

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

DIRECT TESTIMONY OF
JOHN J. SPANOS

ON BEHALF OF
AQUA PENNSYLVANIA, INC.

CONCERNING DEPRECIATION

DOCKET NO. R-2011-2267958

NOVEMBER 2011

BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

RE: AQUA PENNSYLVANIA, INC.

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DIRECT TESTIMONY OF JOHN J. SPANOS

Line
No.

1 Q. Please state your name and address.

2 A. John J. Spanos. My business address is 207 Senate Avenue, Camp Hill,
3 Pennsylvania.

4 Q. With what firm are you associated and in what capacity?

5 A. I am associated with the firm of Gannett Fleming, Inc., as a Vice President in
6 the Valuation and Rate Division.

7 Q. How long have you been associated with Gannett Fleming, Inc.?

8 A. I have been associated with the firm since college graduation in June 1986.

9 Q. What is your educational background?

10 A. I have Bachelor of Science degrees in Industrial Management and
11 Mathematics from Carnegie-Mellon University and a Master of Business
12 Administration from York College of Pennsylvania.

13 Q. Are you a member of any professional societies?

14 A. Yes. I am a member of the Society of Depreciation Professionals and the
15 American Gas Association/Edison Electric Institute Industry Accounting
16 Committee.

17

1 Q. Have you taken the certification examination for depreciation professionals?

2 A. Yes, I passed the certification examination of the Society of Depreciation
3 Professionals in September 1997 and was recertified in August 2003 and
4 February 2008.

5 Q. Will you outline your experience in the field of depreciation?

6 A. In June 1986, I was employed by Gannett Fleming Valuation and Rate
7 Consultants, Inc. as a Depreciation Analyst. During the period from June 1986
8 to December 1995, I took part in the preparation of numerous depreciation and
9 original cost studies for utility companies in various industries. Depreciation
10 studies of telephone companies were performed for United Telephone of
11 Pennsylvania, United Telephone of New Jersey and Anchorage Telephone
12 Utility. My work in the railroad industry included depreciation studies for Union
13 Pacific Railroad, Burlington Northern Railroad and Wisconsin Central
14 Transportation Corporation.

15 Assignments in the electric industry included depreciation studies for
16 Chugach Electric Association, The Cincinnati Gas and Electric Company, The
17 Union Light, Heat & Power Company, Northwest Territories Power Corporation
18 and the City of Calgary - Electric System. Pipeline industry assignments
19 included studies for TransCanada Pipelines Limited, Trans Mountain Pipe Line
20 Company Ltd., Interprovincial Pipe Line Inc., Nova Gas Transmission Limited
21 and Lakehead Pipeline Company.

22 My work for the gas industry included depreciation studies for
23 Columbia Gas of Pennsylvania, Columbia Gas of Maryland, The Peoples

1 Natural Gas Company, T. W. Phillips Gas & Oil Company, The Cincinnati Gas
2 and Electric Company, The Union Light, Heat & Power Company,
3 Lawrenceburg Gas Company and Penn Fuel Gas, Inc. Assignments in the
4 water industry included depreciation studies for Indiana-American Water
5 Company, Consumers Pennsylvania Water Company and The York Water
6 Company; and depreciation and original cost studies for Philadelphia Suburban
7 Water Company and Pennsylvania-American Water Company.

8 My participation in each of the above studies included assembly and
9 analysis of historical and simulated data, field reviews, the development of
10 preliminary estimates of service life and net salvage, calculations of annual
11 depreciation, and the preparation of reports for submission to state or
12 provincial public utility commissions or federal regulatory agencies. I
13 performed these studies under the general direction of William M. Stout, P.E.,
14 who at the time was the President of Gannett Fleming Valuation and Rate
15 Consultants, Inc.

16 In January 1996, I was assigned to the position of Supervisor of
17 Depreciation Studies. In July 1999, I was promoted to the position of Manager,
18 Depreciation and Valuation Studies. In December 2000, I was promoted to my
19 present position as Vice-President of Gannett Fleming Valuation and Rate
20 Consultants, Inc., which is now the Valuation and Rate Division of Gannett
21 Fleming, Inc., and I became responsible for conducting all depreciation,
22 valuation and original cost studies, including the preparation of final exhibits

23

1 and responses to data requests for submission to the appropriate regulatory
2 bodies.

3 Since January 1996, I have conducted depreciation studies similar to those
4 previously listed including assignments for Pennsylvania-American Water
5 Company; Aqua Pennsylvania; Kentucky-American Water Company; Virginia-
6 American Water Company; Indiana-American Water Company; Hampton
7 Water Works Company; Omaha Public Power District; Enbridge Pipe Line
8 Company, Inc.; Columbia Gas of Virginia, Inc.; Virginia Natural Gas Company
9 National Fuel Gas Distribution Corporation - New York and Pennsylvania
10 Divisions; The City of Bethlehem - Bureau of Water; The City of Coatesville
11 Authority; The City of Lancaster - Bureau of Water; Peoples Energy
12 Corporation; The York Water Company; Public Service Company of Colorado;
13 Enbridge Pipelines; Enbridge Gas Distribution, Inc.; Reliant Energy-HLP;
14 Massachusetts-American Water Company; St. Louis County Water Company;
15 Missouri-American Water Company; Chugach Electric Association; Alliant
16 Energy; Oklahoma Gas & Electric Company; Nevada Power Company;
17 Dominion Virginia Power; NUI-Virginia Gas Companies; Pacific Gas & Electric
18 Company; PSI Energy; NUI - Elizabethtown Gas Company; Cinergy
19 Corporation - CG&E; Cinergy Corporation - ULH&P; Columbia Gas of
20 Kentucky; South Carolina Electric & Gas Company; Idaho Power Company; El
21 Paso Electric Company; Central Hudson Gas & Electric; Centennial Pipeline
22 Company; CenterPoint Energy-Arkansas; CenterPoint Energy - Oklahoma;
23 CenterPoint Energy - Entex; CenterPoint Energy - Louisiana; NSTAR - Boston

1 Edison Company; Westar Energy, Inc.; United Water Pennsylvania; PPL
2 Electric Utilities; PPL Gas Utilities; Wisconsin Power & Light Company;
3 TransAlaska Pipeline; Avista Corporation; Northwest Natural Gas; Allegheny
4 Energy Supply, Inc.; Public Service Company of North Carolina; South Jersey
5 Gas Company; Duquesne Light Company; MidAmerican Energy Company;
6 Laclede Gas; Duke Energy Company; E.ON U.S. Services Inc.; Elkton Gas
7 Services; Anchorage Water and Wastewater Utility; Kansas City Power and
8 Light; Duke Energy North Carolina; Duke Energy South Carolina; Duke Energy
9 Ohio Gas; Duke Energy Kentucky; Duke Energy Indiana; Northern Indiana
10 Public Service Company; Tennessee-American Water Company; Columbia
11 Gas of Maryland; Bonneville Power Administration; NSTAR Electric and Gas
12 Company; EPCOR Distribution, Inc.; B. C. Gas Utility, Ltd; Entergy Arkansas;
13 Entergy Texas; Entergy Mississippi; Entergy Louisiana, Entergy Gulf States
14 Louisiana, the Borough of Hanover, Madison Gas and Electric, Atlantic City
15 Electric and Greater Missouri Operations. My additional duties include
16 determining final life and salvage estimates, conducting field reviews,
17 presenting recommended depreciation rates to management for its
18 consideration and supporting such rates before regulatory bodies.

19 Q. What is the extent of your formal instruction with respect to utility plant
20 depreciation?

21 A. I have completed the "Techniques of Life Analysis", "Techniques of Salvage
22 and Depreciation Analysis", "Forecasting Life and Salvage", "Modeling and Life
23 Analysis Using Simulation" and "Managing a Depreciation Study" programs

1 conducted by Depreciation Programs, Inc. Also, I have completed the
2 "Introduction to Public Utility Accounting" program conducted by the American
3 Gas Association.

4 Q. Have you previously testified on public utility ratemaking matters?

5 A. Yes. I have submitted testimony to the Pennsylvania Public Utility
6 Commission; the Commonwealth of Kentucky Public Service Commission; the
7 Public Utilities Commission of Ohio; the Nevada Public Utility Commission; the
8 Public Utilities Board of New Jersey; the Missouri Public Service Commission;
9 the Massachusetts Department of Telecommunications and Energy; the
10 Alberta Energy & Utility Board; the Idaho Public Utility Commission; the
11 Louisiana Public Service Commission; the State Corporation Commission of
12 Kansas; the Oklahoma Corporate Commission; the Public Service Commission
13 of South Carolina; the Railroad Commission of Texas – Gas Services Division;
14 the New York Public Service Commission; the Illinois Commerce Commission;
15 the Indiana Utility Regulatory Commission; the California Public Utilities
16 Commission; the Federal Energy Regulatory Commission ("FERC"); the
17 Arkansas Public Service Commission; the Public Utility Commission of Texas;
18 the Maryland Public Service Commission; the Washington Utilities and
19 Transportation Commission; the Tennessee Regulatory Commission; the
20 District of Columbia Public Service Commission; the Mississippi Public Service
21 Commission; the Regulatory Commission of Alaska; Delaware Public Service
22 Commission; Virginia State Corporation Commission; Colorado Public Utility
23 Commission; Oregon Public Utility Commission; Wisconsin Public Service

1 Commission; and the North Carolina Utilities Commission.

2 Q. What is the purpose of your testimony?

3 A. My testimony is in support of the depreciation study conducted under my
4 direction and supervision for the combined utility plant of Aqua Pennsylvania,
5 Inc. ("Aqua PA" or the "Company").

6 Q. Have you prepared exhibits presenting the results of your studies?

7 A. Yes. Exhibit No. 6-A, Part I, presents the results of the depreciation study as of
8 June 30, 2011. Exhibit No 6-A, Part II, presents the results of the depreciation
9 study as of June 30, 2012. In addition, I am responsible for the responses to
10 the following minimum Filing Requirements – Depreciation: F-DP-1, F-DP-2, F-
11 DP-3, F-DP-4, F-DP-5 and F-DP-6.

12 Q. Please describe Exhibit No. 6-A, Parts I and II.

13 A. Exhibit No. 6-A, Part I, titled "Depreciation Study - Calculated Annual
14 Depreciation Accruals Related to Utility Plant in Service at June 30, 2011,"
15 includes the results of the depreciation study as related to the original cost at
16 June 30, 2011. The report also includes the detailed depreciation calculations.
17 Exhibit No. 6-A, Part II, titled "Depreciation Study - Calculated Annual
18 Depreciation Accruals Related to Utility Plant in Service at June 30, 2012,"
19 includes the results of the depreciation study as related to the estimated
20 original cost at June 30, 2012. The report also includes explanatory text,
21 statistics related to the estimation of service life, and the detailed depreciation
22 calculations.

23 Q. What was the purpose of your depreciation study?

1 A. The purpose of the depreciation study was to estimate the annual depreciation
2 accruals related to utility plant in service for ratemaking purposes and, using
3 Commission-approved procedures, to estimate the Company's book reserve at
4 June 30, 2012.

5 Q. Is the Company's claim for annual depreciation in the current proceeding based
6 on the same methods of depreciation as were used in its most recent water
7 rate proceeding at Docket No. R- 2009-2132019.

8 A. Yes, it is. For most plant accounts, the current claim for annual depreciation is
9 based on the straight line remaining life method of depreciation, which has
10 been used for over twenty years. For Accounts 340, 341.2, 342, 343, 346, 347
11 and 348, the claim is based on the straight line remaining life method of
12 amortization. These accounts have a large number of units, but small asset
13 values representing approximately 3 percent of the depreciable plant. The
14 assets represent items located in office buildings, service centers, garages and
15 warehouses. Given the difficulty in maintaining accounting records for these
16 numerous assets and high cost for periodic inventories, retirements are
17 recorded when a vintage is fully amortized, rather than as the units are
18 removed from service. All units are retired when the age of the vintage
19 reaches the amortization period. The annual amortization is based on
20 amortization accounting which distributes the unrecovered cost of fixed capital
21 assets over the remaining amortization period selected for each account.

22 Q. What group procedure is being used in this proceeding for depreciable
23 accounts?

1 A. The equal life group procedure is used in the current proceeding for all
2 depreciable accounts and installation years. The equal life group procedure
3 also was used in this same manner in the Company's last rate proceeding.

4 Q. Is the Company's claim for accrued depreciation in the current proceeding
5 made on the same basis as has been used for over twenty years?

6 A. Yes. The current claim for accrued depreciation is the book reserve brought
7 forward from the book reserve approved by the Commission at Docket No. R-
8 850174.

9 Q. How was the book reserve used in the calculation of annual depreciation?

10 A. The book reserve by account was allocated to vintages to determine original
11 cost less accrued depreciation by vintage. The total annual accrual is the sum
12 of the results of dividing the original costs less accrued depreciation by the
13 vintage composite remaining lives.

14 Q. How was the book reserve at June 30, 2012 estimated?

15 A. The book reserve at June 30, 2012, by account, was projected by adding
16 estimated accruals, salvage and the amortization of net salvage, and
17 subtracting estimated retirements and cost of removal from the book reserve at
18 June 30, 2011. Annual accruals were estimated using the annual accruals
19 calculated as of June 30, 2011. For most accounts, salvage and cost of
20 removal were estimated by (1) expressing actual salvage and cost of removal
21 as a percent of retirements by account, for the most recent five-year period,
22 and (2) applying those percents to the projected retirements by account. For
23 mains, services and hydrants, the historical percents derived in the manner

1 described above were considered to be too high. Typical percents that
2 resulted in amounts consistent with the actual experience during the mid-1990s
3 time frame were used. For large structures, cost of removal was analyzed on a
4 site specific basis. For the purpose of calculating the annual accruals, the
5 projected book reserve by account was allocated to vintages based on
6 calculated accrued depreciation at June 30, 2012.

7 Q. Has a service life study of the Company's water utility property been
8 performed?

9 A. Yes. A service life study was performed in 2010. The service life study is the
10 basis for the service lives I used to calculate annual accruals.

11 Q. Briefly outline the procedure used in performing the service life study.

12 A. The service life study consisted of assembling and compiling historical data
13 from the records related to the water utility plant of the Company; statistically
14 analyzing such data to obtain historical trends of survivor characteristics;
15 obtaining supplementary information from management and operating
16 personnel concerning Company practices and plans as they relate to plant
17 operations; and interpreting the above data to form judgments of service life
18 characteristics.

19 Iowa type survivor curves were used to describe the estimated survivor
20 characteristics of the mass property groups. Individual service lives were used
21 for major individual units of plant, such as reservoirs and buildings housing
22 treatment plants, pump stations, offices and shops. The life span concept was
23 recognized by coordinating the lives of associated plant installed in subsequent

1 years with the probable retirement date defined by the life estimated for the
2 major unit.

3 Q. What statistical data were employed in the historical analyses performed for
4 the purpose of estimating service life characteristics?

5 A. The data consisted of the entries made to record retirements and other
6 transactions related to the water plant during the period 1952-2009. The year
7 1952 is the first year continuing property records were maintained. These
8 entries were classified by depreciable group, type of transaction, the year in
9 which the transaction took place, and the year in which the plant was installed.
10 Types of transactions included in the data were plant additions, retirements,
11 transfers, and balances. In the presentation of service life statistics, only the
12 significant exposure points that were utilized in determining survivor curves
13 were plotted. This process is utilized to show my judgment in service life
14 determinations.

15 Q. What was the source of these data?

16 A. They were assembled from Company records related to its utility plant in
17 service.

18 Q. Were the methods used in the service life study the same as those used in
19 other depreciation studies for water utility plant presented before this Commis-
20 sion?

21 A. Yes. The methods are the same ones that have been presented previously for
22 Aqua PA and for other water companies before the Pennsylvania Public Utility

1 Commission ("PUC" or "Commission") and that have been accepted by the
2 Commission in its past orders concerning water utilities.

3 Q. What approach did you use to estimate the lives of significant structures such
4 as treatment plants and service centers?

5 A. I used the life span technique to estimate the lives of significant structures. In
6 this technique, the survivor characteristics of the structures are described by
7 the use of interim survivor curves and estimated probable retirement dates.
8 The interim survivor curve describes the rate of retirement related to the
9 replacement of elements of the structure such as plumbing, heating, doors,
10 windows, roofs, etc. that occur during the life of the facility. The probable
11 retirement date provides the rate of final retirement for each year of installation
12 for the structure by truncating the interim survivor curve for each installation
13 year at its attained age at the date of probable retirement. The use of interim
14 survivor curves truncated at the date of probable retirement provides a
15 consistent method for estimating the lives of the several years of installation
16 inasmuch as concurrent retirement of all years of installation will occur when
17 the structure is retired.

18 Q. Has your firm used this approach in other proceedings before this
19 Commission?

20 A. Yes, we have used the life span technique on many occasions before the
21 Commission.

22 Q. Has the Commission addressed the appropriateness of the life span technique
23 in any of its Orders?

1 A. Yes, it has. In the Company's rate proceeding at Docket No. C. 19385, the life
2 span technique or concept was used for most of the structures accounts.
3 However, for two structures accounts, the Company employed average
4 survivor curves rather than the life span concept. The Commission held that,
5 for those two accounts, like the rest of the Company's structure accounts, the
6 life span technique should have been used:

7 Exception is also directed at using average survivor curves for
8 Account 312-2, Power and Pumping Structures and Account 312-3,
9 Purification Buildings. It is our opinion that each building in a major
10 complex should be treated with individual life characteristics
11 combined with the life span concept, and that booster stations
12 should be analyzed separately.

13 Q. What are the bases for the probable retirement years that you have estimated
14 for each structure?

15 A. The bases for the estimates of probable retirement years are life spans for
16 each structure that are based on judgment and incorporate consideration of the
17 age, use, size, nature of construction, management outlook and typical life
18 spans experienced and used by other water utilities for similar structures. Most
19 of the life spans result in probable retirement dates that are many years in the
20 future. As a result, the retirement of these structures is not yet subject to
21 specific management plans. Such plans would be premature. At the
22 appropriate time, detailed studies of the economics of rehabilitation and
23 continued use or retirement of the structure will be performed and the results
24 incorporated in the estimation of the structure's life span.

25 Q. Are the factors considered in your estimates of service life presented in Exhibit
26 No. 6-A, Part II?

1 A. Yes. A discussion of the factors considered in the estimation of service lives is
2 presented by account on pages I-3 through I-14 of Exhibit No. 6-A, Part II.

3 Q. Were any material changes to life characteristics made for purposes of this
4 rate filing?

5 A. No. There was no material change in the life estimate for plant accounts or
6 subaccounts in this rate filing. All life estimates were approved in the last rate
7 proceeding when the current service life study was conducted.

8 Q. Please outline the contents of Exhibit No. 6-A, Part II.

9 A. Exhibit No. 6-A, Part II is presented in two parts. Part I, Methods Used in
10 Study, includes an introduction; the estimation of survivor curves and the
11 calculation of annual depreciation; and an explanation of the manner in which
12 net salvage was incorporated in the calculations.

13 Part II, Results of Study, presents a description of the results;
14 summaries of the depreciation calculations; graphs and tables which relate to
15 the service life study; and the detailed depreciation calculations.

16 Table 1, pages II-4 through II-7, presents the estimated survivor curve,
17 the original cost at June 30, 2012, and the book reserve and calculated annual
18 depreciation for each account or subaccount of Utility Plant, Customer
19 Advances for Construction and Contributions in Aid of Construction. Table 2,
20 pages II-8 and II-9, presents the bringforward to June 30, 2012, of the book
21 depreciation reserve as of June 30, 2011. Table 3 on page II-10 sets forth the
22 calculation of the annual accruals used in the bringforward. Table 4, page II-

1 11, presents the experienced and estimated net salvage during the five-year
2 period, 2007 through 2011.

3 The section beginning on page II-12 presents the results of the
4 retirement rate analyses prepared as the historical bases for the service life
5 estimates. The section beginning on page II-187 presents the depreciation
6 calculations related to original cost. The tabulation on pages II-189 through II-
7 192 presents the cumulative depreciated original cost by year installed. The
8 tabulations on pages II-194 through II-351 present the calculation of annual
9 depreciation by vintage by account for each depreciable group of utility plant.

10 Q. Please outline the contents of Exhibit No. 6-A, Part I.

11 A. Exhibit No. 6-A, Part I includes a description of the results, summaries of the
12 depreciation calculations, and the detailed depreciation calculations as of June
13 30, 2011. The descriptions and explanations presented in Exhibit No. 6-A, Part
14 II, are also applicable to the depreciation calculations presented in Exhibit No.
15 6-A, Part I. The graphs and tables related to service life presented in Exhibit
16 No. 6-A, Part I, also support the service life estimates used in Exhibit No.6-A,
17 Part I, inasmuch as the estimates are the same for both test years. The
18 summary tables and detailed depreciation calculations as of June 30, 2011, are
19 organized and presented in the same manner as those as of June 30, 2012.

20 Q. Please use an example to illustrate the manner in which the study is presented
21 in Exhibit No. 6-A, Parts I and II.

22 A. I will use Account 331, Mains and Accessories - Cast Iron Mains - 6-, 8- and
23 10-Inch, as my example, inasmuch as it is the largest depreciable group and

1 represents 36 percent of the original cost of depreciable utility plant as of June
2 30, 2012.

3 The retirement rate method was used to analyze the survivor
4 characteristics of this group. The life tables for the 1954-2009 and 1980-2009
5 experience bands are presented on pages II-96 through II-103 of Exhibit No. 6-
6 A, Part II. The life table, or original survivor curve, is plotted along with the
7 estimated smooth survivor curve, the 110-R3, on page II-95.

8 The calculation of the annual depreciation related to the original cost
9 at June 30, 2011, of utility plant is presented on pages 97 through 100 of
10 Exhibit No. 6-A, Part I. The calculation is based on the 110-R3 survivor curve,
11 the attained age, and the allocated book reserve. The calculation at June 30,
12 2012, is presented on pages II-278 through II-280 of Exhibit No. 6-A, Part II
13 and is based in part on the bringforward of the book reserve. The tabulations
14 in Exhibit 6-A, Parts I and II, set forth the installation year, the original cost,
15 calculated accrued depreciation, allocated book reserve, future accruals,
16 remaining life and annual accrual. The totals are brought forward to Table 1 on
17 page 4 in Exhibit No. 6-A, Part I and on page II-5 in Exhibit No. 6-A, Part II.

18 Q. In what manner is net salvage incorporated in the depreciation calculations?

19 A. As stated on page I-19 of Exhibit No. 6-A, Part II, no adjustment for net salvage
20 was made to the calculated annual depreciation amounts. The total calculated
21 annual depreciation set forth on page 6 of Exhibit No. 6-A, Part I, and on page
22 II-7 of Exhibit No. 6-A, Part II, reflects an addition for the amortization of
23 negative net salvage in accordance with the practice of this Commission. The

1 amortization is based on experience during the period 2006 through 2010 for
2 the calculation as of June 30, 2011, and on experience during the period 2007
3 through June 30, 2011, plus estimates for the second half of 2011 for the
4 calculation as of June 30, 2012. The amounts of the five-year amortizations
5 are calculated in Table 2 on page 7 of Exhibit No. 6-A, Part I, and in Table 4 on
6 page II-11 of Exhibit No. 6-A, Part II.

7 Q. Does this complete your testimony at this time?

8 A. Yes, it does.