

**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

In the Matter of:)	
)	
Penneco Environmental Solutions, LLC)	
)	
)	
Borough of Plum, PA,)	
)	
Petitioner)	Permit Appeal: UIC 18-02
)	
UIC Permit No. PAS2D701BALL)	
)	
)	

**REGION III'S STATEMENT RESPONDING TO QUESTIONS AND PROVIDING
CLARIFICATION FROM ORAL ARGUMENT**

The United States Environmental Protection Agency (EPA) Region III (Region), respectfully submits the below response and clarification to specific questions and requests made by the Environmental Appeals Board (EAB) during the July 26, 2018 Oral Arguments in this matter:

1. The EAB asked the Region to provide a specific page reference within Tab B to the Region's Response, which includes Penneco's Permit Application and Penneco's Response to Notice of Deficiency, concerning references to location of fault systems. The Region would direct the EAB to p.12-15 of Tab B to the Region's Response as well as the subsequent geological information contained in Tab B.

2. The EAB asked the Region to provide a specific citation in support of the statement that of the approximately 30,000 Class II wells in the United States, only a few have been documented to have triggered induced earthquakes and the Region is unaware of any such induced earthquakes that have resulted to contamination of underground sources of drinking water (“USDW”). There is no specific document that concludes that no USDW has been contaminated by injection fluid due to induced seismicity. Rather, the Region has reviewed significant information concerning UICs and induced seismicity and has not identified any documentation that indicates such contamination. Among the documents reviewed, which were identified in the Region’s Response, one pertinent document is “Minimizing and Managing Potential Impacts of Injection-Induced Seismicity from Class II Disposal Wells: A Practical Approach,” EPA UIC National Technical Workgroup, February 5, 2015, Region’s Response, Tab M, Pages 7-8 and 10-11. Therein, the UIC National Technical Workgroup report indicates that EPA is unaware of any incident of Class II UIC induced seismicity caused USDW contamination. The UIC National Technical Workgroup is comprised of UIC experts from all 10 EPA regions as well as rotating state participants. In addition, nowhere in the information and documents reviewed by the Region did the Region identify any indication of USDW contamination due to induced seismicity from a Class II UIC.

3. During oral arguments, the EAB asked counsel to describe the injection pressure and the bottom hole injection pressure, why the numbers are different, what each represents and how they are determined. To better and more accurately respond to that question, and supplement counsel’s explanation, the Region states as follows: The bottom hole pressure (BHP) is always higher than the injection pressure because the BHP is the injection pressure as measured at the surface plus the pressure exerted by weight of the column of injected fluid. The

BHP calculation can be expressed as $BHP = (.433 \times SG \times D) + MIP$ where SG is specific gravity, D is depth, MIP is surface pressure and .433 is a constant that represents the psi per foot of water. For example, if the injection pressure is 1,000 psi in a 1,500 feet deep well injecting fresh water, the bottom hole pressure is 1,650 psi (1,000 + 650) due to the weight of a 1500-foot column of injected fluid. Fresh water exerts .433 psi per foot of depth. Therefore, $.433 \times 1,500$ feet = 650 psi. For the Penneco permit the BHP is a calculated number and is based on conditions specified in the permit, namely the permitted maximum specific gravity of the injectate and the maximum injection pressure, which are the substantive operational limits of the permitted activity.

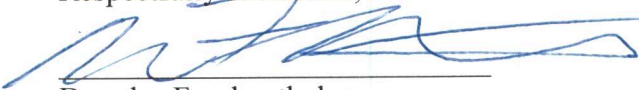
4. In reexamining the BHP for the Penneco permit to better respond to the EAB's question, the Region identified a calculation error in the BHP contained in the Penneco permit. The BHP in the Penneco permit should be 2,296 psi, not 2,332 psi. The injection pressure and specific gravity of the injectate, as described in the Penneco permit Part III.B.4 (Region's Response, Tab I, p. 16) are accurate. The current BHP in the Penneco permit was incorrectly calculated, which resulted in a BHP 40 psi higher than it should be. The correct bottom hole pressure for the Penneco permit is calculated based upon maximum allowable surface injection pressure of 1,421 psi (the MIP), the maximum allowable fluid density of 1.11 (the SG), and the distance to the top of the injection zone of 1,822 feet (the D). The $1.11 \times .433$ portion of the calculation accounts for the higher density (weight) of brine when compared with water. The calculation for Penneco BHP is $1,421 + (.433 \times 1.11 \times 1,822) = 2,296$. The change in the BHP does not alter the operating conditions allowed by the Penneco permit, since the injection pressure and maximum specific gravity of the injectate have not changed.

5. The Region intends to modify the Penneco permit pursuant to 40 C.F.R. §

144.41(a) to include the corrected BHP calculation.

6. The Region respectfully submits this supplemental information in response to the EAB's questions during oral argument and to clarify the BHP calculation and to inform the EAB that the Region intends to modify the Penneco permit to include the corrected BHP.

Respectfully submitted,



Douglas Frankenthaler
Assistant Regional Counsel
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, Pennsylvania, 19103
Phone: (215) 814-2472
Fax: (215) 814-2603
Email: frankenthaler.douglas@epa.gov

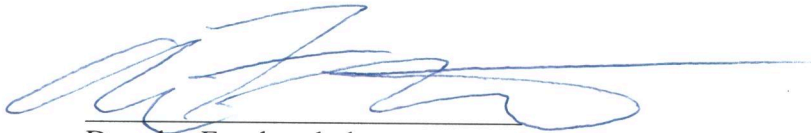
CERTIFICATE OF SERVICE

I hereby certify that I served a copy of the foregoing Statement on the date specified below, by electronic mail and U.S. Mail:

Dayne F. Dice, Esq.
Bruce E. Dice & Associates, P.C.
787 Pine Valley Drive
Suite E
Pittsburgh, PA 15239
Counsel for Borough of Plum

Jean M. Mosites, Esq.
Varun Shekhar, Esq.
Babst, Calland, Clements & Zomnir, P.C.
603 Stanwix Street, Sixth Floor
Pittsburgh, PA 15222
Counsel for Penneco Environmental Solutions, LLC

I also certify that I filed the original electronically with the Environmental Appeals Board.



Douglas Frankenthaler
Assistant Regional Counsel
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, Pennsylvania, 19103
Phone: (215) 814-2472
Fax: (215) 814-2603
Email: frankenthaler.douglas@epa.gov

Date: 6/23/18

