the proposed TDS regulation, is to prevent deterioration of existing water quality conditions due to discharges from Marcellus Shale operations. If that is indeed the case, PaDEP should consider regulation of the specific source industry, instead of proposing regulations with the potential for widespread, and perhaps unintended, adverse impact on the entire regulated community.

- The proposed water quality criteria, and the possible NPDES permit limits resulting from their implementation, would require massive capital, operational, and maintenance expenditures at the Butler Works to install and operate unproven treatment technologies. The technology required to meet such limits would include reverse osmosis with appropriate pretreatment, followed by evaporative technologies for the reject stream<sup>7</sup>. Treatment technologies would result in a significant incremental energy increase at the Butler Works, in order to comply with the proposed regulation. Our current order of magnitude cost estimates for such treatment are an investment cost of \$50,000,000 and annual operation and maintenance costs of \$7,200,000. Presumably the PaDEP is trying to blunt the estimated costs of treatment by expressing the costs in cents per gallon. In actuality, the PaDEP's own low-end cost estimate of \$0.01 per gallon, multiplied over the Butler Works average discharge rate of 1.7 million gallons per day, yields an annual O&M cost of approximately \$6,200,000. PaDEP's estimates do not consider the initial capital investment costs to develop and construct wastewater treatment facilities.
- The preambles to both the current proposed regulations and current TDS regulations frequently state that there are several technologies available for treatment of chlorides, and by extension, TDS. However, the only technologies specifically cited are reverse osmosis, evaporation, and crystallization. What are the other technologies that have been considered? Presumably, the Department considered the technologies concurrently with the consideration given to treatment with respect to the TDS regulations. According to the Q&A document published with respect to the TDS regulations, the Department conducted their study by interviewing vendors of treatment technologies. This would appear to be an obvious conflict of interest in that these vendors stand to benefit greatly by the passage of these rules. Has a study of the available treatment options been conducted by a non-stakeholder (i.e. not a vendor of treatment technologies)? In either case, is the study of the treatment technologies available for public review?

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<sup>7</sup> Another alternative for disposal of the reverse osmosis reject stream would be deep well injection. However, we understand there are few, if any, approved deep wells for disposal of industrial process wastewaters in Pennsylvania; and, we have not determined whether it is technically feasible to install a deep disposal well at the Butler Works. Thus, we have little confidence that a deep well disposal alternative is a realistic one.

- The only technologies (reverse osmosis with appropriate pretreatment, evaporation, and/or crystallization) available to achieve compliance with this proposed rule for a large manufacturer such as AK Steel will require the use of a substantial amount of energy. This will result in the corresponding increases in all of the combustion related air pollution contaminants, including greenhouse gasses, emitted from electricity generating stations and the affected facilities, as well as a decrease in available energy (whether natural gas or electricity) to the general public. These secondary effects will undoubtedly result in an overall increase in energy costs. Has the Department developed an analysis of the secondary effects, on a statewide basis, of the proposed regulation? If so, is the document available for review?
- The steel industry, as with many other industries, is very capital intensive. If the regulation is enacted as proposed, it will be considerably more expensive to produce and finish steel at the Butler Works than it would be to produce and finish steel at a plant located in another state. The increased costs imposed on the Butler Works by the new chloride controls, if enacted, will be a factor considered by the Company when deciding how and where to invest its capital in the future. That is, AK Steel may be more likely to focus its future capital investments to modernize facilities at, or move production to, its plants that are located outside of the Commonwealth.
- The proposed regulation would put manufacturing facilities such as our Butler Works at a significant business disadvantage with both our domestic and global competitors outside of Pennsylvania who do not have to incur the cost of compliance with such stringent regulations. This is in direct conflict with the requirement that "regulations may not hamper the Commonwealth's ability to compete effectively with other states" (4 Pa. Code § 1.371(9)). For example, Ohio has no currently effective aquatic life criteria for chloride, and Kentucky's aquatic life chloride criteria are 1,200 mg/l (acute) and 600 mg/l (chronic). We encourage the Department to consider options such as those undertaken by Ohio EPA at AK Steel's Middletown Works in which in a biological study of the receiving water in the vicinity of the discharge will be used to determine what effluent limits for TDS are warranted. Certainly a similar approach could be used for chloride.

Considering the cost necessary to comply with water quality based limits derived from the proposed criteria, it is possible AK Steel would transfer production operations involving the use of hydrochloric acid to other AK Steel facilities outside of the Commonwealth of Pennsylvania. This would represent a significant reduction in operations at the Butler Works.

- For the handful of streams that might be impacted by chlorides, a regulatory framework granting the PaDEP authority to address impaired waters already exists. These existing regulations call for states to identify impaired waters and develop total maximum daily loads (TMDLs) for pollutants causing the impairment based on the site specific circumstances for each watershed. This is the approach required by the Clean Water Act, as well as the Pennsylvania

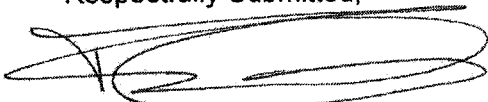
water quality regulations. The proposed chloride regulation is overreaching and would cause massive unnecessary capital investments in many cases. Simply developing a TMDL for chloride, instead of utilizing a unfocused, state-wide water criteria, will allow the Department to address any real, quantifiable chloride issue that might exist in Pennsylvania waters. Furthermore, the Commonwealth is obligated to adopt nonregulatory approaches when they exist, instead of promulgating new regulations (4 Pa. Code § 1.371(7)).

Furthermore, in the EPA document frequently cited in the preamble to the proposed regulations (Ambient Water Quality Criteria for Chloride, 1988), it states that "various species and ecosystems react and recover at greatly differing rates. Therefore, if adequate justification is provided, site-specific and/or pollutant-specific concentrations, durations, and frequencies may be higher or lower than those given in national water quality criteria for aquatic life." This would suggest that the EPA, itself, feels that a broad brush approach to implementing this 22-year old criteria, is not necessarily the best approach. Rather, a site-specific and/or pollutant specific approach is an acceptable way to regulate discharges.

In summary, the proposed regulation is a blanket, state-wide approach that may require massive capital expenditures and substantial increases in operating costs and energy consumption at many manufacturing facilities. In some cases, the proposed regulation may require these costs where the receiving streams are biologically healthy and there would be little or no environmental benefit.

AK Steel appreciates the opportunity to provide comments on the proposed rule, and we hope this letter outlines our deep concerns regarding the proposed rule including the potentially massive negative impact on the Butler Works.

Respectfully Submitted,



Frank Monteleone  
Environmental Engineer  
AK Steel Corporation

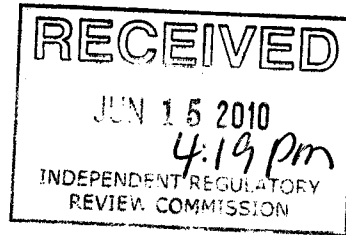
Cc: C. Levengood – AK Steel  
R. Dudek – AK Steel

2841

**From:** Monteleone Frank [Frank.Monteleone@aksteel.com]  
**Sent:** Monday, June 14, 2010 3:05 PM  
**To:** EP, RegComments  
**Cc:** Levengood Cory; Dudek Russ  
**Subject:** Comments on Proposed Rulemaking - Chloride Amb. Water Quality Criterion  
**Attachments:** Amb. Water Qulaity Criterion, Chloride - 6-14-10.pdf

Please find attached AK Steel Corporation's comments on the proposed rulemaking to amend Table 3 in 25 Pa. Code 93.7 (relating to specific water quality criteria for chlorides), as published in the Pennsylvania Bulletin on Saturday, May 1, 2010 (Doc. No. 10-771). If you have any questions, I can be reached at the number listed below.

Sincerely,  
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"220...221. Whatever it takes." - Jack Butler

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