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COMMONWEALTH OF PENNSYLVANIA

ENVIRONMENTAL QUALITY BOARD

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IN RE: WASTE WATER TREATMENT REQUIREMENTS (No. 7-446)

* * * * *

BEFORE: DUKE ADAMS, Chair, DEP

HEARING: Tuesday, December 15, 2009
5:04 p.m.

LOCATION: DEP Cambria District Office
286 Industrial Road
Ebensburg, PA 15931

WITNESSES: Paul Hart, Ken Yingling, Josie Gasky,
Barry Tuscano, Chuck Winters

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I N D E X

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OPENING REMARKS

By Mr. Adams

4 - 8

TESTIMONY

By Mr. Hart

8 - 15

TESTIMONY

By Mr. Yingling

15 - 20

TESTIMONY

By Ms. Gasky

20 - 29

TESTIMONY

By Mr. Tuscano

29

TESTIMONY

By Mr. Winters

30 - 35

E X H I B I T S

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<u>Number</u>	<u>Description</u>	<u>Page</u> <u>Offered</u>
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NONE OFFERED

P R O C E E D I N G S

CHAIR DUKE ADAMS:

I would like to welcome you to the Environmental Quality Board Public Hearing on a proposed regulation regarding wastewater treatment requirements. My name is Duke Adams. I'm and Executive Policy Specialist with the Department of Environmental Protection's Policy office in Harrisburg. I am representing the EQB at this evening's hearing. I officially call this hearing to order at 5:04 p.m.

The purpose of this hearing is for the EQB to formally accept testimony on the proposed regulations concerning wastewater treatment requirements. In addition to this hearing the EQB held a similar hearing on this proposal yesterday in Cranberry Township. The EQB will also hold additional hearings this week on the proposed rulemaking on Wednesday, December 16th, 2009, in Williamsport and on Thursday, December 17th, 2009, in Allentown.

This proposed rulemaking, which was approved by the EQB on August 18th, 2009, establishes equitable limits for new or standard sources of wastewaters containing high concentrations of Total

1 Dissolved Solids otherwise known as TDS. The proposed
2 regulations apply to new wastewater discharges that
3 did not exist on April 1, 2009, and that contained TDS
4 concentrations greater than 2,000 milligrams per liter
5 or a TDS loading that exceeds 100,000 pounds per day.

6 For purposes of the rulemaking a new
7 wastewater discharge includes an additional discharge,
8 an expanded discharge, or an increased discharge from
9 the facility in existence prior to April 1, 2009.
10 The proposed rulemaking also establishes monthly
11 average discharge limits of 500 milligrams per liter
12 of TDS, 250 milligrams per liter of total chlorides
13 and 250 milligrams per liter of total sulphates for
14 all new discharges of wastewater with high TDS.
15 Additionally, new discharges of wastewater resulting
16 from fracturing, production, field exploration,
17 drilling, or completion of oil and gas wells must also
18 meet a monthly average discharge limit of 10
19 milligrams per liter for both barium and strontium.

20 The Department initiated extensive
21 outreach in the development of this proposed
22 rulemaking including presenting the rulemaking for
23 review and comment to the Water Resource Advisory
24 Committee, also known as WRAC, W-R-A-C. At several
25 meetings in the summer of 2009, in order to give

1 everyone an equal opportunity to comment on this
2 proposal I would to establish the following ground
3 rules.

4 Number one, I will first call upon the
5 witnesses who have pre-registered to testify at this
6 hearing. After hearing from these witnesses I will
7 provide any other interested parties with the
8 opportunity to testify as time allows.

9 Two, testimony is limited to 10 minutes
10 for each witness.

11 Three, organizations are requested to
12 designate one witness to present testimony on its
13 behalf.

14 Four, each witness is asked to submit
15 three written copies of his or her testimony to aid in
16 transcribing the hearing. Please hand me your copies
17 prior to presenting your testimony.

18 Five, prior to presenting your testimony
19 please, state your name, address, and affiliation for
20 the record. The EQB would appreciate your help by
21 spelling names and terms that may not be generally
22 familiar so that the transcript can be as accurate as
23 possible.

24 Six, because of purpose of a hearing it's
25 received comments on the proposal the EQB or DEP staff

1 may question witnesses; however, the witnesses may not
2 question EQB or DEP staff. In addition to or in place
3 of oral testimony presented at today's hearing
4 interested persons may also submit written comments on
5 this proposal. All comments must be received by the
6 EQB on or before February 12th, 2010. Comments should
7 be addressed to the Environmental Quality Board, P.O.
8 Box 8477, Harrisburg, PA 17105-8477. Comments may
9 also be emailed to regcomments@state.pa.us. That's
10 regcomments, R-E-G-C-O-M-M-E-N-T-S @state.pa.us.

11 All comments received of this hearing as
12 well as written comments received by February 12th,
13 2010, will be considered by the EQB and will be
14 included in a comment and response document, which
15 will be prepared by the Department and received by the
16 EQB prior to the Board taking its final action on this
17 regulation. Anyone interested in receiving a copy of
18 the transcript of today's hearing may contact the EQB
19 for further information.

20 I would now like to call the first
21 witness. And as you come up to the podium please,
22 come this way so as not to get into the Court
23 Reporters' cords and things. Come around here, drop
24 off your testimony and then proceed to give your
25 testimony at the podium. Our first person this

1 evening is Paul Hart.

2 MR. HART:

3 First of all I'd like to thank ---.

4 CHAIR:

5 Actually, if you could start with your
6 name, address and your affiliation?

7 MR. HART:

8 Yes.

9 CHAIR:

10 Thank you.

11 MR. HART:

12 My name is Paul Hart, President of Hart
13 Resource Technologies in Pennsylvania and Pennsylvania
14 Brine Treatment. The address is P.O. Box 232,
15 Creekside, Pennsylvania. I'd like to thank DEP for
16 this opportunity to comment on these proposed
17 regulations. Our business has been in Pennsylvania.
18 We have three facilities treating the wastewater for
19 the Oil and Gas Industry. We've been in existence for
20 24 years and we've been treating hundreds of thousands
21 of gallons each day with an NPDS permit that we
22 received through DEP that determines the quality of
23 the water that we discharge. And that quality has
24 changed over the years and of course we've improved
25 our facility over the years to meet those discharge

1 requirements.

2 We agree that there is a need to address
3 TDS and there is a --- we do agree that there is a
4 need to make modifications to the existing
5 regulations, but we do not agree with the proposed
6 regulation because we do not agree that it solves the
7 problem. DEP claims that the new 500 TDS strategy is
8 necessary because the assimilative of capacity is
9 diminished or eliminated. We believe that this is
10 incorrect. There is sufficient assimilative capacity
11 based on current data. In addition to numerous
12 individual analysis done by various industries a study
13 was performed by Tetra Tech in January of 2009 on the
14 Monongahela and concluded that the TDS and sulfate
15 concentrations in the Mon, even though they did exceed
16 the PADP water quality criteria only a few days during
17 low flow conditions, the chloride concentrations did
18 not exceed this water quality criteria.

19 There are other studies that also
20 indicate that the higher TDS is most likely the
21 sulfates and that there is an elevated sulfate
22 concentration coming across the border into
23 Pennsylvania from West Virginia. The changes to
24 Chapter 95 as I said before, they do not solve the
25 problem. DEP cites several studies on other river

1 systems that they claim are impacted by high TDS and
2 this is mostly sulfates attributable to acid mine
3 drainage.

4 The conclusion of these studies is that
5 some of the stream systems in Pennsylvania, even after
6 the policy is enacted, will not address these
7 problems. It does not address the abandoned mine. It
8 does not address other unregulated sources so even if
9 it's implemented it will not improve the water quality
10 significantly. We argue that an assimilative capacity
11 does exist. We've been discharging into the Allegheny
12 Water Shed for 24 years with no known negative impact.
13 We've had numerous studies done, toxicology tests,
14 both independent and required by the U.S. Fish and
15 Wildlife Service and we still, the assimilative
16 capacity still has not been --- even come close to
17 being reached in the Allegheny River area.

18 One of the issues that is being proposed
19 by DEP is the use of the best available technology. A
20 lot of people make references to membrane technology,
21 evaporation, crystallizers; the reality is, is the
22 kind of volumes of water that need to be treated in
23 Pennsylvania to meet the 500 milligrams of TDS
24 requirement, there is no technology that is in use.
25 It is existing in other industries for other types of

1 wastewaters, but to be used particularly for the Oil
2 and Gas Industry for the types of water such as the
3 Marcellus and for the volumes of waters that are being
4 proposed it doesn't exist so there is no best
5 available technology to meet that standard. It would
6 take many years and an awful lot of money to transfer
7 that technology to meet those requirements. We are
8 the only company who has had the experience operating
9 a crystallizer. Our discharge would meet that
10 requirement, but it took us four years and millions of
11 dollars to treat a small volume of water only 30,000
12 gallons per day. We produced 15 tons a day of salt
13 that was nearly food grade and 3,000 gallons per day
14 of calcium chloride. So we know what we're talking
15 about. We've already tried this.

16 One of the problems with the various
17 vendors who are promoting to satisfy the needs of this
18 regulation is they're not solving the problem.
19 They're only deferring the problem to somewhere else.
20 They're proposing to remove the salts but than it's to
21 go to a landfill even though no landfill has agreed to
22 take this salt. They're proposing to generate a brine
23 concentrate and all they're doing is concentrating the
24 contamination into a smaller volume and then it still
25 needs to be addressed by somebody out some other way.

1 We've had people approaching us and we've
2 said no, we're not going to take that brine
3 concentrate. We feel it is important to do pre-
4 treatment, to remove the contaminants so that you end
5 up producing a sale of product. If you are going to
6 be removing the salts for other saleable materials out
7 of the wastewaters again, there's a deference problem.
8 When you do not have a loading into the discharges
9 it's going to create a very high energy demand to
10 operate these technologies. We don't feel that that's
11 appropriate to be adding onto the burden of energy
12 needs in this Commonwealth. PA Chamber has said that
13 it would be over 87,000,000 kilowatt hours per
14 facility per a million gallons per day, per facility,
15 and that it would require over 260,000,000 cubic feet
16 of natural gas annually to be able to remove the
17 contaminants to meet the required discharge. That
18 would lead to increased emissions. PA Chamber again
19 estimates that there would be nearly 60,000 tons of
20 carbon dioxide emissions added on to existing
21 emissions in Pennsylvania in order to meet these
22 requirements.

23 There is the economic impact. We've been
24 spending almost two years looking at the various
25 technologies to determine what it would cost to meet

1 these standards. We are seeing anywhere between 20
2 and \$64,000,000 per facility. Add on to that the
3 operational costs leading to 12 to 18 cents per gallon
4 under high-volume conditions where you have the
5 economy as a scale. That's 150 to 300 percent
6 increase in disposal costs. Again, as I said before,
7 with no real significant benefits to the Commonwealth.

8 DEP has publicly stated that they
9 estimate the cost of disposal to be between 20 and 25
10 cents per gallon. This is a 416 percent increase in
11 disposal costs. There's already been more than 15
12 industries who have announced that they will leave
13 Pennsylvania if this strategy is implemented.

14 The time frame is also unrealistic.
15 There is no way you can implement this technology by
16 January of 2011. As I said before, it took us four
17 years to develop the crystallizer and we have talked
18 to numerous other industries who have said that it
19 will take a minimum of 30 months to do all of the
20 preliminary work, the designing, get all the analysis,
21 getting the permitting through the system.

22 Particularly now that your permit also has to include
23 emissions. To do the ordering of the equipment, a lot
24 of these things require specialized metals such as
25 minel (phonetic) and titanium and then to be able to

1 construct it and go through the testing phases. We
2 believe that the proposed was premature. We do not
3 feel that the Department, we believe that the
4 Department rushed into this and they failed to present
5 enough facts to justify a state-wide standard of all
6 the discharges.

7 They made our --- the EPA for example,
8 said that the secondary drinking water regulations,
9 that these regulations are not federally enforceable
10 and are not intended as guidelines for the State.
11 They are intended guidelines, but they're not
12 necessarily requiring a state-wide requirement on a
13 discharge to meet the secondary drinking water
14 standards.

15 Thank you again for this opportunity to
16 present our comments. We feel that there a number of
17 alternatives to dealing with this problem such as the
18 use of wet testing, or use of water quality based
19 criteria within the streams specific to that
20 watershed. There is already industries who are
21 promoting to help and putting in networks to get a
22 better understanding of the needs of the watersheds in
23 order to be able to preserve, not only to some
24 assimilative capacity, but also to be able to protect
25 uses in stream. We've always had a good working

1 relationship with DEP for over 24 years and we will
2 continue to work towards a solution with them. Thank
3 you.

4 CHAIR:

5 Thank you. And now I'd like to call Ken
6 Yingling.

7 MR. YINGLING:

8 My name is Ken Yingling, One Energy
9 Place, Latrobe, PA. My affiliation is AMFIRE Mining
10 Company and Alpha Natural Resources.

11 Good evening. My name is Ken Yingling
12 and I am Environmental Manager with Alpha Natural
13 Resources. Our PA Services and Amfire Affiliates
14 operate 21 surface and underground mines and four coal
15 preparation facilities in Western PA. As the second
16 largest coal producer in the Commonwealth with just
17 under 2,000 employees we are committed to operating
18 safely, efficiently, and responsibly. I am speaking
19 tonight in opposition to the proposed rulemaking to
20 amend 25 PA Code, Chapter 95 to add new, end-of-pipe
21 effluent standards for new discharges containing high
22 concentrations of TDS, sulfates and chlorides and I do
23 so primarily because the proposed rulemaking is
24 premature and is neither based on sound science nor
25 economic realities.

1 We appreciate the opportunity to present comments
2 and hope the Department considers the full impact of
3 this regulation on Pennsylvania.

4 First, it is clear that the proposed
5 rulemaking is by DEP's own admission, predicated on
6 very limited sampling in the Mon River between October
7 and December of 2008 when river levels were at
8 historic lows and there were high dissolved solids
9 concentrations entering the Commonwealth from the
10 south. Again, by DEP's own admission, TDS levels
11 dropped after the prolonged dry weather moderated and
12 rainfall conditions returned to normal. On that
13 basis, the DEP is attempting to make a giant
14 regulatory leap premised on the temporary condition in
15 the main stem of the Mon River, it is now proposing a
16 state-wide effort effluent limit on TDS in all
17 watersheds. This approach is clearly unjustified.
18 Further, the DEP asserts in the November 14th PA
19 Bulletin that studies performed by government agencies
20 document the adverse effects of discharges of TDS on
21 the aquatic communities of certain receiving streams.
22 The regulated community has asked numerous times for
23 copies of those studies. To date the DEP has not
24 provided any of that data that could even allow an
25 independent analysis much less arrive at a reasoned

1 conclusion that a state-wide standard is appropriate.
2 In short, the DEP is basing this rulemaking on data
3 that is either non-representative of state-wide
4 conditions or has not seen the light of public review.
5 For these reasons the rulemaking is premature and is
6 not based on sound science.

7 Second, the DEP makes contradictory
8 statements in the PA Bulletin by initially stating
9 that, quote, currently no treatment exists for TDS,
10 sulfates, and chlorides, other than dilution. Then
11 goes on to state the treatment costs could be in the
12 order of 25 cents per gallon. While we all appreciate
13 that the DEP has a public duty and cannot completely
14 project the economic consequences of this action, the
15 proposed rule will adversely impact many sectors of
16 the economy, especially those with high volume
17 discharges. Consequent to an analysis of a majority
18 portion of the coal industry, and as we have already
19 indicated to DEP through the Advisory Council process,
20 the only viable treatment technology available today
21 is Reverse Osmosis followed by Evaporation and
22 Crystallization. The minimum estimated costs of
23 treatment to meet the limits imposed by this rule,
24 based on real data, will result in capital and
25 operating costs of over \$49,000 per gallon per minute.

1 Industry wide it is estimated that treatment costs
2 alone will require \$1.3 billion in capital
3 expenditures and operating costs are estimated at \$133
4 million annually. This is a far cry from the
5 estimated 25 cents per gallon suggested by the agency.
6 This does not even include the solid waste stream that
7 will result from this treatment process. The solid
8 waste has to be land-filled somewhere and the DEP's
9 cost estimate does not address this at all. Neither
10 has it considered the implications of the enormous
11 electricity consumption that would be needed to run
12 these large treatment facilities. Clearly, the DEP
13 has not completely investigated the cost-benefits of
14 this rule and we all would be well served to
15 understand the impacts of this action before it is
16 imposed in a little over one year from now.

17 Which brings me to the third point, and
18 that is the timeframe for implementation is
19 unreasonable. If the rule is imposed as written we
20 estimate that it would take two-and-a-half to three
21 years to conduct feasibility studies, design a
22 treatment plant and permit such a facility. Given the
23 DEP's recent budget losses and reduction in ranks, it
24 is simply unreasonable to impose a compliance deadline
25 of January, 2011, when the Department is ill-

1 positioned to handle the additional permitting load
2 required to meet these requirements.

3 Finally, from the standpoint of this
4 rule's impact on new or expanded public and private
5 sector discharges, it is clear that the DEP has not
6 fully evaluated the widespread nature of this action.
7 To be sure this rule will have significant impact
8 state-wide, as it will impose additional water
9 treatment costs on any new dischargers and all
10 existing facilities that add to or increase their
11 discharges consequent to economic expansion,
12 regardless of what activity the discharger is engaged
13 in. Public water treatment plants and publicly owned
14 sewage treatment facilities will be impacted by this
15 rule and the cost of meeting the proposed rule will
16 likely be borne by the rate payer. Privately held
17 sewage treatment sites serving residential
18 developments, commercial facilities, industrial and
19 mining companies that wish to expand and add new
20 business will also be affected by the rule, wherever
21 they might be located in the state. This approach
22 ignores local conditions and stifles economic
23 development throughout the Commonwealth when we need
24 it most.

25 In summary, this rule is premature, it is

1 not grounded in thorough analysis and will result in
2 restraints on businesses and additional costs to
3 taxpayers that collectively will work against the
4 rebound in Pennsylvania's economy. Furthermore, it is
5 our hope the Department sees the wide range of impacts
6 to all the industries that will be affected by this
7 rule. And with this information, we urge the
8 Department to halt the pursuit of any TDS limits.

9 Again, thank you for the opportunity to
10 comment.

11 CHAIR:

12 Thank you, Mr. Yingling. Next witness is
13 Josie Gasky.

14 MS. GASKY:

15 Josie Gasky of Pennsylvania Coal
16 Association, 212 North 4th Street, Suite 101,
17 Harrisburg, 17111.

18 Good evening. My name is Josie Gasky and
19 I'm the Director, Regulatory and Technical Affairs for
20 the Pennsylvania Coal Association. PCA is the
21 principal trade organization representing bituminous
22 coal operators, underground and surface, large and
23 small, as well as other associated companies whose
24 businesses rely on a thriving coal economy. PCA
25 member companies produce over 85 percent of the

1 bituminous coal annually mined in Pennsylvania. We
2 are the fourth leading coal producing state, mining 68
3 million tons last year. As important the Pennsylvania
4 mining industry is a major source of employment and
5 tax revenue. Last year, it created 49,100 direct and
6 indirect jobs with a total payroll in excess of \$2.2
7 billion. Taxes on these wages netted over \$700
8 million to the coffers of federal, state, and local
9 governments.

10 PCA appreciates the opportunity to
11 comment and opposes this proposed rulemaking. We
12 bring to your attention the PA DEP's Water Resources
13 Advisory Committee made up of environmental groups,
14 scientists, industry representatives, and academics
15 considered this proposed rulemaking on July 15th and
16 recommended to DEP that it not proceed with the rule
17 as proposed. The Committee recommended that DEP work
18 in conjunction with WRAC to form a state-wide
19 stakeholders group to analyze the issues and develop
20 appropriate solutions, in lieu of proceeding with the
21 proposed rulemaking.

22 PCA engaged CME Engineering to perform an
23 impact analysis of the proposed strategy for high TDS
24 wastewater discharges on the bituminous coal industry
25 and PCA's comments are supported by this analysis.

1 Data received for this analysis accounts for 85
2 percent of the 68 million tons of coal produced
3 annually in Pennsylvania and potential flows to be
4 treated greater than 26,000 gallons per minute.

5 At PCA's request DEP provided their
6 supporting data and information used in the
7 development of the proposed rulemaking. The
8 rulemaking is based on data collected from the Mon
9 River during a two-and-a-half month period in the fall
10 of 2008, during an exceptionally low-flow period. The
11 data collection ceased at the end of December, 2008
12 when tests indicated TDS and sulfate levels were no
13 longer elevated. Based on an analysis of this
14 response PCA believes there's inadequate scientific
15 justification for the proposed regulation changes and
16 that DEP has not conducted the appropriate studies to
17 determine there is a real sustained threat and not
18 just a seasonal flow event from TDS concentrations,
19 the extent of any threat, or the correct parameters
20 and concentrations to control TDS.

21 PCA's analysis of this data and
22 information indicates numerous issues with DEP's
23 response. PCA questioned which streams and waterways
24 were at risk for sustained elevated concentrations of
25 TDS, sulfates and chlorides. DEP indicated there were

1 36 active water quality networks during the above
2 timeframe period. Twenty-eight (28) of these were
3 considered at risk, and eight were not. The eight
4 reference sites Chapter 93 classifications identify
5 these waters as Exceptional Value, the best water
6 quality streams in Pennsylvania. DEP indicated the at
7 risk sites were chosen because one or more of the
8 chlorides, sulfates, or TDS values were magnitudes
9 higher than the values of the eight reference sites.

10 PCA evaluated the mean chloride, sulfates
11 and TDS concentrations data provided for the 28 at
12 risk sites. Of the 28 only six of those had TDS and/or
13 sulfate concentrations that exceeded the proposed
14 limits. In addition, sampling for the 36 sites was
15 not conducted on a regular basis and none of the water
16 quality sampling data provided by DEP showed a
17 chloride concentration greater than 250 milligrams per
18 liter.

19 The Preamble lists the Beaver, Shenango,
20 Neshannock, Moshannon and the West Branch of the
21 Susquehanna Rivers showing upward trends, but not an
22 exceedance of the proposed limits. Data supplied
23 revealed TDS and sulfate levels for these waterways
24 significantly below the proposed TDS and sulfate
25 limits. No data was provided for the Neshannock and

1 Moshannon rivers.

2 PCA looked back 10 years at EPA STORET
3 data for the South Pittsburgh monitoring station on
4 the Monongahela River. At no times did the sulfates
5 or chloride levels rise above 180 milligrams per liter
6 for the past 10 years. We examined Consumer
7 Confidence Reports for the 2008 for the public water
8 systems utilizing the Mon River because every water
9 system in the Commonwealth is required to submit a
10 Consumer Confidence Report to its customers. There
11 was no mention of TDS, sulfates or chlorides
12 violations or problems in these reports.

13 WVU's Water Research Institute has
14 collected and analyzed data from the Mon River over a
15 period of years. They have monitored the Mon River at
16 Point Marion during the period of 1999 to 2006.
17 During this time frame the Point Marion monitoring
18 station at Mile Point 90.8 showed declining trends in
19 chlorides, sulfates, and TDS concentrations.

20 We requested all information and support
21 data that DEP used in setting the proposed limits.
22 They provided no economic analysis as part of its
23 response and has not acknowledged how much historical
24 data it reviewed and considered prior to proposing
25 these revisions. However, Section 5(a)5 of The Clean

1 Streams Law clearly requires DEP's determine the
2 immediate and long-range economic impact on the
3 Commonwealth and its citizens when setting new
4 standards.

5 We note that EPA has established National
6 Primary Drinking Water Regulations that set mandatory
7 water quality standards for drinking water
8 contaminants. These standards establish primary and
9 secondary MCLs for substances in drinking water at the
10 point of use, not intake. Primary MCLs are
11 established based on the hazard potential to human
12 health and Secondary MCLs are established as non-
13 enforceable guidelines highlighting contaminants that
14 may cause aesthetic effects such as taste, odor, or
15 color in drinking water. EPA recommends secondary
16 standards to water systems, but does not require
17 systems to comply. EPA has not established primary
18 MCLs for TDS, sulfates, and chlorides choosing instead
19 to establish Secondary MCLs at the levels of 500, 250
20 sulfates, and 250 chlorides, 500 for TDS.

21 If the proposed rulemaking is approved,
22 it will have a devastating impact on the bituminous
23 coal mining industry due to the limited treatment
24 technologies available to reduce TDS and the extremely
25 high capital and O&M costs associated with these

1 technologies. PCA evaluated all the treatment options
2 to reduce wastewater TDS concentrations and presented
3 this information to the WRAC TDS Stakeholders group on
4 September 22nd.

5 We looked at managed discharge, managed
6 treatment, electrodialysis, precipitation, liquid-to-
7 liquid extraction, reverse osmosis and evaporation
8 crystallization.

9 Currently, the only technology possibly
10 able to reduce TDS to the limits in the proposed
11 rulemaking for the bituminous coal mining industry is
12 a system of reverse osmosis combined with evaporation
13 and crystallization and pretreatment. Even this
14 approach is highly suspect as this technology has not
15 been operationally tested for use with bituminous
16 mining wastewaters. There are many problems with the
17 use of this technology. The RO requires a rigorous
18 pretreatment process to remove scaling agents and
19 biological activity which promotes fouling. These RO
20 units are custom built to the unique chemistry of the
21 water and are not turnkey system. Due to the
22 variation in water quality a feasibility study would
23 need to be conducted for each source to be treated.
24 Certain applications require corrosion-resistant
25 specialty metals with high cost and long lead times

1 for delivery.

2 An RO system combined with evaporation
3 and crystallization and pretreatment as I said, is the
4 only technology possibly able to get to the limits.
5 Treating the average volume of water reported in the
6 CME Engineering analysis, greater than 26,000 gallons
7 per minute is estimated to cost \$1.325 billion in
8 capital expenditures, O&M costs of \$133 million per
9 year and perpetual treatment bonding required by DEP
10 for the system of \$134 million. These costs do not
11 include costs associated with land acquisitions, site
12 development, utility expenses, etc. necessary to
13 construct the plants. The lead time required to
14 design, construct and implement a TDS treatment system
15 is estimated at two-and-a-half to three years.
16 According to the proposed rulemaking DEP's compliance
17 date is January 1, 2011. Nor does it include
18 treatment costs at future sites. Furthermore, the
19 energy costs are unknown, particularly with the rate
20 caps coming off and giving the energy demands of the
21 treatment technologies.

22 Let me give you more specific example of
23 a coal company with a 3,000 gallon per minute combined
24 flow, an annual coal production of 1 million tons. To
25 meet these proposed limits it would need to construct

1 6 treatment systems costing \$138 million and \$10.8
2 million per year to operate. These expenditures would
3 increase the cost of a ton of coal produced by \$17.70
4 not including interest or inflation. If the company
5 were required to perpetually treat their discharges
6 the bond required would be \$806 million.

7 PCA believes the timeframe and the
8 proposed rulemaking is unrealistic, unachievable and
9 the deadline is artificial. Even assuming there's a
10 need for controls for such huge expenditures there is
11 insufficient time to complete the feasibility, design,
12 and permitting stages, acquire the equipment,
13 construct the treatment facilities and test.

14 There are other associated environmental
15 concerns to this technology.

16 CHAIR:

17 One minute, MS. Gasky.

18 MS. GASKY:

19 Okay. PCA believes the proposed Chapter
20 95 rulemaking is not supported by data and lacks
21 comprehensive scientific and economic analysis
22 particularly in light of the enormous expenditures.
23 PCA believes DEP should withdraw the proposed
24 regulation and undertake the necessary studies to
25 determine if there truly is a TDS problem, the extent,

1 the cost benefit analysis including an evaluation of
2 the additional environmental carbon footprints.

3 Thank you for the opportunity to be able
4 to speak.

5 CHAIR:

6 Thank you very much. Next witness is
7 Barry Tuscano.

8 MR. TUSCANO:

9 I'm Barry Tuscano. I'm from Bolivar and
10 I've spent my life trying to restore our water quality
11 in the state and I highly support the regulations as
12 they are. I have some technical concerns which I've
13 heard. I'll just give you one, but my main concern is
14 that the water in this state, the clean water that we
15 have is worth so much more than the fleeting riches
16 that the gas and oil and coal industries could bring
17 to us. And it is so much more expensive to treat the
18 water after it's been spoiled and it's very important
19 that we get out in front. The quantities of water
20 that they're talking about, producing with Marcellus
21 drilling is mind-boggling. Dilution is not going to
22 be able to treat the quantities of water that we're
23 talking about. I highly recommend that DEP institute
24 the regulations that they propose.

25 CHAIR:

1 Thank you, sir. Next is Chuck Winters.

2 MR. WINTERS:

3 Hello. I'm Chuck Winters. I'm
4 representing PATU, which is Pennsylvania Trout and we
5 have a few comments we'd like to make. A little bit
6 about PA Trout, Pennsylvania Council of Trout
7 Unlimited is the nation's leading conservation
8 organization dedicated to conserving, protecting and
9 restoring North America coldwater fisheries and their
10 watershed. We have over 12,000 members in
11 Pennsylvania working at the grassroots level and we
12 wish to present these comments on the proposed changes
13 to the 25PA.Code, Chapter 95.

14 The rapidly expanding development of the
15 Marcellus Shale natural gas resources in Pennsylvania
16 has the real potential to impair the waters and harm
17 the environment of the Commonwealth. PATU is
18 supportive of regulations and policies which will
19 better regulate wastewater and be protective of water
20 quality and their designated uses as codified in 25
21 PA.Code, Chapter 93 and Chapter 95.

22 Effluent Standards in Chapter 93. We
23 would like the DEP to protect the Commonwealth's water
24 resources. PATU supports the need for the Department
25 to promptly update and utilize its current authority

1 to regulate discharges using existing applicable
2 Chapter 93 standards. Water quality-based effluent
3 standards should be set based on protective uses and
4 annual, not variable monthly, Q7-10 receiving stream
5 flows.

6 Pennsylvania DEP must ensure the water
7 quality of any receiving stream is maintained and that
8 any effluent is fully and adequately characterized and
9 that effluent limitations are properly calculated.
10 Effluent limitations must fully protect all designated
11 uses including aquatic life, recreation and industrial
12 uses. Discharge limits must be based on pollutant
13 loadings that will not impair protected uses. In
14 cases where pollutants of concern may not have water
15 quality protective criteria and standards codified in
16 Chapter 93, the Department should use the best
17 available science to evaluate and set thresholds for
18 contaminants of concern.

19 Such pollutants of concern may include
20 bromide, arsenic, benzene, strontium and natural
21 occurring radiological material including radium 226,
22 228, gross alpha and gross beta. Use of whole
23 effluent toxicity testing, WETT, to characterize water
24 quality impacts is also worthy of consideration
25 provided that sufficient guidance and methodologies

1 are developed to make the tests scientific relevant to
2 the stream's ecology and pollutants of concern.

3 PA DEP should also incorporate the EPA
4 criteria for chloride into Chapter 93 at a minimum.
5 These criteria will probably be adequately protected
6 when the chloride is associated with sodium but not
7 potassium, calcium and magnesium. Because freshwater
8 animals have a narrow range of acute susceptibilities
9 to chloride, excursions above this criteria might
10 affect a substantial number of species; therefore,
11 Chapter 93 should be revised to meet the parameters
12 and replace the state criteria.

13 Chapter 95 TDS standards. DEP's proposal
14 of 500 milligrams per liter for total dissolved solids
15 and 250 milligrams per liter each for sulfates and
16 chlorides will go a long way towards ensuring that
17 federal drinking water standards are met across the
18 state for TDS. It is critical that any TDS wastewater
19 effluent standard be protective of both drinking water
20 uses and aquatic life. DEP should not weaken their
21 proposed discharged standards for TDS. Regulations at
22 the point of discharge will be helpful in ensuring
23 protection of aquatic life. We also believe that the
24 proposed regulations are a welcome regulatory means to
25 prevent impairment and ensure that a TMDL process is

1 not required.

2 In order to ensure protection of both
3 drinking water and aquatic life, the TDS effluent
4 standard should be stated at a daily maximum, not a
5 monthly average. The 2,000 milligrams per liter
6 concentrate threshold should be stated as a daily
7 maximum. All large TDS sources should be covered by
8 this standard. New sources and new discharges at
9 existing wastewater facilities should be met to meet
10 the TDS standards immediately. Existing sources of
11 large TDS discharges should be eventually covered
12 through NPDES permit renewal process. How TDS will be
13 measured and reported by discharges should also be
14 clarified by DEP.

15 Effective date. We need these
16 regulations to be placed as soon as possible to
17 protect both aquatic life and drinking water
18 resources. DEP should stop issuing drilling permits
19 which increases existing wastewater loads in
20 Pennsylvania's streams until both Chapter 93 and 95
21 revisions are in place.

22 Monitoring. DEP should take measures to
23 ensure that wastewater effluent is adequately
24 characterized and properly sampled to match those of
25 its effluent sampling requirements. A minimum of at

1 least a dozen prescreening events would ensure
2 sampling average that would provide realistic
3 assessment of the composition of any effluent.
4 Adequate staff and funding should be in place to
5 ensure that wastewater effluent is meeting Chapter 95
6 and Chapter 93 regulations.

7 On wastewater reuse and contamination.
8 DEP currently needs to ensure that all aspects of
9 wastewater generation from the Marcellus Shale is
10 regulated. DEP has been negligent in its oversight to
11 conduct a thorough and extensive environmental impact
12 study prior to its issuing Marcellus drilling permits.
13 Policies and procedures should have been filed with
14 the EPA to show that groundwater and drinking water is
15 protected. Now that gas companies are recycling
16 wastewater and injecting contaminated water
17 underground, the general public needs to see that
18 adequate research and proper planning are in place to
19 ensure that our aquifers are protected. DEP must
20 implement policies consistent with the EPA for
21 underground injection of contaminated water. We also
22 feel that the current set of standards and policies
23 are not adequate to regulate the groundwater and
24 surface water impacts and the contamination that is
25 occurring from all aspects of drilling operation.

1 Continued permitting of well pads, production wells
2 and pipelines, patricianly in exceptional value and
3 high quality cold water streams, watersheds without
4 effective regulations that require monitoring wells,
5 design standards and surface and groundwater
6 protection plans is not fulfilling the Commonwealth's
7 stewardship responsibilities as required by the
8 Constitution.

9 Comments and public hearings of redraft.
10 PATU also requests that if and when the proposed rule
11 is redrafted, the Department should afford the public
12 another opportunity for additional public comment
13 prior to adoption. Any redraft must effectively
14 address the protection of water resources from the
15 pollutants found in gas development, wastewaters in a
16 manner which focuses first and foremost on receiving
17 stream protection and adequate controls wastewater
18 pollutants of concern. Thank you.

19 CHAIR:

20 The next testifier registered for this
21 evening is Dennis Beck.

22 MR. BECK:

23 Sir, I'm going to defer oral presentation
24 this evening. Is that okay?

25 CHAIR:

1 That's fine. If you want to. Is there
2 anyone else present tonight who would like to provide
3 oral testimony? Okay. With no other witnesses
4 present, on behalf of the EQB, I hereby adjourn this
5 meeting at 5:49 p.m. Thank you very much for your
6 participation, everyone.

7
8 * * * * *

9 HEARING CONCLUDED AT 5:49 P.M.

10 * * * * *

11
12 CERTIFICATE

13 I hereby certify that the foregoing
14 proceedings, hearing held before Chair Adams, was
15 reported by me on 12/15/2009 and that I Lori A. Behe
16 read this transcript and that I attest that this
17 transcript is a true and accurate record of the
18 proceeding.

19
20 
21 Court Reporter