RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-163. Reference Exhibit BV-E1, Table W-10. Please provide a detailed breakdown for expense line items 5 and 8.

Response:

A detailed breakdown of line item 5, Purification and Treatment - Power and Pumping - Other operation and maintenance expenses, is presented on PWD Exhibit-6: Black & Veatch Corporation Cost of Service Work Papers, Womallo-14, Line 21 (Treated Water Power & Pumping - Baxter Treatment Plant - L.S. – All Other Costs) and Line 24 (Treated Water Power & Pumping - All Other Pumping - All Other Costs).

A detailed breakdown for line item 8, Purification and Treatment - Treatment - Other expenses, is presented on PWD Exhibit-6: Black & Veatch Corporation Cost of Service Work Papers, Womallo-14, Line 12 (Treatment - Purification - Baxter Treatment Plant - All Other Costs) and Line 17 (Treatment - Purification - All Other Treatment Plants - All Other Costs).

Response Provided By: Ann Bui, Prabha Kumar and David Jagt, Black & Veatch

RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-164. Reference Exhibit BV-E1, Table W-11 and the response to PA-EXE-86. If the 55 MG/yr identified in PA-EXE-86 were to be included in Table W-11, would the correct units on Table W-11 be 55,000 Mcf? If no, please identify the correct units that would be identified on Table W-11.

Response:

Assuming that this interrogatory refers to the Total Test Year Water Use for Private Fire Protection (Line 6, Column 2) presented in Table W-11 of Exhibit BV-E1, the proposed 55,000 Mcf is not the correct units. The current estimate of the Total Test Year Water Use for Private Fire Protection reflects the correct units which is consistent the methodology presented in the AWWA Manual of Water Supply Practices – M1, Sixth Edition, Principles of Water Rates, Fees, and Charges. Please note the following references to the AWWA's M1 Manual:

Page 77 – "Fire protection service has characteristics that are markedly different from other types of water service. The service provided is principally of a standby nature—that is, readiness to deliver relatively large quantities of water for short periods of time at any of a large number of points in the water distribution system."

Page 78 – "The total annual volume of water used for fire service is usually negligible, at least in relation to that of other classes; however, peak requirements for fire service can be quite significant. The Insurance Services Office (ISO) periodically defines desired rates of flow for fire service, which is a good source of maximum-capacity requirements for fire service. This data must be applied judiciously to achieve practical cost allocations."

Page 79 – "The Units of Service for Fire Protection presented in Line 4 of Table III.2-1, Units of service—Base-extra capacity method (test year), do not include units of service for the Base Units of Service (Annual Use or Average Rate). Only Maximum Day and Maximum Hour Units of Service are presented for Fire Protection Service."

Note that the Total Test Year Water Use units presented in Table W-11 of Exhibit BV-E1 reflects the estimated billed volume for the metered Private Fire accounts in recognition of the volume charge revenue received from these accounts. Increasing the Total Test Year Water Use units to reflect an estimate of unmetered annual water use for fire protection would not be consistent with the methodology reflected in AWWA's M1 Manual.

Response Provided By: Ann Bui, Prabha Kumar and David Jagt, Black & Veatch

RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-166. What is the population of PWD's water service territory?

Response:

PWD provides drinking water retail service to approximately 1.6 million people within the City limits. PWD also provides drinking water to one wholesale customer outside the City limits.

Response Provided By: Ann Bui, Prabha Kumar and David Jagt, Black & Veatch

RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-168. Reference the response to PA-EXE-91. Please explain why these customers are hand billed and what it means to be hand billed.

Response:

In Table W-17, the Hand Billed customer line is made up of customers coded "H" in the billing system. The "H" type accounts supplied in response to PA-EXE-91 are for surcharge and sewer credit accounts, reference Regulation Section 303.4 and 303.5. These accounts can also be referred to as "special handling" accounts.

Response Provided By: Michelle Bethel and Mark Havery, WRB

RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-169. Reference Exhibit BV-E1, Table WW-8.

a. Please explain the type of service provided to the Groundwater customer type and why there are no meter or billing units for these customers; and

b. Please explain what the 2,660 Mcf test year volume for fire meters represents.

Response:

a. The service provided to the Groundwater customers is for the disposal of the groundwater that penetrates their facilities or structures. The city's sewer system is an acceptable means to receive groundwater but there is a cost associated with such groundwater discharges to the sewer system. As per Water Department Regulations, entities which discharge groundwater into the city's sewer system shall be charged in accordance with the fees outlined in Regulation Section 307.1. In situations where it is not feasible to install a meter or measuring device, the Water Department may designate some other method of measuring or estimating the quantity of groundwater discharged to the sewer system.

b. The 2,660 Mcf test year volume for fire meters in Table WW-8 of Exhibit BV-E1 reflects the annual billed volume for metered private fire accounts which are assessed sewer volume charges. Based on discussions with PWD staff, these accounts are for metered private fire protection accounts which do not have closed loop fire suppression systems and have the potential to return volume to the wastewater collection system.

Response Provided By: (a) Debra McCarty, PWD and (b) Ann Bui, Prabha Kumar and David Jagt, Black & Veatch

RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-170. Reference Exhibit BV-E1, Table 11, Part 1. Please explain in detail what the O&M Storm Costs ($53,056,200); Depreciation Expense ($17,495,000); and return ($45,222,000) represent and how they were calculated. Provide supporting calculations.

Response:

This response assumes that "Exhibit BV-E1, Table 11, Part 1" refers to Exhibit BV-E1, Table WW-11.

The O&M Storm Costs ($53,056,200) represents the portion of the operations and maintenance costs for the wastewater collection system allocated to stormwater. The O&M Storm Costs are derived as sum of 60% of the Retail Sewer Maintenance O&M costs and 100% of the Inlet Cleaning costs as presented in PWD Exhibit 6: Cost of Service Work Papers, SCOS15_2017, RETCOS-5 (PDF Page # 568). Please refer to Q57 beginning on Page 78 of PWD Statement-9A: Direct Testimony of Black & Veatch for background on the allocation of wastewater service Test Year Operation and Maintenance expense to wastewater cost components, specifically Retail Operation and Maintenance Costs to Cost Components Wastewater Collection System – Sewers and Wastewater Collection System – Inlet Cleaning.

The Depreciation Expense ($17,495,000) represents the portion of wastewater collection system depreciation expense allocated to stormwater. Please refer to PWD Exhibit 6: Cost of Service Work Papers, SCOS15_2017, RETCOS-8 (PDF Page # 571) for the calculation of wastewater collection system depreciation expense allocated to stormwater. Additionally, please refer to PWD Exhibit 6: Cost of Service Work Papers, SCOS15_2017, RETCOS-5 (PDF Page # 568) for the calculation of wastewater retail collection system test year plant investment for stormwater.

The Return ($45,222,000) represents the portion of wastewater collection system return on investment allocated to stormwater. Please refer to PWD Exhibit 6: Cost of Service Work Papers, SCOS15_2017, RETCOS-8 (PDF Page # 571) for the calculation of wastewater collection system return on investment for stormwater. Additionally, please refer to PWD Exhibit 6: Cost of Service Work Papers, SCOS15_2017, RETCOS-5 (PDF Page # 568) for the calculation of wastewater retail collection system test year plant investment for stormwater.

Please refer to Q56 beginning on Page 72 of PWD Statement-9A: Direct Testimony of Black & Veatch for background on the allocation of Test Year plant investment to wastewater cost components, specifically the allocation of Retail Plant Investment to Wastewater Collection System – Sewers.

The work papers referenced in this response are also included in the previously provided wastewater cost of service model SCOS15_2017_V45_A, in response to PA-EXE-74 and PA-EXE-92.

Response Provided By: Ann Bui, Prabha Kumar and David Jagt, Black & Veatch

RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-171. Reference Exhibit BV-E1, Table 11, Part 2.

a. Please explain in detail how the Stormwater billing expense ($13,958,144) and Direct Stormwater Expense ($2,893,000) were calculated. Provide supporting calculations.

b. Please explain whether the Stormwater billing expense of $13,958,144 should be the same billing expense of $13,953,000 reflected on Exhibit BV-E3, Table SW-13.

Response:

This response assumes that "Exhibit BV-E1, Table 11, Part 2" refers to Exhibit BV-E1, Table WW-12.

Please refer to Q3 (Page 3: PWD_St.-9B) in the Supplemental Direct Testimony of Black & Veatch for the allocation of customer related wastewater operation and maintenance expenses to stormwater services.

a. Stormwater billing expenses ($13,958,144) represents the portion of wastewater customer operation and maintenance costs allocated to stormwater. As discussed in the above referenced testimony, wastewater customer costs less the metering costs are allocated 60% to sanitary sewer and 40% to stormwater services. Please refer to PWD Exhibit 6: Cost of Service Work Papers, SCOS15_2017, RETCOS-5 (PDF Page # 568). These calculations are also included in the previously provided wastewater cost of service model SCOS15_2017_V45_A, in response to PA EXE-74 and PA-EXE-92.

Direct Stormwater Expenses ($2,893,000) include those costs directly attributable to stormwater. Please refer to PWD Exhibit 6: Cost of Service Work Papers, SCOS15_2017, Somallo-38 and Somallo-39 (PDF Pages # 539 to 541). These calculations are also included in the previously provided wastewater cost of service model SCOS15_2017_V45_A, in response to PA-EXE-74 and PA-EXE-92. These costs include the following direct costs plus a proportionate allocation of administrative and general expenses:

- Finance - allocation of Grants and basis2 improvement costs.

- Planning & Environmental Services – consulting services for storm water plan review.

b. The billing and collection cost of service ($13,953,000) in Table SW-13 of Exhibit BV-E3 is based on summary cost of service allocation tables presented in the COS Tables worksheet of the cost of service model SCOS15-2017_V45_A, previously provided in response to PA-EXE-74 and PA EXE-92. A slight variance in the allocation of the other operating revenue between what is presented in RETCOS-5 and the summary tables in the COS Tables worksheet

has caused the approximate $5,000 variance identified. This $5,000 variance doesn't have any impact on the proposed rates, as it only represents 0.04% of the customer billing expenses allocated to stormwater service.

Response Provided By: Ann Bui, Prabha Kumar and David Jagt, Black & Veatch

RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-172. Reference Exhibit BV-E3, Table SW-13. Please explain in detail how the $139,736,000 in Impervious Area and Gross Area costs were calculated. Provide supporting documentation.

Response:

The Impervious Area and Gross Area costs of $139,736,000 represent the Test Year 2017 net revenue requirement that needs to be recovered from the stormwater management service (SWMS) charges. Table SW-13 of Exhibit BV-E3 is based on summary cost of service allocation tables presented in the COS Tables worksheet of the cost of service model SCOS15-2017_V45_A, previously provided in response to PA-EXE-74 and PA EXE-92.

Refer to PWD Exhibit 6: Cost of Service Work Papers, SCOS15_2017, RETCOS-25 (PDF Page # 588), for a summary of the Test Year 2017 net revenue requirements ($139,744,200) allocated to stormwater service from the overall wastewater utility.

The slight variance between $139,744,200 derived in RECOS 25 and the $139,736,000 referenced in the summary tables in the COS Tables worksheet is due to the slight variance in the allocation of the other operating revenue. This $8,000 variance does not impact the proposed rates, as it only represents 0.006% of the Test Year 2017 net revenue requirement to be recovered from the GA and IA charges.

Response Provided By: Ann Bui, Prabha Kumar and David Jagt, Black & Veatch

RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-173. Reference Exhibit BV-E1, Table WW-14. Please explain why 70 percent of the costs associated with I/I pumping and treatment is allocated to stormwater but no I/I conveyance costs are allocated to stormwater.

Response:

The allocation of the wastewater utility conveyance costs between sanitary sewer and stormwater services occurs prior to the development of the wastewater costs of service allocated to I/I. Therefore, the conveyance costs included in the cost of service allocations to I/I only reflects the costs associated with the sanitary sewer service. Please refer to PWD Statement 9-B: Supplemental Direct Testimony and Exhibits of Black & Veatch Corporation, Question # 3, beginning on page 2, regarding the allocation process for deriving stormwater service costs of service from the overall wastewater utility costs of service. Allocation of retail wastewater costs of service to I&I and re-apportioning costs between sanitary and stormwater occurs as the fifth step of the allocation process.

As further discussed in the testimony, costs related to the operation and maintenance of the conveyance system are allocated between sanitary and stormwater sewage based upon the system-wide ratio of peak wet weather flows to peak dry weather flows. The peak dry weather flows reflect sanitary sewage flows including I&I.

This allocation of wastewater utility conveyance costs between sanitary sewer and stormwater services is presented in PWD Exhibit 6: Cost of Service Work Papers, SCOS15_2017, Retcos-5 (PDF Page # 568).

Response Provided By: Ann Bui, Prabha Kumar and David Jagt, Black & Veatch

RESPONSE TO PUBLIC ADVOCATE'S INTERROGATORIES AND REQUESTS FOR PRODUCTION OF DOCUMENTS

PA-EXE-174. Reference PWD Statement 9B, page 11, Q/A 16. Please explain in detail whether the PWD's system of stormwater credits has reduced the volume of stormwater requiring treatment by PWD. Provide supporting documentation and/or studies.

Response:

The Philadelphia Water Department's stormwater incentive and public affairs teams have determined that incentive programs provide a mechanism that increases the implementation of green infrastructure on private property. As such the volume of stormwater treated by the Department is reduced. The Water Department has not completed any such studies.

Response Provided By: Erin Williams and Joanne Dahme, Philadelphia Water Department