

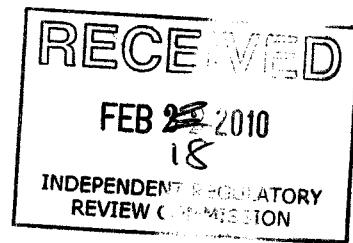
From: Michael Meloy [MMeloy@mgkflaw.com]
Sent: Friday, February 12, 2010 1:41 PM
To: EP, RegComments
Subject: Comments regarding Proposed Amendments to 25 Pa. Code Chapter 95 - TDS Effluent Standards
Attachments: Letter to Environmental Quality Board - Proposed Regulations regarding TDS Effluent Standards.PDF; TDS Comments (final draft 2-12-10).PDF

I am submitting to the Environmental Quality Board in electronic format comments prepared by Manko, Gold, Katcher & Fox, LLP on behalf of Horsehead Corporation, Norfolk Southern Railway Company and Sunoco, Inc. (R&M) regarding proposed changes to 25 Pa. Code Chapter 95 that were published in the Pennsylvania Bulletin on November 7, 2009. I have included both a transmittal letter and the comments themselves in a pdf format. My return name and address are set forth below. Please confirm receipt of these comments at your earliest convenience.

Thank you.

Michael

Michael M. Meloy, Esquire
Manko, Gold, Katcher & Fox, LLP
401 City Avenue, Suite 500
Bala Cynwyd, PA 19004
direct line 484.430.2303
phone 484.430.5700
fax 484.430.5711
mmeloy@mgkflaw.com

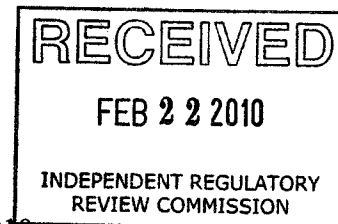


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AN ENVIRONMENTAL AND ENERGY LAW PRACTICE

2806



February 12, 2010

JOSEPH M. MANKO
MARC E. GOLD
BRUCE S. KATCHER**
NEIL S. WITKES*
MICHAEL M. MELOY
ROBERT D. FOX
JILL HYMAN KAPLAN
JONATHAN E. RINDE*
JOHN F. GULLACE*
BART E. CASSIDY*
BRENDA HUSTIS GOTANDA*
JONATHAN H. SPERGEL*
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NICOLE R. MOSHANG*
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KATHLEEN B. CAMPBELL*
MEREDITH DUBARRY HUSTON*
BRIDGET L. DORFMAN*
BRETT E. SLENSKY*
KATHERINE L. VACCARO*
ANGELA M. PAPPAS**
MATTHEW C. SULLIVAN*
BRYAN P. FRANNEY*

TECHNICAL CONSULTANTS
DARRYL D. BORRELLI
MICHAEL C. NINES

401 CITY AVENUE
SUITE 500
BALA CYNWYD, PA 19004

484 430 5700 TEL
484 430 5711 FAX
WWW.MGKFLAW.COM

CHERRY HILL, NJ
PHILADELPHIA, PA

*PARTNER RESPONSIBLE FOR NJ
**ADMITTED IN NJ AND PA
*ADMITTED IN DELAWARE
±ADMITTED IN PA AND DC

OTHER ATTORNEYS ADMITTED IN PA ONLY

Via Electronic Mail
Environmental Quality Board
Rachel Carson State Office Building
16th Floor
400 Market Street
Harrisburg, Pennsylvania 17101-2301

Re: Proposed Amendments to 25 PA Code Chapter 95 --
Effluent Standards for TDS, Chlorides and Sulfates

Dear Members of the Board:

On behalf of Horsehead Corporation, Norfolk Southern Railway Company and Sunoco, Inc. (R&M), we are submitting detailed comments regarding proposed additions to 25 Pa. Code Chapter 95 that were published in the Pennsylvania Bulletin on November 7, 2009. See 39 Pa. Bull. 6467 (Nov. 7, 2009). The proposed additions to 25 Pa. Code Chapter 95 include significant changes to the current rules governing wastewater discharge requirements for wastewater containing total dissolved solids ("TDS"). These changes will have grave consequences for a broad spectrum of the regulated community in Pennsylvania.

As described in the comments that are enclosed, the Pennsylvania Department of Environmental Protection ("PADEP") appears to have responded to watershed-specific issues of a temporal nature in western Pennsylvania by concluding that a chronic statewide TDS "crisis" exists in the Commonwealth that must be addressed on an expedited basis. The solution to this perceived crisis selected by PADEP is a "one-size-fits-all" uniform statewide approach that disregards the fact-specific complexities and nuances that are a critical part of Pennsylvania's water quality program. Moreover, the approach short-circuits the framework for developing tailored permit conditions for wastewater discharges that is well established under both federal and state law.

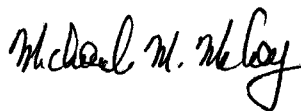


The effluent standards for TDS that PADEP has proposed (which correspond to non-enforceable guidelines developed by the United States Environmental Protection Agency for public water suppliers based on aesthetic considerations rather than health based considerations) may not be technologically feasible to achieve even with the use of advanced water treatment techniques. In its haste to advance a solution, PADEP has failed to perform a complete and accurate evaluation of the potential impacts that will stem from promulgating the proposed regulations including economic impacts on the regulated community, increased demand for energy, increased emissions of greenhouse gases, and adverse affects on environmentally beneficial activities such as water conservation efforts and advanced air pollution control measures. Moreover, the proposed regulations will result in large increases in treatment residuals such as brines and salts that will need to be managed. It appears that PADEP has given virtually no consideration to how such treatment residuals can be effectively managed under current environmental programs.

If the proposed regulations are finalized in their current form, the regulations will likely have dramatic and adverse consequences for the regulated community while potentially doing little on balance to improve the environment. We do not suggest that issues associated with TDS are unimportant. We do suggest that they are far more complex than the proposed regulations would signal and deserve a much more nuanced approach than the one that has been advanced. The tools under the Pennsylvania Clean Streams Law and the federal Clean Water Act already exist to provide the necessary solutions. We therefore request that the proposed regulations be withdrawn.

We appreciate the opportunity to comment on the proposed regulations and we would welcome the opportunity to discuss with PADEP alternative approaches to the proposed regulations.

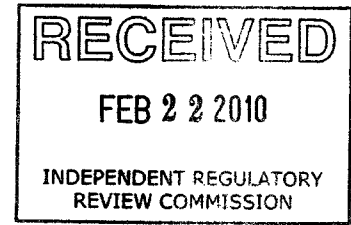
Very truly yours,



Michael M. Meloy
For MANKO, GOLD, KATCHER & FOX, LLP

MMM/dem/11010/12
Enclosure

2806



**PROPOSED AMENDMENTS TO
25 PA CODE CHAPTER 95**

**Comments Prepared by Manko, Gold, Katcher & Fox, LLP on
Behalf of:**

- **Horsehead Corporation**
- **Norfolk Southern Railway Company**
- **Sunoco, Inc. (R&M)**

**Marc E. Gold, Esquire
Michael M. Meloy, Esquire
Michael C. Nines, P.E., LEED AP**

**Manko, Gold, Katcher & Fox, LLP
401 City Avenue
Suite 500
Bala Cynwyd, PA 19004
(484) 430-5700
February 12, 2010**

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I. Introduction and Summary

On November 7, 2009, the Pennsylvania Environmental Quality Board (“EQB”) published in the Pennsylvania Bulletin proposed additions to 25 Pa. Code Chapter 95 developed by the Pennsylvania Department of Environmental Protection (“PADEP”). See 39 Pa. Bull. 6467 (Nov. 7, 2009). Publication of the proposed regulations triggered a 90-day public comment period regarding the regulations.¹ As described hereinafter, the proposed additions to 25 Pa. Code Chapter 95 include significant changes to the current rules governing wastewater discharge requirements for wastewater containing total dissolved solids (“TDS”). These changes will have grave consequences for a broad spectrum of the regulated community in Pennsylvania. Nevertheless, PADEP has indicated that it intends to “fast-track” the proposed regulations with the objective of finalizing and placing the regulations in effect no later than January 11, 2011.

As set forth in the proposed regulations, “new” discharges of wastewater with “High-TDS” will be prohibited unless they meet stringent “end-of-the-pipe” effluent standards for (1) TDS of 500 milligrams per liter (“mg/l”), (2) total chlorides of 250 mg/l and (3) total sulfates of 250 mg/l. Each of these effluent standards is based on a monthly average concentration in the discharge. The proposed regulations define a “new discharge of High-TDS wastewater” as a discharge that did not exist on April 1, 2009, and that has a TDS concentration that exceeds 2,000 mg/l or a TDS loading that exceeds 100,000 pounds per day. A “new discharge” is defined broadly to include any additional discharge, any expanded discharge or any increased discharge from a facility in existence prior to April 1, 2009. The proposed regulations apply not only to discharges to surface water bodies but also to discharges to groundwater, including land application and discharges to existing mine pools.

The proposed requirements described above cut a broad swath through the regulated community without distinguishing among the types of activities or operations that are associated with the “new discharges of wastewater with High-TDS.”² The proposed regulations also include additional requirements that are applicable to “new discharges of wastewaters resulting from fracturing, production, field exploration, drilling or completion of oil and gas wells.” These additional requirements appear to be predominantly targeted at drilling activities associated with the exploration and development of vast natural gas reserves lying under much of northern and western Pennsylvania in a geologic formation known as the Marcellus Shale. The additional requirements include a prohibition on direct discharges of certain types of wastewater from drilling activities, numeric effluent standards for total barium and total strontium, and pretreatments standards for discharges to publicly-owned treatment works (“POTWs”).

¹ On November 14, 2009, the EQB published in the Pennsylvania Bulletin a correction to the preamble to the proposed regulations and extended the public comment period until February 12, 2010. 39 Pa. Bull. 6547 (Nov. 14, 2009).

² The proposed regulations provide that discharges of wastewater produced from “industrial subcategories” with applicable Effluent Limit Guidelines for TDS, chlorides or sulfates established by the United States Environmental Protection Agency under the federal Clean Water Act as Best Available Technology Economically Achievable (“BAT”), Best Conventional Pollutant Control Technology (“BCT”), or new source standards of performance are exempt from the proposed effluent standards developed by PADEP. Neither PADEP nor the EQB attempt to describe how frequently this exemption will be relevant in practice.

The comments that are presented herein have been prepared on behalf of three industrial and/or transportation related entities including Horsehead Corporation (“Horsehead”), Norfolk Southern Railway Company (“NSRC”), and Sunoco, Inc. (R&M) (“Sunoco”). Horsehead, NSRC, and Sunoco are collectively referred to hereinafter as the “Commenters.” The Commenters represent a diverse cross-section of industry sectors that stand to be significantly affected by the proposed regulations as currently drafted. Horsehead provides services to the steel industry and other types of metals production companies. For example, Horsehead operates state-of-the art recycling facilities in Pennsylvania to recover zinc from electric arc furnace (“EAF”) dust produced by the steel industry. NSRC is a Class 1 freight railroad providing interstate freight transportation services to customers throughout Pennsylvania. NSRC operates an extensive network of rail lines and numerous rail facilities in Pennsylvania as part of providing these interstate transportation services. Sunoco is a leading manufacturer and marketer of petroleum and petrochemical products headquartered in Philadelphia. Sunoco is one of the largest independent refiner-marketers in the United States with multiple facilities in Pennsylvania.

As described in more detail hereinafter, PADEP appears to have responded to watershed-specific issues of a temporal nature by concluding that a chronic statewide TDS “crisis” exists that must be addressed on an expedited basis. The solution to this perceived crisis selected by PADEP is a “one-size-fits all” approach disregarding the fact-specific complexities and nuances that are a critical part of Pennsylvania’s water quality program. Moreover, in its haste to advance a solution, PADEP has failed to perform a complete and accurate evaluation of the potential impacts that will stem from promulgating the proposed regulations. While regulatory proposals seldom exist in isolation, rarely has a regulatory proposal been as fraught with as many significant secondary and tertiary consequences as the one at issue here including promoting increased energy consumption and increased emissions of greenhouse gases while impinging on environmentally beneficial actions such as efforts to conserve water and utilize state-of-the-art air pollution control equipment. These issues are discussed in greater detail hereinafter.

According to the *Regulatory Analysis Form (item 25)*³ that it completed, PADEP takes the position that the impetus for the proposed rulemaking is the need to control high-TDS wastewaters generated from natural gas drilling operations in the Marcellus Shale. While this may have been the stated trigger for this action, the impacts of the proposed regulations are substantially more expansive and far reaching. As currently drafted, the proposed regulations appear to apply to all dischargers of new “High-TDS” wastewater discharges without any recognition of the unique nature of the manufacturing operations, pollution control devices, existing treatment technologies, or other types of operations that are implicated. If the proposed regulatory amendments are finalized without significant changes, the reach of Pennsylvania’s wastewater discharge (and related treatment) requirements as revised will significantly impact industrial operations, manufacturing operations, transportation operations, pollution control efforts and water conservation efforts across the entire Commonwealth. Moreover, the proposed regulations have the potential to significantly impair the viability of sustainable business practices in Pennsylvania, by not only the Commenters but many other members of the regulated community, without achieving commensurate environmental benefits.

³ Independent Regulatory Review Commission, Regulatory Analysis Form #7-446, October 22, 2009 (IRRC #2806).

The Commenters also believe that the technical research and analysis performed by PADEP, which serves as the foundation for the proposed rulemaking, is fundamentally flawed. Water quality assessments for TDS were performed in late 2008 due to water quality issues observed in the Monongahela River Basin. While the measurements, trends, and observations are not disputed by the Commenters, the conclusions that PADEP has apparently drawn from the assessments are misplaced. Moreover, utilization of the observations and data trends as a basis for the proposed rulemaking is inappropriate for the statewide TDS discharge limitation as currently proposed.

Not only are the issues driving the proposed regulations framed in a flawed manner, the economic impact analysis of the effects on the regulated community from the proposed regulations as discussed in the preamble to the proposed rule and the *Regulatory Analysis Form (item 17)* is seriously deficient. Under the proposed regulations, new, increased, or expanded “High-TDS” discharges will be required to install advanced treatment systems to meet the requirements of the proposed rulemaking. According to the preamble to the proposed regulations, PADEP has estimated that “treatment costs could be on the order of \$0.25/gallon” in order to meet the proposed effluent standards. Treatment options to achieve the stringent standards set forth in the proposed regulations are limited and expensive. The Commenters do not believe that the estimate of treatment costs that PADEP has proffered is reflective of the advanced treatment capital and operational expenses that are likely to be necessary to comply with the proposed standards.⁴

Even more fundamentally, in the approach that it has embraced, PADEP appears either to be blind to or has chosen willingly to ignore the fact that the array of dissolved materials that make up TDS do not disappear through treatment but are simply either concentrated or converted to another form.⁵ The preamble to the proposed regulations describes TDS in the following manner. “[TDS] is comprised of inorganic salts, organic matter and other dissolved materials in waste. They can be naturally present in water or the result of runoff, mining or industrial or municipal treatment of water.” In very general terms, TDS as used in the proposed regulations is a measure of the ions that are present in water, regardless of what type of ions they may be. As such, TDS is a blunt instrument that does not distinguish between ions that may pose significant concerns with respect to water quality and those that do not. Nevertheless, this blunt instrument is the focal point of the proposed regulations.

The requirement that wastewater discharges meet a TDS standard of 500 mg/l means that either wastewater that contains TDS at greater than 500 mg/l will need to be diluted before discharge by adding “clean water” to it, or the wastewater will need to be treated to remove enough of the ions that are present to achieve the standard. If the former option is selected, the demand for low

⁴ Given the magnitude of many wastewater discharges in Pennsylvania, even minor increases in treatment costs can result very significant expenditures for individual dischargers to comply with new treatment standards.

⁵ One of the more immutable scientific principles is the first law of thermodynamics – namely, the conservation of mass. PADEP appears to have moved forward with the proposed regulations in basic disregard for this principle, ignoring the fact that if TDS is removed from wastewater through treatment, it will simply need to be managed in some other form. The proposed regulations appear to have been developed without any consideration to the tremendous challenge that managing treatment residuals will pose, assuming in the first instance that effective treatment approaches can actually be implemented.

TDS water will skyrocket and important objectives such as water conservation will be frustrated. If the latter option is selected, the ions that are removed by treatment and collected will not simply disappear. They will remain to be managed in the form of a more highly concentrated brine or perhaps in the form of a solid. It is not at all clear whether (or if at all) PADEP has evaluated how those ions will be managed and what consequences will flow from differing compliance management approaches. Moreover, as discussed hereinafter, the environmental costs in terms of energy usage, greenhouse gas emissions and adverse effects on pollution control measures from removing sufficient ions from the wastewater to achieve the proposed standard will be high indeed.

The need for a more carefully considered, nuanced approach to the issues that have sparked PADEP's interest is manifest. PADEP's expedited approach to the proposed rulemaking process severely limits the opportunities to obtain important input from industrial stakeholders and other affected parties. These concerns were underscored by recommendations made by PADEP's Water Resource Advisory Committee ("WRAC") in connection with the proposed regulations. WRAC considered the proposed regulations at a special meeting on June 19, 2009, and at its regular meeting on July 15, 2009. The WRAC, by majority vote, recommended that it work in conjunction with PADEP to form a statewide stakeholders group to analyze the issues and develop appropriate solutions, in lieu of proceeding with the currently proposed rulemaking. PADEP has nevertheless continued to forge ahead with the proposed rulemaking process.

If the proposed regulations are finalized in their current form, the regulations will likely have dramatic and adverse consequences for the regulated community while potentially doing little on balance to improve the environment. We do not suggest that issues associated with TDS are unimportant. We do suggest that they are far more complex than the proposed regulations would signal and deserve a much more nuanced approach than the one that has been advanced. The tools under the Pennsylvania Clean Streams Law ("CSL") and the federal Clean Water Act ("CWA") already exist to provide the necessary solutions. We therefore request that the proposed regulations be withdrawn.

II. The Technical Basis for the Proposed Regulations – PADEP's Formulation of the "Problem" to be Addressed

According to reports issued by PADEP, in the fall of 2008, concentrations of TDS (primarily chlorides and sulfates) in the Monongahela River reached their highest recorded levels (~925 mg/l). Water quality at seventeen public water system intakes from West Virginia to Pittsburgh exceeded the secondary Maximum Contaminant Level ("SMCL") for TDS established by the United States Environmental Protection Agency ("USEPA") of 500 mg/l. The SMCL for TDS is not based on human health considerations but on aesthetic considerations and represents a non-enforceable guideline developed by USEPA rather than a mandatory standard that must be met by those that provide public water supplies. Specifically, the SMCL for TDS is designed to address potential taste, staining and odor issues in public drinking water supplies and to limit the amount of hardness and scale associated with public drinking water supplies. According to PADEP, elevated levels of TDS and sulfates persisted through November and December 2008. Elevated chloride levels were also observed in the Monongahela River. Since the occurrence of elevated TDS in the Monongahela in late 2008, monitoring of the water quality in the river by

regulatory agencies has increased in the area, and much work had been done to isolate the potential sources of TDS.

Subsequent to receiving water quality data for the Monongahela River, additional surface water bodies were evaluated for TDS, including the Beaver, Neshannock, and Shenango Rivers. Moreover, according to PADEP, based on its receipt of several oil and gas extraction permit applications, evaluations of the assimilative capacities of watersheds for the West Branch of the Susquehanna and Moshannon Rivers resulted in permit application determinations that wastewater discharges would not be authorized for TDS in excess of the current water quality standards (i.e., 500 mg/l).

The TDS issues identified by PADEP in the fall of 2008 in the Monongahela River and in certain other water basins thereafter apparently prompted PADEP to identify the presence of TDS in surface water bodies across Pennsylvania as a crisis requiring immediate and dramatic actions. On April 11, 2009, PADEP issued a document entitled *Permitting Strategy for High Total Dissolved Solids Wastewater Discharges* (the "TDS Permitting Strategy") and the proposed regulations quickly followed. According to the TDS Permitting Strategy, the focal point for PADEP's concerns rest on regulating wastewaters from the hydraulic fracturing and recovery of natural gas in the Marcellus Shale geologic formation. In that document, PADEP indicated that hydraulic fracturing will generate demand for treatment of approximately 20 million gallons per day ("MGD") of high-TDS wastewaters by 2011. PADEP also stated that many of the areas where the drilling for natural gas is proposed also exhibit a history of regional acid mine drainage ("AMD") discharges resulting in reduced TDS assimilative capacity for the receiving streams in those areas.

While the Commenters do not dispute the raw data that PADEP reports, we note that a study conducted by Tetra Tech NUS ("Tetra Tech") on behalf of the Marcellus Shale Committee entitled *Evaluation of High TDS Concentrations in the Monongahela River, January 2009*, has identified a number of important discrepancies between PADEP's analysis of TDS concentration impacts and causes identified by PADEP. Namely, the Tetra Tech study indicates that the discharges from oil and gas exploration and production activities contributed minimally to the total TDS concentrations in the Monongahela River during the period of study. This conclusion was based on a number of facts including the following:

- Drought conditions were observed in the river basin during the study period resulting in less dilution than normally expected. Because TDS is a measure of the concentrations of ions in the water column, as the amount of water present decreases, a fixed number of ions results in increasing concentrations being reported;
- TDS concentrations in the Monongahela River were at or near the water quality standards upon entering Pennsylvania from West Virginia indicating that the sources of TDS affecting downstream water intakes were not from within Pennsylvania;

- The percentage of chlorides in TDS, typically present in oil and gas wastewaters, did not change significantly after the wastewater discharges associated with oil and gas exploration and production had been significantly reduced;
- The primary chemical constituent detected in the elevated TDS concentrations was sulfate, a known constituent associated with AMD;⁶ and
- An analysis of long-term statistical trends identified no significant differences in the mass loadings of TDS in the Monongahela River over the past seven years.

PADEP has conceded that there are multiple contributing factors to TDS, with AMD continuing to be a significant source of high-TDS wastewater in the western watersheds. Other streams and watersheds, such as surface water bodies in the Delaware River watershed in eastern Pennsylvania, were not given the same amount of technical scrutiny, review, or analysis for TDS assimilative capacities prior to the issuance of the proposed rulemaking.

The information that PADEP has gathered in tandem with other reports such as the Tetra Tech study described above underscore the fact that TDS issues vary significantly from stream segment to stream segment and from watershed to watershed. The issues are very fact specific and dependant on temporal considerations such as stream flow. Indeed, the issues identified in the Monongahela River during the fall of 2008 appear to be largely linked to AMD and the low flow conditions that existed at that time. Notwithstanding the complexity of the issues and the fact that under no circumstance are they asserted to be uniform or universal, PADEP has devised a “one-size-fits-all” approach embodied in the proposed regulations that is applicable to any “new High-TDS” wastewater discharge anywhere in the Commonwealth. Moreover, the approach that PADEP has devised is designed to address a “problem” that appears to have been framed improperly. PADEP appears to have engaged in a rush to judgment to explain why TDS concentrations in the Monongahela River were observed to be high during the fall of 2008 and then has used those conclusions as a point of departure for the proposed regulations. A careful evaluation of the data suggests that the picture may not be as PADEP has painted in providing the purported justification for the proposed regulations. In sum, PADEP’s premise for the proposed regulations is faulty.

III. The Regulatory Approach Selected by PADEP is Inconsistent with the Requirements of the Clean Streams Law and is Technically Flawed

According to the preamble of the proposed regulations, the authority to develop the proposed regulations derives from Section 5 of the CSL. This provision states in relevant part as follows:

The department, in adopting rules and regulations, in establishing policy and priorities, in issuing orders or permits, and in taking any other action pursuant to this act, shall, in the exercise of sound judgment and discretion, and for the

⁶ AMD is a source of elevated concentrations of TDS because the acidity of AMD facilitates the ability of various inorganic compounds to dissolve into the water column.

purpose of implementing the declaration of policy set forth in section 4 of this act, consider, where applicable, the following:

- (1) Water quality management and pollution control in the watershed as a whole;
- (2) The present and possible future uses of particular waters;
- (3) The feasibility of combined or joint treatment facilities;
- (4) The state of scientific and technological knowledge;
- (5) The immediate and long-range economic impact upon the Commonwealth and its citizens.

35 P.S. § 691.5(a).

As discussed below, the proposed regulations do not comport with the foregoing requirements. The proposed rulemaking and the development of statewide TDS discharge standards without sufficient scientific data and without evaluating the various statewide receiving waters for their assimilative capacity, stream designations, or current impairment is inconsistent with the criteria set forth in 35 P.S. § 691.5(a).

A. The Proposed Regulations are Inconsistent with the Well-Established Framework Governing Effluent Limits for Point Source Discharges

Pennsylvania has a well developed permitting program for point source discharges to protect water quality in Pennsylvania. This permitting program derives from authority under the CSL. It also reflects the architecture of the federal National Pollutant Discharge Elimination System (“NPDES”) permitting program under the CWA that PADEP is authorized to administer. As part of implementing the NPDES permitting program, PADEP is well-versed in establishing water quality based effluent limitations (“WQBELs”) to protect receiving waters. Instead of this approach, PADEP is attempting to short-circuit the type of evaluation that is legally mandated by adopting a single, state-wide numeric effluent standard for high-TDS wastewater discharges that did not exist on April 1, 2009.

The approach embodied in the proposed regulations is inconsistent with the basic provisions of the CWA, the CSL and their implementing regulations with respect to the establishment of effluent limitations for NPDES permits for individual pollutants of concern based on effluent sampling and analysis required as part of an NPDES permit application.⁷ Under both the federal

⁷ As noted earlier, TDS is a numeric measure of the collective presence of a broad array of dissolved constituents. These individual constituents in turn may be subject to permit-specific effluent limitations which take into account the characteristics of the individual constituents, the characteristics of the receiving waters (including their assimilative capacity) and treatment technologies that may be available. The proposed regulations override this process by creating a single state-wide effluent standard for TDS.

and state permitting schemes, effluent limitations for NPDES permits are based on the more stringent of effluent limitations derived from (1) industry-specific Effluent Limitation Guidelines (“ELGs”) typically promulgated by USEPA, (2) best professional judgment in the absence of an applicable ELG, and (3) applicable state water quality standards. The relationship between these three distinct but interrelated authorities is well established and has been an integral part of the NPDES permit program for many decades.

Pennsylvania’s regulations (25 Pa. Code § 92.2(d)) and permit guidance (Technical Guidance for the Development and Specification of Effluent Limitations and other Permit Conditions in NPDES Permits, Document No. 362-0400-001 (10/97) (“Technical Guidance”)) expressly adopt the foregoing construct. In each instance, whether an effluent limitation for a given pollutant is derived from an ELG, best professional judgment, or a water quality standard, the determination is either industry specific (the application of treatment technology to a given industry), site specific (based on the application of water quality standards) or a combination of both. The development of discharger specific effluent limitations for an NPDES permit is predicated first on an assessment of treatment technologies potentially suitable for a particular category of sources using statutory criteria that take into account both a level of performance and cost. Applicable water quality standards, which are stream segment-specific, serve as a locational trump card on uniform technology-based requirements in appropriate cases. Thus, the rationale that underlies this mandated approach for developing effluent limitations would, *per se*, lead to the rejection of the proposed state-wide TDS standard because it is wholly contrary to the fact specific analysis that PADEP is to follow.

Uniform discharge requirements of the sort now sought to be adopted by PADEP are not consistent with the basic structure of the federal and state NPDES programs or the CSL. Instead, PADEP is attempting to short-circuit the type of evaluation that is necessary by adopting a single numeric effluent standard for TDS across the Commonwealth. The proposed regulation also appears to ignore the fact that effluent limitations in an NPDES permit are developed on a pollutant-specific basis and that many of the constituents (e.g., heavy metals and organic pollutants) that may be detected within a TDS sample for a given discharge may already be subject to specific effluent requirements. Moreover, because effluent limitations for many of these types of pollutants are derived from applicable water quality standards, mixing zones and other well accepted practices can be used to develop appropriate NPDES permit conditions. These traditional methodologies for calculating water quality based effluent limitations would be foreclosed under the proposed regulations.

Additional evaluation and analysis is needed to understand the assimilative capacity and true nature of TDS concentrations throughout the Commonwealth in order for a statewide approach to high-TDS wastewaters to be implemented. The currently proposed regulations are not based on a sufficient scientific basis to justify a statewide approach to TDS discharge limitations. Instead of evaluating discharge limits on the basis of the characteristics of the particular attributes of the receiving waters and the nature of the discharge in question, PADEP seeks to

impose a single end-of-the-pipe solution across the Commonwealth. There is simply no place within the regulatory regime for a blanket, uniform standard for a pollutant such as TDS.⁸

B. PADEP has Not Adequately Considered the Economic Impact On the Regulated Community from the Proposed Regulations

The proposed regulations appear to have been developed without proper consideration of the economic impact on the regulated community or a legitimate cost benefit analysis. These are fundamental flaws in the current proposal. For example, it does not appear that PADEP considered the impact that the proposal may have on existing or expanding entities in Pennsylvania, or the potential for attracting new businesses to the Commonwealth. Prior to adopting regulations under the Clean Streams Law, PADEP is obligated to consider the immediate and long-range economic impact upon the Commonwealth and its citizens. 35 P.S. § 691.5(a).

Traditional wastewater treatment alternatives such as pH control, flocculation, coagulation, activated sludge, and filtration are not designed to reduce TDS concentrations in wastewater. In some cases, traditional wastewater treatment processes even increase TDS levels through the use of chemicals, polymers, and reagents. The primary mechanism for meeting TDS standards has been the use of dilution to achieve water quality standards, taking into account the assimilative capacity of the receiving waters.

Critically important challenges of a technical and economic nature are presented in the treatment of TDS in wastewater. The technologies typically utilized to remove TDS from wastewaters are state-of-the-art and are capital, energy, and operationally intensive. In addition, residuals (i.e., salt or brine solutions) are generated from these advanced treatment technologies and need to be managed in accordance with applicable environmental requirements. The management of residuals must be factored into any analysis of the feasibility of using advanced treatment technologies. State-of-the-art advanced treatment alternatives for high-TDS wastewaters are limited and include reverse osmosis (“RO”), evaporation, and evaporation with crystallization. Each of these alternatives is discussed below.

1. Reverse Osmosis

RO separation technology is used to remove dissolved impurities from wastewater through the use of a semi-permeable membrane. RO involves the reversal of flow through a membrane from a concentrated solution to a high purity (i.e., permeate) stream on the opposite side of the membrane. Pressure is used as the driving force for the separation and the applied pressure must be in excess of the osmotic pressure of the dissolved contaminants to allow flow across the

⁸ Against this long-standing backdrop of NPDES permitting program are the unique requirements that appear in 25 Pa Code Chapter 95 entitled “Wastewater Treatment Requirements.” This section purports to contain uniform, state-wide standards for a few constituents that apply to certain dischargers, when the other potentially applicable standards for a pollutant are less stringent. PADEP’s Guidance Document refers to the Chapter 95 criteria as “secondary standards,” although it is uncertain what that actually means. In any event, simply suggesting that the proposed regulations be codified in 25 Pa. Code Chapter 95 does not alter the fact that they fly in the face of Pennsylvania’s long-established and well founded approach to establishing effluent standards for point source discharges.

membrane. Treated wastewater, or permeate, is processed through the RO system and re-used or discharged. The concentrated solutions of wastewater are then "rejected" by the RO system and are known as residuals or "brine" solutions. RO is typically used to reduce dissolved solids in wastewaters with TDS concentrations of up to 45,000 mg/l.

It is necessary to establish pre-RO system wastewater quality guidelines to optimize system performance and prevent the three main problems associated with RO -- scaling, fouling, and degradation of RO membranes. These problems decrease system productivity because they reduce wastewater quality. Scaling occurs on RO membranes when the concentration of scale-forming species exceeds saturation, producing additional solids within the RO wastewater. Scalants include such chemical species as calcium carbonate, calcium sulfate, barium sulfate, strontium sulfate, and reactive silica. Since these species have very low solubilities, they are difficult to remove from RO membranes. Scaling decreases the effectiveness of the membranes in reducing the solids and causes more frequent cleanings.⁹

Fouling occurs when suspended solids, microbes and organic material deposit on the surface of the membrane. Soluble heavy metals, such as iron, can be oxidized within membranes and foul the membranes.

A final challenge with RO systems is membrane degradation. This occurs when the membranes are exposed to conditions that destroy the polymers used to create the membranes. Some membranes are susceptible to high and low pH, while others are degraded by exposure to oxidizers such as chlorine.

In order to minimize scaling, fouling, and degradation, pretreatment methods involving chemical processes, ion exchange, or ultrafiltration are often used in advance of RO systems. Pretreatment methods remove scale-forming species from the RO wastewater, while chemical techniques change the characteristics of the RO wastewater influent so that crystal formation is not favored.

We recently had the opportunity to assess the viability of an advanced RO TDS treatment system in connection with an evaluation that was completed in other circumstances. The evaluation involved a 2.0 MGD industrial wastewater treatment plant ("WWTP") at a manufacturing facility in Pennsylvania. Four RO manufacturers/distributors were contacted to take part in this assessment. The assessment concluded that for many of the reasons identified above, taking into account the technology needed to properly operate and maintain both the pretreatment and final treatment system components, the cost to purchase and install the system would be in the range of \$18 million to \$24 million with annual operating costs of approximately \$4.5 million to \$7 million, excluding brine disposal costs. The system was projected to generate a continuous stream of approximately 200,000 to 400,000 gallons/day of brine with a TDS concentration approaching 5,000 mg/l to 15,000 mg/l. Disposal of the brine would be an additional expense.

The Commenters believe that RO technology is not an economically or technically viable alternative for the treatment of high-TDS wastewaters, nor it is appropriate as a treatment alternative to meet the proposed statewide TDS discharge requirements.

⁹ Kucera, Jane. *Properly Apply Reverse Osmosis* Chemical Engineering Progress, February 1997. Pgs 54-61.

2. Evaporation

Evaporation technology is fairly straightforward as the evaporation process is driven by heat which converts evaporating wastewater into steam, leaving behind a concentrated solution high in TDS. The absorbed heat causes vaporization of the wastewater and an increase of TDS concentrations in the remaining brine. The resulting vapor may be vented to the atmosphere, or condensed for reuse. Mechanical evaporation is an energy-intensive way to concentrate liquids, and various economic challenges are presented when considering the use of fossil fuels for driving the heat transfer process. Solar evaporation ponds are another evaporation methodology and are popular systems when land availability, potential odor problems, and meteorologic and climatological conditions are not significant considerations. These types of systems are more typical of the western United States and are not common in Pennsylvania's climate. Additionally, the management of concentrated residuals presents similar problems to RO systems.

The Commenters believe that evaporation technology is not an economically or technically viable alternative for the treatment of high-TDS wastewaters, nor it is appropriate as a treatment alternative to meet the proposed statewide TDS discharge requirements.

3. Evaporation with Crystallization

Evaporation with crystallization includes the standard evaporation technology and also incorporates the use of additional evaporation of the concentrated residual brine solution resulting in a solid crystalline material (i.e., salt). The use of this type of tertiary style treatment system also presents extreme energy usage/consumption, air quality concerns, and economic hardship as large quantities of fossil fuels would be required for combustion resulting in degraded air quality and large operating expenses.

Additionally, wastewater evaporation/crystallization systems have not been demonstrated in Pennsylvania with the exception of a system developed by Hart Resources Technology, Inc. ("HRT").¹⁰ HRT is the only demonstrated commercial evaporation/crystallization system to treat high TDS wastewaters from the oil and gas industry. The HRT system has produced an average of 15 tons per day of granular sodium chloride and 3,000 gallons per day of liquid calcium chloride. HRT's design, permitting, construction, and start-up of the crystallizer took over three years from conception to operation. Although HRT's crystallizer is considered to be small by industrial standards for wastewater treatment (0.03 MGD), no other firm has installed an economically or technically viable system in Pennsylvania. HRT estimates that major modifications will be needed to the design of this type of technology in order to process and treat the predicted wastewater volumes generated by the oil and gas industry.

The Commenters believe that evaporation/crystallization technology is not an economically or technically viable alternative for the treatment of high-TDS wastewaters, nor it is appropriate as a treatment alternative to meet the proposed statewide TDS discharge requirements.

¹⁰ HRT's Senate Environmental Resources and Energy Committee, Public Hearing Comments on Marcellus Shale Natural Gas Wastewater Treatment Issues, January 27, 2010.

C. PADEP Has Not Considered the Secondary and Tertiary Effects of the Proposed Regulations

As described above, one of the drawbacks to the types of advanced treatment systems necessary to reduce concentrations of TDS in wastewater is the vast amount of energy that is necessary to run such systems. The concept of literally cooking wastewater using carbon-based fuel sources in order to separate the wastewater into a brine and steam is an option that calls into question whether the objectives to be met by the proposed regulations are commensurate with the environmental consequences of the process. Certainly greenhouse gas emissions are a major priority for PADEP at the present time. It does not appear that PADEP has considered the fact the proposed regulations will necessarily lead to significant increases in the use of energy and associated greenhouse gas emissions.

Moreover, as noted earlier, treatment processes to lower the concentrations of TDS in wastewater discharges do not destroy the materials making up TDS. They simply concentrate TDS in the form of a brine or convert the materials comprising TDS into a solid form (which remains quite soluble). Even if treatment of high-TDS wastewater is technically feasible to achieve the stringent effluent standard that PADEP has selected, the treatment process will leave behind vast amounts of concentrated liquid wastes or solids that must be managed in some fashion. The documents that PADEP has prepared in connection with the proposed regulations are silent as to how this issue is to be solved. Where are brines (which are by definition high-TDS wastewaters) to go in order to be treated? Is the solution to ship the brines out-of-state where they are no longer a Pennsylvania problem but a problem for another state? Should brines be injected into deep wells across the Commonwealth? If brines are further treated to form salt, where can the salt be placed? Does Pennsylvania have the type of landfill capacity that could accommodate a new and very large waste stream? Can salts in large quantities be safely placed in landfills without overwhelming the capacity of leachate treatment systems to handle the TDS issue that will necessarily follow as the salts dissolve in the presence of moisture?

Equally troubling is the fact that PADEP appears to have given no thought to the detriment the proposed regulations will have on environmentally beneficial activities. For example, in order to conserve water, many regulated entities are finding ways to recycle process water and reuse cooling water through multiple cooling cycles. However, these activities, while environmentally beneficial from almost every vantage point, can cause increased concentrations in TDS when wastewater is finally discharged. If the proposed regulations are finalized in their current form, they may very well deter the types of activities that are being actively encouraged or required by PADEP in other contexts.

Many advanced air pollution control devices also depend on using water as part of their operations. The resulting wastewater typically has high TDS levels. The environmental benefits from installing a state-of-the art scrubber to reduce air emissions may heavily outweigh the perceived environmental detriments from discharging wastewater that has elevated concentrations of TDS. However, if the proposed regulations go forward, companies may be forced to reevaluate the feasibility of proceeding with such pollution control devices.

Even in the context of the water program itself, certain treatment mechanisms that are designed to remove harmful pollutants from wastewater discharges may result in increased TDS

concentrations. The proposed regulations will necessarily change the balance of what treatment technologies are viable. The gains in lowering TDS concentrations may come at the cost of not being able to achieve other water quality objectives.

It is imperative that PADEP consider and fully address these types of issues before proceeding any further with the proposed regulations. The potential for unintended consequences from the proposed regulations is manifest. The time to think through the full effects of proceeding with the proposed regulations is now and not after the regulated community has spent millions of dollars attempting to comply with a new and unmanageable set of standards.

IV. Industry-Specific Perspectives – Impacts on Particular Activities and Operations from the Proposed Regulations

To illustrate the broad reach of the proposed regulations, the following sections of these comments describe particular effects that each of the Commenters may suffer if the proposed regulations are adopted. Given the diversity of the business operations in which the Commenters are engaged, it is clear that the proposed regulations will have far reaching and wide-spread impacts across the regulated community.

A. Primary Metal Processing Operations

Primary metal processing facilities such as those operated by Horsehead typically generate from multiple processes millions of gallons per day of what the proposed rulemaking would consider to be high-TDS wastewaters. To the extent these types of facilities may be altered or expanded in the future, the wastewaters from metals recovery processes could be classified as new discharges depending on how the proposed regulations are interpreted and applied. In Horsehead's case, the primary metals manufacturing operations consist of utilizing state-of-the-art recycling facilities to recover zinc from electric arc furnace ("EAF") dust generated by steel producers. Management of this material meets applicable requirements and provides the steel producers a sustainable alternative to placing EAF dust in landfills or using other disposal methods. Chlorides and sulfates contribute to TDS loading in wastewaters generated by primary metal processing facilities.

Federal ELGs define the wastewater treatment technologies appropriate for meeting technology-based effluent requirements for regulated parameters. For example, federal ELGs prescribe pH adjustment, metals precipitation, flocculation, settling, and multimedia filtration. Under the proposed regulations as currently drafted, unless subject to the exemption in Section 95.10(b)(6), any new or expanded discharge of high-TDS wastewater would need to be treated using one of the advanced treatment technologies such described above thereby drastically changing the cost of treatment. Moreover, and as stated above, this type of advanced treatment alternative has not been appropriately evaluated by PADEP as part of the rulemaking process.

B. Petroleum Refining and Chemical Manufacturing Operations

Petroleum refining and chemical manufacturing facilities such as those operated by Sunoco typically generate from multiple processes millions of gallons per day of what the proposed rulemaking would consider to be high-TDS wastewaters. To the extent that these types of

facilities may be altered or expanded in the future, the wastewaters from these facilities could be classified as new discharges depending on how the proposed regulations are interpreted and applied.

High-TDS wastewaters are generated from a wide variety of sources including pollution control devices such as wet gas scrubbers ("WGS"), process wastewaters, non-contact cooling water, cooling tower blow down, boiler blow down, raw river water treatment, and entrained water received from crude oil shipments. Currently, several facilities are approaching the proposed discharge limitations, or already exceed the proposed limits for TDS, sulfates, and chlorides. For Sunoco, one of the most significant contributors of existing high-TDS wastewater discharges is wastewater from the use of a WGS for the control of sulfur dioxide emissions.¹¹ One of the largest capital projects ever completed by Sunoco was the installation of a WGS unit for sulfur dioxide control at the Philadelphia Refinery's Fluid Catalytic Cracking Unit.

While improving air quality, operation of a major air pollution control device, such as a WGS, generates large volumes of wastewater and results in high-TDS wastewater discharges in the form of sulfates. Quality and environmental related improvements over time are likely to result in certain portions of existing wastewater generation and discharge to be considered new, expanded, or increased. Quality and environmental improvements may consist of water conservation measures, WGS system optimization, or operational improvements that are designed to achieve important environmental objectives.

In addition, petroleum refineries typically operate industrial wastewater pretreatment facilities in accordance with the federal pretreatment regulations. Sunoco operates existing pretreatment facilities and discharges treated effluent to POTWs. While Section 95.10(b)(6) of the proposed regulations provides an exemption for certain categories of discharges subject to federal regulation, that exemption does not reference the federal pretreatment program under Section 307(b) of the CWA. The logic for exempting discharges subject to the federal programs listed applies equally to the pretreatment program to the extent PADEP intends the proposed regulations to apply to indirect dischargers.

One of Sunoco's refineries located in eastern Pennsylvania is a good example. It operates under a pretreatment permit issued by the local POTW and sends both process and facility stormwater to the local POTW following pH adjustment and oil-water separation. This refinery's permitted flows are approximately 12.0 MGD with average flows of 6.2 MGD. The construction of the WGS would add an additional flow of approximately 158 gallons per minute or 0.23 MGD. As generated, the high-TDS wastewater WGS stream is estimated to contain roughly 58,000 mg/l TDS, 24,500 mg/l sulfates, and 625 mg/l for chlorides. Because the proposed WGS wastewater stream is small compared to the overall discharge to the POTW, the concentrations of TDS, sulfates and chlorides in the combined discharge to the POTW are estimated to be 1,500 to 2,000 mg/l for TDS, 500 to 750 mg/l for sulfates, and 150 to 200 mg/l for chlorides. It is unclear whether the proposed regulation applies to indirect discharges, but if so, would the new small-volume single stream WGS wastewater be a "new discharge" by itself, or would the combined

¹¹ State-of-the-art pollution control devices such as a WGS device are used to achieve USEPA's Lowest Achievable Emission Rate ("LAER") and other relevant regulatory objectives. The Philadelphia WGS reduces sulfur dioxide emissions by an estimated 847 tons per year and is a significant benefit to the regional air quality and State Implementation Plan ("SIP") objectives.

flow be considered a high-TDS wastewater discharge subject to the proposed discharge standards?

Under the proposed regulations as currently drafted, the capital and operational costs for advanced technological treatment of the WGS wastewater would be prohibitive. Technologies for TDS treatment are limited and economically infeasible in circumstances such as those described. Advanced treatment technologies that potentially could be considered include ion exchange, ultrafiltration, RO, electrodialysis, and evaporation. However, significant pretreatment operations would be necessary before any of these advanced treatment technologies could even be considered. Moreover, the large capital expenditures and excessive operational costs associated with these technologies contribute to their economic infeasibility.

C. Railroad Industry

The Commonwealth has long been a leader in rail transportation services. For more than 150 years, rail lines have provided key transportation links throughout Pennsylvania and the nation, allowing goods and passengers to move between population centers along the east coast and the vast interior sections of the country across the spine of mountains bisecting the Commonwealth. As a Class 1 freight railroad serving customers throughout Pennsylvania, NSRC is critical to the economic pulse of Pennsylvania.

Freight railroads are different from virtually every other sector of the regulated community in that they provide transportation services vital to interstate commerce over a network of privately-owned and maintained linear facilities that stretch across the Commonwealth.¹² Much of this infrastructure was originally constructed many decades ago and comprises a web of linear facilities similar to the highway system. In certain case, rail facilities bear the scars of historical practices predating our modern environmental programs. The proposed regulations potentially apply to discharges from rail facilities and remediation systems at rail facilities in the event such discharges are considered to be high-TDS wastewaters. Such a result would dramatically alter the costs of managing discharges and implementing remediation, assuming that treatment technologies could even be found that could feasibly be used in such contexts.

Remedial systems to address groundwater impacts often include extraction and treatment systems. Concentrations of TDS, total chlorides and total sulfides may exceed the proposed effluent standards under certain circumstances due to naturally occurring conditions. (The

¹² Because of the critically important and unique role that railroads play in facilitating interstate commerce, the federal government has recognized and implemented long-standing policies to promote uniform federal regulation of the railroads to enable the railroads to serve the citizens of multiples states and local jurisdictions without being subjected to layers of competing state and local requirements. To that end, the federal Surface Transportation Board (“STB”) is vested under the Interstate Commerce Commission Termination Act (“ICCTA”) with exclusive jurisdiction over transportation by rail carriers, including the construction, acquisition, operation, abandonment and discontinuance of tracks and facilities. See 49 U.S.C. §§ 10501(b). As such, states and local governmental entities are generally precluded from imposing requirements that intrude on transportation by railroads, including construction and operation of tracks and facilities. To the extent that the proposed regulations impinge on the ability of the railroads such as NSRC to conduct rail transportation activities in Pennsylvania, the proposed regulations run afoul of the express provisions of ICCTA.

requirements in 25 Pa. Code Chapter 95 applicable to dissolved iron has already produced a similar conundrum.) Thus, without any sense of the assimilative capacity of the particular receiving streams to which extracted groundwater may be discharged, application of the proposed regulation to groundwater extraction and treatment systems may render such systems infeasible, thereby precluding the installation and operation of remedial systems that would otherwise provide significant environmental benefit. Moreover, the application of these arbitrary effluent standards are likely to undermine the cleanup requirements established under the Pennsylvania Land Recycling and Environmental Remediation Standards Act ("Act 2").

V. Implementation and Interpretational Concerns

A. Expedited Rulemaking Process

In April of 2009, PADEP outlined the foundation and purported scientific rationale for promulgation of new regulations to address the existing and potential pollution of the Commonwealth's waters from sources of TDS, sulfates, and chlorides. The proposed regulations at issue here were presented to WRAC at a special meeting of WRAC on June 19, 2009, and were considered by WRAC at its regular meeting on July 15, 2009. During the latter meeting, WRAC requested PADEP to form a stakeholder group to analyze the implications of the proposed rulemaking in lieu of proceeding with the proposed regulations. According to the minutes of the meeting on July 15, 2009, WRAC took the following positions:

WRAC recognizes and fully supports the protection of all of the Commonwealth's surface and ground waters. However, from the commentary received at WRAC's June meeting and today's discussions, it is clear that the draft Chapter 95 regulation to limit the discharge of total dissolved solids and several other pollutants affects not only the quality and uses of the Commonwealth's waters but also many different sectors of Pennsylvania's economy.

WRAC believes that the ramifications of the draft Chapter 95 regulations are wide ranging and have not been adequately analyzed by the Department. Specifically, WRAC believes that the draft regulation needs to be supported by science. Among other things, the Department needs to analyze more fully the surface water impacts of existing high TDS discharges, potential water quality impacts from new high TDS discharges, the treatment technologies needed to achieve compliance, and the impacts of the regulation on energy consumption, air emissions, residual waste generation and disposal, mine-land reclamation, and the economic impacts on the development of the Marcellus Shale and other affected sectors of Pennsylvania's economy.

Rather than proceeding to public notice with a proposed rule, WRAC recommends that the Department work in conjunction with WRAC to form a statewide stakeholders group to analyze the issues and develop appropriate solutions. This approach was very successful in developing the Department's "Water Quality Antidegradation Implementation Guidance," and WRAC believes that it can be successful in this instance, too.

In the interim, WRAC encourages the Department to use the full range of regulatory resources at its disposal to ensure protection of the existing and designated uses in the Commonwealth's receiving streams.

Following the WRAC meeting on July 15, 2009, a WRAC Subcommittee on the proposed regulations was formed to address the issues related to the proposed rulemaking. On August 27, 2009, the Subcommittee met and industry sector groups were formed to address (1) industry sector discharges, including locations and amounts, (2) options for reductions, (3) the costs and benefits of treatment (to include energy costs and additional water use if appropriate), (4) unknowns, and (5) residuals produced (including amounts, possible specifications and possible uses). The sector groups represented included underground and surface mining operations, oil and gas operations, industrial operations, municipal interests, electric generating facilities and utilities, drinking water suppliers, and natural resource operations. Subsequent Subcommittee meetings were held in October and November 2009 with industry sector presentations discussing the proposed rulemaking's impact and feasibility of implementation on each sector. Based on PADEP's intent to finalize and implement the proposed regulations by January 1, 2011, the Subcommittee has been endeavoring to provide its recommendations on the proposed rulemaking to PADEP by April 1, 2010.

The Commenters agree with the observations and recommendations of WRAC from the meeting on July 15, 2009. The issuance of the proposed regulations is premature without far greater input from the regulated community. For example, the need to address the technical and economic feasibility of the proposed standards in advance of moving forward with the proposed regulations is of paramount importance and required under the CSL. The ramifications from the proposed regulations are far too great and the purported justifications for the proposed regulations are far too thin to proceed in the expedited fashion that PADEP has endorsed.

B. Additional Issues

If PADEP decides to press forward with the regulatory process using the approach that it has embraced in the current version of the proposed regulations, a number of key issues and concerns pertaining to the proposed regulations as currently drafted must be resolved. These issues and concerns are discussed below.

1. Rationale for Using the SMCL for TDS as an Effluent Limitation

The proposed regulations and supporting documents are unclear as to the basis that PADEP has used for establishing the proposed discharge limitations for TDS based on an SMCL for TDS. The SMCL for TDS represents a secondary standard established by USEPA under the federal drinking water program for public drinking water supplies. Moreover, as previously noted, the SMCL for TDS is a non-enforceable guideline based on aesthetic considerations. Nevertheless, PADEP has plucked this guideline out of the drinking water program and proposes to apply it as a uniform, statewide end-of-pipe effluent standard for wastewater discharges. In essence, PADEP is proposing that wastewater discharges meet aesthetic-based public drinking water guidelines for TDS regardless of where the wastewater is going to be discharged and what the characteristics of the receiving water may be. The scientific and regulatory justification for this

approach is missing. Such a gap in the regulatory analysis is of critical importance when the regulated community may be forced to expend tremendous resources attempting to meet such a standard.¹³

2. Potential Application of Proposed Effluent Standards to Indirect Dischargers

Many Pennsylvania industries currently discharge high-TDS wastewaters to POTWs without causing detriment to the ultimate receiving waterbodies. The proposed regulations are unclear as to how the new effluent standards may relate to pretreatment requirements for discharges directed to POTWs. (The discussion of Sunoco's concerns highlights the importance of the set of issues raised by this potential interpretation.) Will this issue be dealt with solely through the NPDES permitting process for the POTW? Will a new high-TDS discharge to a POTW trigger the need for the POTW to comply with the new effluent standards?

3. Potential Interplay with Requirements under the CWA

Many facilities complying with Section 316(b) of the CWA would otherwise be penalized for water conservation measures and increased TDS concentrations in cooling tower wastewaters under the proposed regulations. It does not appear as if the implementation of requirements under Section 316(b) of the CWA have been considered as part of PADEP's regulatory impact analysis. This is a significant deficiency in the proposed regulations.

4. The Definition of a New Discharge

The proposed regulation applies to "a new discharge of High-TDS wastewater...that did not exist on April 1, 2009..." Such an applicability requirement is unworkable, may exceed PADEP's authority and may be unconstitutional. There is nothing in the preamble to the proposed regulation explaining the basis for this requirement; a date that predates by ten days the publication of PADEP's TDS Permitting Strategy discussed earlier. The ramifications of this retroactive applicability requirement are manifest. For example, any analysis by a discharger of (a) a planned expansion of a facility, (b) a commitment to install pollution control equipment, (c) a site remediation project and/or (d) facility improvements for water conservation or to meet other forms of sustainability goals that was completed prior to November 14, 2009, the date these regulations were proposed, could not have taken into account the substantial additional costs compliance with this proposed regulation will require. In fact, projects such as these may have been completed in the latter months of 2009 and, by the terms of the proposed regulation, would have to be significantly upgraded. These upgrades would have to be completed in less than one year based on the terms of PADEP's Permitting Strategy; a deadline that is clearly unrealistic. Thus, the Commenters believe that it is arbitrary and beyond PADEP's authority to promulgate this regulation with a retroactive effective date and an unachievable compliance date.

¹³ Both groundwater and surface water bodies in Pennsylvania may contain naturally occurring concentrations of TDS that exceed the proposed effluent standard advanced by PADEP. Merely conveying such naturally occurring waters into a surface water body in turn could trigger the need to treat those naturally occurring waters to meet the SMCL for TDS.

5. The Definition of an Expanded Discharge.

Under the broad definition of a “new High-TDS” wastewater discharge in the proposed regulations, the expansion of an existing discharge appears to be included. However, it is unclear what PADEP intends to include within this universe. For example, is the applicability trigger for an expanded discharge simply an increase in the concentration of TDS, sulfates and/or chlorides in wastewater above the current levels covered? Is more required – such as the construction or modification of a new source, a change in the method of operation that increases flow rates, etc? Also, if there is a new or expanded source, is it only that waste stream that would be subject to the discharge standards? How would the requirements apply if the new discharge is combined with other discharges for treatment at the facility’s wastewater treatment plant? Would triggering the applicability limit then incorporate all of the facility’s wastewater under the new limits or only the “expanded” wastewaters? Is any increase in a wastewater discharge, or alternatively, a percentage increase in wastewater discharge considered an expanded discharge? If an existing NPDES permitted wastewater discharge is subsequently added to, but the combined discharge is still below the allowable permitted discharge limitations, would this entire discharge be considered an expanded discharge even though the new discharge does not result in an increase of the flow listed on the NPDES permit? There are a myriad of circumstances that must be considered and addressed if PADEP intends to proceed with the regulation as proposed.

6. Potential Interplay with Water Quality Standards Published by the Basin Commissions and Applicability to Estuaries

There are several concerns about the application of the proposed regulations to interstate waters and estuaries. In some parts of the Commonwealth, certain water bodies are subject to water quality standards established by interstate Basin Commissions that are applicable to multiple states. Under this proposed regulation, dischargers located in Pennsylvania will have to meet a technology based requirement that would be significantly different (and significantly more expensive) than dischargers in adjoining states regardless of the applicable surface water quality requirements and actual ambient conditions. In estuaries, the proposed regulation may make even less sense in light of the naturally occurring brackish conditions typically found in major segments of these estuarine streams. It is unclear how the proposed regulation would be applied to facilities that are located within the jurisdiction of one of the Basin Commissions that have published water quality standards or criteria for TDS. Is it PADEP’s intention to preempt those standards by adopting this regulation? The Commenters also recommend that PADEP consider an exemption for high-TDS wastewater discharges into streams with naturally occurring levels of TDS, sulfates and chlorides above specified levels such as estuaries.

VI. Conclusion

For all of the reasons set forth above, the Commenters believe that the problem PADEP is seeking to address by the proposed regulations is ill-defined, and the approach for reducing TDS, chlorides and sulfates in wastewater discharges is significantly flawed. The one-size-fits-all strategy appears to be an overly simplified way to avoid a full analysis of both the perceived problem and the appropriate solutions. It is inconsistent with the long-standing framework of the CWA and the CSL, which is predicated on discharge standards developed on an industry-specific

basis taking into account economic and technological feasibility in combination with water quality standards keyed to the particular receiving stream. The features of the proposed regulations disregard both of these elementary concepts and should not be adopted. Instead, PADEP should continue to refine its analysis of the problem, consider fully the implications of alternative strategies for reducing TDS concentrations in wastewater discharges, and propose requirements, if needed, that can be implemented to achieve the prescribed goals.

We appreciate the opportunity to provide these comments to PADEP and hope they will be given due consideration.