
EXHIBIT Y

TESTIMONY OF JEROME C. WEINERT

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

AQUA PENNSYLVANIA WASTEWATER, INC.

DOCKET NO. A-2021-3024267

AQUA STATEMENT NO. 5

DIRECT TESTIMONY

OF

JEROME C. WEINERT, PE, ASA, CDP

UTILITY VALUATION EXPERT

SELECTED BY LOWER MAKEFIELD TOWNSHIP

May 2021

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1 **Q. Please state your name, business address, and occupation.**

2 **A.** My name is Jerome C. Weinert. My business address is 8555 West Forest Home Avenue,
3 Suite 201, Greenfield, WI 53228. I am a Principal and Director of AUS Consultants. This
4 testimony was prepared by me.

5
6 **Q. Please describe your qualifications and indicate if you are registered as a Utility
7 Valuation Expert with the Pennsylvania Public Utility Commission.**

8 **A.** A CV for Jerome C. Weinert is attached to my report and this testimony. I am a registered
9 Utility Valuation Expert with the Pennsylvania Public Utility Commission. I originally
10 obtained that registration in 2016, which was subsequently renewed, and was informed of
11 our most recent renewal by the Pennsylvania PUC Secretary on January 12, 2021.

12
13 **Q. What is the purpose of your testimony?**

14 **A.** This direct testimony provides clarification and explanation of the appraisal I provided to
15 Lower Makefield Township, the Selling Utility pursuant to 66 Pa. C.S. § 1329(a)(5) and in
16 accordance with Uniform Standards of Professional Appraisal Practice 2020-2021 Edition.

17
18 **Q. Are you advocating for any party or outcome?**

19 **A.** No. The Ethics Rule of the USPAP, applicable here pursuant to 66 Pa. C.S. § 1329(a)(3),
20 requires that I perform the appraisal with impartiality, objectivity, and independence, and
21 without accommodation of personal interests. In addition, the USPAP Ethics Rule requires
22 that I not perform the assignment with bias, that I must not advocate the cause or interest

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1 of any party or issue and that I must not accept an assignment that includes the reporting
2 of predetermined opinions and conclusions.

3

4 **Q. Do you have any affiliation with either the Selling Utility or the Acquiring Public**
5 **Utility or Entity?**

6 **A.** No. Other than the current assignment to provide the subject appraisal, I have no business
7 or personal relationships with any party to the proposed acquisition.

8

9 **Q. What is your fee arrangement to deliver the appraisal?**

10 **A.** A copy of the fee arrangement is included with the Application as Exhibit S2. In summary,
11 I am to receive \$26,000 plus expenses in compensation for our appraisal, which represents
12 approximately 0.048% of the appraised value.

13

14 **Q. Will you receive that fee regardless of whether the Commission approves the**
15 **proposed transaction or whether it closes?**

16 **A.** Yes. 66 Pa. C.S. § 1329(a)(3) mandates that I comply with the USPAP when developing
17 my appraisal. Under the USPAP I cannot perform the appraisal with bias and acceptance
18 of a fee contingent on a particular outcome like closing or Commission approval would
19 violate that Ethics Rule.

20

21 **Q. Have you prepared any exhibits, schedules, or appendices to accompany your direct**
22 **testimony?**

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1 **A.** Yes. The appraisal I submitted to the Seller pursuant to Section 1329(a)(5) is included in
2 the Application as Exhibit R. The appraisal includes a narrative and supporting exhibits in
3 sections. All were prepared under my supervision and control. Also, as stated above,
4 attached to this testimony as Appendix A is my CV.

5
6 **Q.** **Please summarize your results of the application of the cost, market, and income**
7 **approaches to valuation.**

8 **A.** The summary results of the cost, income, and market approaches is presented below.

9

Approach	Indicated Value	Weight	Weighted Value
Cost Approach	\$51,414,555	50%	\$25,707,278
Income Approach	\$57,872,959	40%	\$23,149,184
Market Approach	\$55,741,285	10%	\$5,574,129
		100%	\$54,430,591
Conclusion			\$54,430,591

10

11
12 **Q.** **Describe any assumptions, extraordinary assumptions, hypothetical conditions,**
13 **and/or limiting conditions that you applied to the valuation**

14 **A.** The major assumptions and limiting conditions used in preparing our appraisal of Lower
15 Makefield Township’s Sanitary Wastewater Collection System are described in our
16 appraisal report “Fair Market Appraisal Report of the Lower Makefield Township,
17 Pennsylvania’s Sanitary Wastewater Collection System, as of September 17, 2020.”

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1 Beyond the above-described assumptions there are no extraordinary¹ or hypothetical²
2 assumptions as defined in the 2020-2021 Uniform Standards of Profession Appraisal
3 Practice (“USPAP”).

4
5 **Q. How was each assumption used and what was its result?**

6 **A.** The assumptions are detailed in my appraisal report and are discussed further in this
7 testimony.

8
9 **Q. How did you develop the weighting applied to each approach in your appraisal and
10 why are the individual weights you chose appropriate for this proposed transaction?**

11 **A.** For the cost approach I chose a weighting of 50%. It is my opinion that this weighting is
12 appropriate for the cost approach because the major purpose of this appraisal is to be an
13 input to the Commission’s establishment of cost for future ratemaking and the cost
14 approach conclusion is directly reflective of the property cost.

15 For the market approach I chose a weighting of 10%. It is my opinion that this
16 weighting is appropriate for the market approach because while the market approach
17 provides some information as to the value of the property, establishing comparability
18 between the individual sales to the subject property is difficult and uncertain therefore
19 requiring less weight of the market approach and the 10% weight accomplishes that
20 objective.

¹ Extraordinary assumption: an assignment-specific assumption as of the effective date regarding uncertain information used in an analysis which, if found to be false, could alter the appraiser’s opinions or conclusions. (2020-2021 USPAP page 4)

² Hypothetical condition: a condition, directly related to a specific assignment, which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but used for the purpose of analysis. (2020-2021 USPAP page 4)

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1 For the income approach I chose a weighting of 40%. It is my opinion that this
2 weighting is appropriate for the income approach because the income approach reflects the
3 value of the property's return to the property's owner. And the 40% weight accomplishes
4 that objective.

5
6 **Q. Did you conduct an on-site inspection of the Selling Utility assets, and if so, what was
7 its result on the appraisal?**

8 A. No.

9
10 **Q. What Utility Earnings Report was used to create the capital structure used in your
11 appraisal?**

12 A. I used a market required capital structure based on an analysis of the market capital
13 structure (detailed in the Cost of Capital / Required Return portion of our appraisal report).
14 Information used in developing the market capital structure was obtained from financial
15 statistics reported in Value Line Investment Survey for the water / wastewater industry
16 published in their October 9, 2020 issue.

17
18 **Q. What capital structure was used in your appraisal?**

19 A. The capital structure used in my appraisal is included below.

20

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1

Type of Capital	Capital Ratio	Cost Rate	Tax Rate	Tax effect on Cost Rate	Weighted Cost
Debt	29%	2.82%	28.89%	71.11%	0.58%
Preferred	0%	NA%			NA%
Common Equity	71%	9.90%			7.03%
Total	100%				7.61%

2

3

4 **Cost Approach**

5 **Q. Regarding your application of the cost approach, what method did you use to**
6 **determine the cost approach result (e.g. original cost, replacement cost, reproduction**
7 **cost)?**

8 **A.** I used the replacement cost method.

9

10 **Q. Please explain why you chose the replacement cost method.**

11 **A.** I chose the replacement cost method because it is considered the proper starting point for
12 a cost approach. Replacement cost reflects the appraisal date cost of providing the
13 property's functionality and capacity at the appraisal date cost using recognized materials
14 and labor costs.

15

16 **Q. What index did you use for that method?**

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1 **A.** I used the Handy Whitman Index of Public Utility Construction Costs for the Water
2 Industry (North Eastern US Region), AUS Telephone Index (General Plant), and various
3 United States Bureau of Labor Statistics cost index series.

4
5 **Q.** **Under your application of the cost approach what assets did you value or trend**
6 **differently from other assets and why was that necessary?**

7 **A.** I costed each property account with cost trends appropriate for the property contained in
8 the account. As such, the costing of each property account may differ from account to
9 account. It is my opinion that an accurate appraisal requires each property account be
10 costed with cost trends reflective of the property contained in the account.

11
12 **Q.** **Under your application of the cost approach, what year-end date did you use for**
13 **calculating the depreciation reserve?**

14 **A.** I used the average of 2020.

15
16 **Q.** **How did you determine the depreciation parameters of survival/retirement**
17 **characteristics and service lives for the utility property under the cost approach?**

18 **A.** I determined those parameters based on AUS Consultants' experience in preparing
19 depreciation studies for the water and wastewater industry and our experience appraising
20 water and wastewater properties. I also considered the depreciation parameters of both
21 Aqua Pennsylvania Wastewater Inc. and Pennsylvania American Water Company which
22 were filed as part of their recent General Rate cases.

23

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1 **Q. Why are those parameters appropriate?**

2 **A.** Those parameters are appropriate because the parameters used in AUS Consultants'
3 experience reflect the survival / retirement characteristics of normal and functional service
4 lives of water and wastewater properties.

5

6

7 **Market Approach**

8 **Q. Regarding your application of the market approach, what methods did you use to**
9 **determine the market approach result?**

10 **A.** I used the comparable sales of water and wastewater properties in the Commonwealth of
11 Pennsylvania subsequent to the passage of Section 1329 and financial market value ratios
12 of publicly traded water and wastewater companies as reported in the October 9, 2020 issue
13 of Value Line Investment Survey.

14

15 **Q. What assumptions, analyses, and/or adjustments did you make under each method?**

16 **A.** Under the comparable sales method, it is my opinion that sales amount to depreciated
17 replacement cost is the best indicator in arriving at the appraised value of physical assets
18 operating as a wastewater collection system. Under the financial ratios method, I believe
19 that an accurate result depends on using the weighted mean of the ratio of the market debt
20 and equity to book debt and equity.

21

22 **Q. What were the results of each analysis you performed?**

23 **A.** The comparable sales analysis produced a result of \$55,741,285

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Q. Which results were used to determine your market approach result?

A. I used the results of \$55,741,285 because I believe those results represent an accurate assessment and it was based on the relationship of market comparable sales to the replacement cost less depreciation of those properties.

Q. What was that calculation you used to determine your overall market approach results?

A. The calculation I used consisted of the ratio of the market sales to their replacement cost new applied to the replacement cost new less depreciation of the Lower Makefield property.

Q. What comparable transactions or comparable sales did you evaluate to develop your market approach?

A. I examined the following transactions to develop the result of my market approach:

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1

**Lower Makefield Township
Bucks County PA
Wastewater Collection System and Purchased Treatment Capacity
Investor-Owned Utility
As of September 17, 2020**

Comparable Sales Approach

Market Sales Data

RowID	Approximate Date	Buyer	Seller	County	Type of Facility	Initial Purchase Price	Final Purchase Price ¹	Number of Total Customers	Relationship to the passage of Section 1329	Average Purchase Price per Customer	Market Value per customer
1	6/1/2016	PA American Water	City of McKeesport	Allegheny	Wastewater Collection and Treatment	180,000,000	159,000,000	21,953	Post	7,242.75	7,243
2	8/1/2016	Aqua PA	New Garden Twp. SA	Chester	Collection and Paid for and Owned Treatment	29,500,000	29,500,000	2,106	Post	14,007.60	14,008
3	12/1/2017	Aqua PA	Limerick Township	Montgomery	Wastewater Collection and paid for treatment Capacity	64,373,000	64,373,000	5,434	Post	9,264	11,846
4	12/10/2017	Aqua PA	East Bradford Township	Chester	Water Treatment and Distribution System	5,000,000	5,000,000	1,248	Post	4,006.41	4,006
5		SUEZ	Mahoning	Carbon	Wastewater Collection and Treatment	4,734,800	4,734,800	2,806	Post		1,687
6		SUEZ	Mahoning	Carbon	Wastewater Collection and Treatment	4,765,200	4,765,200	2,806	Post		1,698
7	6/1/2018	Aqua PA	Cheleham	Montgomery	Water Distribution and Treatment	50,250,000	50,250,000	10,500	Post	4,785.71	4,786
8	11/14/2018	PA American Water	Steelton	Dauphin	Wastewater Collection	22,500,000	21,750,000	2,325	Post	9,354.84	9,355
9		PA American Water	Sadsbury	Chester	Wastewater Collection and Treatment	9,250,000	8,600,000	998	Post	8,617.23	8,617
10	5/28/2018	PA American Water	Exeter	Berks	Wastewater Collection and Treatment	96,000,000	96,000,000	9,000	Post	10,666.67	10,667
11	10/29/2018	Aqua PA	East Norriton	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post	4,242.42	4,242
12	9/30/2018	PA American	Kane	Mckean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post	8,753.74	8,754
13	12/10/2019	PA American	Royersford	Montgomery	Water Treatment and Distribution System	13,000,000	13,000,000	1,596	Post	8,145.36	8,145
14	12/17/2019	PA American	Valley	Chester	Wastewater Collection System	7,325,000	7,325,000	1,459	Post	5,020.56	5,021
15	12/17/2019	PA American	Valley	Chester	Wastewater Collection System	13,950,000	13,950,000	1,644	Post	8,485.40	8,485
16	12/31/2019	Aqua PA	Water Quality Authority (DELCORA)	Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Post	16,785.04	16,785
17	4/28/2020	PA American Water	Upper Pottsgrove	Montgomery	Wastewater Collection	13,750,000	13,750,000	1,428	Post	9,628.85	9,629
2			Notes:								

¹ Final Purchase Price reflects the agreed upon purchase price achieved to settled the acquisition application

3

4

5

1 **Income Approach**

2 **Q. Regarding your application of the income approach, what method did you use to**
3 **determine the income approach result?**

4 **A.** I used the discounted cash flow method.

5
6 **Q. What assumptions did you employ to develop your income approach result?**

7 **A.** Under the income approach, it is my opinion that the results of the future operations of the
8 Lower Makefield Sanitary Wastewater Collection System must be considered. I believe
9 that an accurate result depends on adjusting recent results of the systems operation to better
10 reflect how those results will migrate over future periods under the operation as a rate
11 regulated wastewater collection system regulated by the Pennsylvania PUC.

12
13 **Q. What discount rate did you use to calculate your income approach?**

14 **A.** I used a discount rate of 7.61% and 7.85% capitalization rate.

15
16 **Q. Please explain how you developed the discount rate.**

17 **A.** In each case the discount rate was a market discount rate at the appraisal date and was
18 determined using the weighted market cost of capital (“WACC”) of both debt and equity.
19 The inputs to the WACC determination: capital structure, cost of debt, cost of equity, and
20 income tax rate (state and federal) were determined based on analyses of Value Line
21 Investment Surveys, Value Line Selected Yield, Ibbotson Stock, Bonds, Bills, and Inflation
22 (Ibbotson SBBI) 2020 Edition (SBBI activity over the period 1926 through 2019). The
23 cost of debt was determined on October 2, 2020 based on the Value Line Selected Yields,

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1 and the Bureau of Technical Utility Services' Report on Quarterly Earnings of
2 Jurisdictional Utilities for Year Ended September 30, 2020. The cost of equity was based
3 on the capital asset pricing model ("CAPM") and the Dividend Growth Model ("DGM"),
4 two recognized cost of equity estimating models. The above described data for the Lower
5 Makefield appraisal can be found in the exhibits to my appraisal report in the section
6 entitled Cost of Capital / Required Return.
7

8 **Q. What capital structure inputs differ from those identified in capital structure set forth**
9 **earlier in your testimony?**

10 **A.** None. As described in the previous discussion of the capital structure, we utilized a market
11 required capital structure based on analysis of the water / wastewater industry's market
12 capital structure as defined by analysis of market financials as published in Value Line
13 Investment Survey (October 9, 2020). The theory in an appraisal is to estimate the value
14 of a property in an arm's length transaction wherein the purchaser finances the purchase
15 with capital (debt and equity) available in the financial markets at the appraisal date. Those
16 are the current (appraisal date) financial markets.
17

18 **Q. What is the source and basis of the alternative input you propose in the income**
19 **approach?**

20 **A.** As discussed above, we had used Value Line Investment Survey to develop a market
21 required capital structure. Please see Application Exhibit R (AUS Appraisal) Income
22 Approach section, page 32 of 34 for the cost of capital of the Income Approach and Cost

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1 of Capital / Required Return, pages 1 through 24, for the basis of the Cost of Capital /
2 Required Return.

3

4 **Q. If you used a terminal value in your discounted cash flow analysis what is the number**
5 **of years over which the cash flows are considered?**

6 **A.** I considered those cash flows over 19 periods with period 20 representing all future periods.

7

8 **Q. What is the basis for using this number of years?**

9 **A.** It is my opinion that the use of 19 periods is a reasonable number of periods for the
10 forecasted revenues and expenses to stabilize.

11

12 **Q. What number of Selling Utility customers or equivalent dwelling units did you use to**
13 **value the Seller's system and how did you develop that number?**

14 **A.** I used 11,151 customers (provided by the client) as of 4th quarter 2020 which impacted a
15 portion of my Market Approach.

16

17 **Q. Did you make any updates to your appraisal after it was submitted to the Seller, and**
18 **if so, what was the update, when was it made, and why was it necessary?**

19 **A.** No.

20

21 **Q. Does this conclude your direct testimony?**

22 **A.** It does. However, by filing this direct testimony I understand that I may have the
23 opportunity to submit additional testimony responsive to challenges to my appraisal.

Curriculum Vitae (CV) of Jerome C. Weinert, P.E., CDP, ASA

Mr. Weinert is currently Principal and Director of AUS Consultants, Depreciation and Valuation. He has forty-nine (2021-1972) years' experience in valuation and depreciation consulting and management. AUS, with offices across the country, has provided consulting services to the regulated utility industry nationally for over thirty-nine years. A partial list of services provided includes valuations depreciation studies, rate of return studies, cost of service studies, and rate design.

Prior to joining AUS in 1987, Mr. Weinert was employed by American Appraisal Associates, Inc. (American) for sixteen years in their Regulated Industries Group. He held various positions at American, the last being supervising appraiser. Among his other valuation responsibilities, he directed the firm's utility industry capital recovery studies and AUS Consultant's valuation of communication company assets and businesses.

Mr. Weinert graduated from the Milwaukee School of Engineering with a Bachelor of Science degree in Mechanical Engineering and received a master's in business administration from Marquette University. He is a registered professional engineer (1976) (by examination) in the state of Wisconsin as well as a senior member (1982) of the American Society of Appraisers in the public utility valuation field. This latter designation is obtained by written examination primarily in the areas of utility valuation, depreciation, and the economics of regulated firms. He is also a Certified Depreciation Professional (1997) (CDP) and founding member of the Society of Depreciation Professionals and the Society's 1995 President and sponsor of the Society's Certification and re-certification program as such Mr. Weinert developed these programs and oversaw their initial introduction into the Society. He also worked in conjunction with Society members in the development of the Society's training programs which as of 2003 has become the only such formalized depreciation training program in the North America and is an instructor in several of its courses.

During his professional career related to valuations and depreciation matters Mr. Weinert has testified before various courts and public service commissions on these subjects. He has also assisted numerous utilities in preparing capital recovery plans which specifically address the issues of plant replacement. Mr. Weinert has also presented expert testimony on valuation matters. Mr. Weinert has testified before the Pennsylvania Public Utility Commission on regulatory matters associated with Pennsylvania Section 1329 matters. On matters related to eminent domain issues, Mr. Weinert has presented expert testimony in the Massachusetts Superior Court, the Court of Common Pleas, Fayette County, Ohio, the New Hampshire Public Utilities Commission, the Twentieth Judicial Court (deposition only) in Charlotte County, Florida, the Nineteenth Judicial Circuit Court in St. Lucie County, Florida (deposition only). In regard to ad valorem taxation, Mr. Weinert has presented study results to the New York State Board of Equalization and Assessment (now the New York Office of Real Property Services (NY ORPS)), pertaining to useful life and net salvage values for all types of utility property subject to the Board's mass appraisal model. Mr. Weinert has appeared before the Valuation Adjustment Board in Florida for Duval, Hillsborough, Okeechobee, and Palm Beach counties, the Twelfth Judicial Circuit Sarasota County, Florida, the California Board of Equalization and Assessment, the Arizona Board of Assessment, the Missouri Board of Taxation, the Colorado and Texas Departments of Review, the Massachusetts Tax Appeal Court, the Superior Court of the State of Arizona in the County of Maricopa, the State Tax Appeal Board of the State of Montana, the New York City Tax Commission and the Public Utility Commission of Pennsylvania Section 1329 hearings (8).

Mr. Weinert has appeared before regulatory bodies in Alaska, Arkansas, Illinois, Indiana, Iowa, Missouri, Nevada, Nebraska, North Carolina, Ohio, Oregon, Pennsylvania, and South Carolina in support of rate-base valuation determination and capital recovery. He has presented testimony on depreciation matters before the Canadian Radio-Television and Telecommunications Commission (CRTC) and the United

QUALIFICATIONS 1

States Federal Energy Regulatory Commission (FERC). In terms of water and wastewater acquisitions and applications for regulatory approval of rate base Mr. Weinert has testified for two investor-owned acquisitions of municipal wastewater authorities one representing the municipality and secondly for the acquiring investor-owned utility. He has submitted study results to the State Commissions of Alabama, Alaska, Arkansas, Idaho, Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, North Carolina, Oregon, Pennsylvania, South Carolina, Washington, and Wisconsin, and the Federal Communications Commission.

Mr. Weinert has presented papers on valuation and depreciation topics to professional and utility industry trade organizations. He also directed AUS Consultants' semi-annual week-long depreciation training programs (1988-1997). These specialized training courses, offered at basic and advanced levels, teach depreciation study techniques to public utility and public service commission staff specialists. The training includes depreciation theory and concepts and hands-on experience with personal computer-based analytical depreciation programs.

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
2021				
AT&T Communications	North America	2020	2021	Ad Valorem Tax Appraisal
AT&T Communications	California	2020	2021	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2020	2021	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2020	2021	Ad Valorem Tax Appraisal
2020				
AT&T Communications	North America	2019	2020	Ad Valorem Tax Appraisal
AT&T Communications	California	2019	2020	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2019	2020	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2019	2020	Ad Valorem Tax Appraisal
Verizon New York, Inc.	New York	2019	2020	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2019	2020	Ad Valorem Tax Appraisal
East Norriton Township, PA	East Norriton Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Kane Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Royersford Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Valley Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Valley Water	2019	2020	Fair Market Value 1329
Lehigh County Authority	Allentown Water & Sewer	2020	2020	Financing
Pennsylvania American Water Company	Upper Pottsgrove wastewater	2020	2020	Fair Market Value 1329
2019				
AT&T Communications	North America	2018	2019	Ad Valorem Tax Appraisal
AT&T Communications	California	2018	2019	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2018	2019	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2018	2019	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2018	2019	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2018	2019	Ad Valorem Tax Appraisal
Cheltenham Township, PA	Cheltenham Wastewater	2018	2019	Fair Market Value 1329
Pennsylvania American Water Company	Steelton Water	2018	2019	Fair Market Value 1329
Pennsylvania American Water Company	Exeter Wastewater	2018	2019	Fair Market Value 1329
2018				
AT&T Communications	North America	2017	2018	Ad Valorem Tax Appraisal
AT&T Communications	California	2017	2018	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2017	2018	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2017	2018	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2017	2018	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2017	2018	Ad Valorem Tax Appraisal
Level 3 Communications, LLC	North America	2017	2018	Ad Valorem Tax Appraisal
Level 3 Communications, LLC	California	2017	2018	Ad Valorem Tax Appraisal
CenturyLink Communications, LLC	North America	2017	2018	Ad Valorem Tax Appraisal
CenturyLink Communications, LLC	California	2017	2018	Ad Valorem Tax Appraisal
East Bradford Township, PA	East Bradford Wastewater	2018	2018	Fair Market Value 1329
Pennsylvania American Water Company	Sadsbury Wastewater	2017	2018	Fair Market Value Appraisal
Pennsylvania American Water Company	Kane Wastewater	2017	2018	Fair Market Value

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
2017				
AT&T Communications	North America	2016	2017	Ad Valorem Tax Appraisal
AT&T Communications	California	2016	2017	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2016	2017	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2016	2017	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2016	2017	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2016	2017	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2016	2017	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2016	2017	Ad Valorem Tax Appraisal
Level 3 Communications	California	2016	2017	Ad Valorem Tax Appraisal
Whitpain Township, PA	Whitpain Wastewater	2016	2017	Appraisal for Planning
Plymouth Township, PA	Plymouth Wastewater	2016	2017	Appraisal for Planning
East Norriton Township, PA	East Norriton Wastewater	2016	2017	Appraisal for Planning
Pennsylvania American Water Company	Sadsbury Wastewater	2016	2017	Fair Market Value Appraisal
Pennsylvania American Water Company	McKeesport Wastewater	2016	2017	Fair Market Value Appraisal
Intermountain Gas Company	Idaho	2016	2017	Depreciation Study
2016				
AT&T Communications	North America	2015	2016	Ad Valorem Tax Appraisal
AT&T Communications	California	2015	2016	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2015	2016	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2015	2016	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2015	2016	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2015	2016	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2015	2016	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2015	2016	Ad Valorem Tax Appraisal
Level 3 Communications	California	2015	2016	Ad Valorem Tax Appraisal
New Garden Township, PA	New Garden Wastewater	2016	2016	Fair Market Value Appraisal
2015				
AT&T Communications	North America	2014	2015	Ad Valorem Tax Appraisal
AT&T Communications	California	2014	2015	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2014	2015	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2014	2015	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2014	2015	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2014	2015	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2014	2015	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2014	2015	Ad Valorem Tax Appraisal
Level 3 Communications	California	2014	2015	Ad Valorem Tax Appraisal
Verizon Wireless	Nationwide	2014	2015	Ad Valorem Tax Appraisal
2014				
AT&T Communications	North America	2013	2014	Ad Valorem Tax Appraisal
AT&T Communications	California	2013	2014	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2013	2014	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2013	2014	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2013	2014	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2013	2014	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2013	2014	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2013	2014	Ad Valorem Tax Appraisal

QUALIFICATIONS 4

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Level 3 Communications	California	2013	2014	Ad Valorem Tax Appraisal
Cascade Natural Gas Corporation	Oregon & Washington	2013	2014	Depreciation Study
Intermountain Gas Company	Idaho	2013	2014	Depreciation Study
Virgin Islands Telephone Corporation	US Virgin Islands	2013	2014	Depreciation Study
Verizon Wireless	Nationwide	2013	2014	Ad Valorem Tax Appraisal

2013

AT&T Communications	North America	2012	2013	Ad Valorem Tax Appraisal
AT&T Communications	California	2012	2013	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2012	2013	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2012	2013	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2012	2013	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2012	2013	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2012	2013	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2012	2013	Ad Valorem Tax Appraisal
Sprint Nextel Corporation	North America	2012	2013	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	New England Mass	2002-2007	2013	Ad Valorem Tax Appraisal

2012

AT&T Communications	North America	2011	2012	Ad Valorem Tax Appraisal
AT&T Communications	California	2011	2012	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2011	2012	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2011	2012	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2011	2012	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2011	2012	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2011	2012	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2011	2012	Ad Valorem Tax Appraisal
Sprint Nextel Corporation	North America	2011	2012	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2011	2012	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	Florida - revised	2008	2012	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2012	2012	Ad Valorem Tax Appraisal

2011

AT&T Communications	North America	2010	2011	Ad Valorem Tax Appraisal
AT&T Communications	California	2010	2011	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2010	2011	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2010	2011	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2010	2011	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2010	2011	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2010	2011	Ad Valorem Tax Appraisal

QUALIFICATIONS 5

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Level 3 Communications	North America, California	2010	2011	Ad Valorem Tax Appraisal
Global Crossing	North America	2010	2011	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2010	2011	Depreciation Study
Sprint Nextel Corporation	North America	2010	2011	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2010	2011	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	Florida - revised	2008	2011	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2010	2011	Depreciation Study
Virgin Islands Telephone Corporation	US Virgin Islands	2010	2011	Technical Update of Depreciation Study
2010				
AT&T Communications	North America	2009	2010	Ad Valorem Tax Appraisal
AT&T Communications	California	2009	2010	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2009	2010	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2009	2010	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2009	2010	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2009	2010	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2009	2010	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2009	2010	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2009	2010	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2009	2010	Ad Valorem Tax Appraisal
Global Crossing	North America	2009	2010	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2009	2010	Ad Valorem Tax Appraisal
2009				
AT&T Communications	North America	2008	2009	Ad Valorem Tax Appraisal
AT&T Communications	California	2008	2009	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2008	2009	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2008	2009	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2008	2009	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2008	2009	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2008	2009	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2008	2009	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas	2008	2009	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2008	2009	Ad Valorem Tax Appraisal
Embarq Northwest	Washington	2008	2009	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2008	2009	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2008	2009	Ad Valorem Tax Appraisal

QUALIFICATIONS 6

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Level 3 Communications	North America, California, Michigan & Arizona	2008	2009	Ad Valorem Tax Appraisal
Global Crossing	North America	2008	2009	Ad Valorem Tax Appraisal
AboveNet, Inc	North America/California	2003	2009	Ad Valorem Tax Appraisal
Verizon Wireless	Ohio Properties	2004-2005	2009	Ad Valorem Tax Appraisal
Virgin Islands Telephone Corporation	US Virgin Islands	2008	2009	Depreciation Study
Sprint Nextel Corporation	North America	2008	2009	Ad Valorem Tax Appraisal
2008				
AT&T Communications	North America	2007	2008	Ad Valorem Tax Appraisal
AT&T Communications	California	2007	2008	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2007	2008	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2007	2008	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2007	2008	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2007	2008	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2007	2008	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas	2007	2008	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2007	2008	Ad Valorem Tax Appraisal
Embarq Northwest	Washington	2007	2008	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	California	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	New England Mass	2002-2007	2008	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2007	2008	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California, Michigan & Arizona	2007	2008	Ad Valorem Tax Appraisal
Global Crossing	North America	2007	2007	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2007	2008	Depreciation Study
2007				
AT&T Communications	North America	2006	2007	Ad Valorem Tax Appraisal
AT&T Communications	California	2006	2007	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2006	2007	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2006	2007	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2006	2007	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2006	2007	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas,	2006	2007	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2006	2007	Ad Valorem Tax Appraisal
Embarq North Carolina	North Carolina	2006	2007	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	California	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2006	2007	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2006	2007	Ad Valorem Tax Appraisal
Qwest Communications Corporation	North America	2006	2007	Ad Valorem Tax Appraisal
Level 3 Communications	California			
Level 3 Communications	North America, California, Michigan, & Arizona	2006	2007	Ad Valorem Tax Appraisal
Level 3 Communications	Arizona	2002 - 2006	2007	Ad Valorem Tax Appraisal

QUALIFICATIONS 7

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Global Crossing	North America	2006	2007	Ad Valorem Tax Appraisal
Alaska Communications System, Inc. (ACS)	ACS of Alaska ACS of Anchorage ACS of Fairbanks ACS of the Northland ACS Holdings	2006	2007	Depreciation Studies
Intermountain Gas Company	Idaho	2006	2007	Depreciation Study
2006				
AT&T Communications	Palm Beach Florida	2000 - 2003	2006	Ad Valorem Tax Appraisal
AT&T Communications	North America	2005	2006	Ad Valorem Tax Appraisal
AT&T Communications	California	2005	2006	Ad Valorem Tax Appraisal
Sprint Florida, Inc.	Florida	2005	2006	Ad Valorem Tax Appraisal
Sprint Texas, Inc.	Texas,	2005	2006	Ad Valorem Tax Appraisal
Sprint Missouri, Inc.	Missouri	2005	2006	Ad Valorem Tax Appraisal
Sprint North Carolina	North Carolina	2005	2006	Ad Valorem Tax Appraisal
Sprint Virginia	Virginia	2005	2006	Ad Valorem Tax Appraisal
Embarq Nevada	Nevada	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	California	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2005	2006	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	Massachusetts	2002-2--5	2006	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2005	2006	Ad Valorem Tax Appraisal
Level 3 Communications	Arizona	2002-2006	2006	Ad Valorem Tax Appraisal
Global Crossing	North America	2005	2006	Ad Valorem Tax Appraisal
Indianapolis Power & Light	IPL	2005	2006	Depreciation Study
2005				
AT&T Communications	North America	2004	2005	Ad Valorem Tax Appraisal
AT&T Communications	California	2004	2005	Ad Valorem Tax Appraisal
Sprint Florida, Inc.	Florida	2004	2005	Ad Valorem Tax Appraisal
Sprint PCS	North America	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	California	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2004	2005	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2004	2005	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2004	2005	Ad Valorem Tax Appraisal
Global Crossing	North America	2004	2005	Ad Valorem Tax Appraisal
Global Crossing	New York Special Franchise Property	2003 & 2004	2005	Ad Valorem Tax Appraisal
Indianapolis Power & Light	IPL	2004	2005	Depreciation Study
2004				
Sprint Florida, Inc.	Florida	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	California	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	New England	2003	2004	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2003	2004	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2003	2004	Ad Valorem Tax Appraisal
Global Crossing	North America	2003	2004	Ad Valorem Tax Appraisal

QUALIFICATIONS 8

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Sprint PCS	Cost Indexes	2003	2004	Ad Valorem Tax Appraisal
AT&T Communications	North America	2003	2004	Ad Valorem Tax Appraisal
AT&T Communications	California	2003	2004	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2003	2004	Depreciation Study
2003				
Sprint Florida, Inc.	Florida	2002	2003	Ad Valorem Tax Appraisal
Verizon Communications	California	2002	2003	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2002	2003	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2002	2003	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2002	2003	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2002	2003	Ad Valorem Tax Appraisal
AT&T Communications	North America	2002	2003	Ad Valorem Tax Appraisal
AT&T Communications	California	2002	2003	Ad Valorem Tax Appraisal
Global Crossing	North America	2002	2003	Ad Valorem Tax Appraisal
Verizon Wireless	Broward County, FL	1998 through 2002	2003	Ad Valorem Tax Appraisal
2002				
Sprint Florida, Inc.	Florida	2001	2002	Ad Valorem Tax Appraisal
Verizon Communications	California	2001	2002	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2001	2002	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2001	2002	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2001	2002	Ad Valorem Tax Appraisal
Global Crossing	North America	2001	2002	Ad Valorem Tax Appraisal
AT&T Wireless	Plymouth, MI	2001	2002	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2001	2002	Ad Valorem Tax Appraisal
AT&T Communications	North America	2001	2002	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2001	2002	Depreciation Study
AT&T Communications	California	2001	2002	Ad Valorem Tax Appraisal
2001				
Verizon	Verizon - New York	2001	2001-2	Functional Obsolescence & Useful Life studies for valuation
Sprint Florida, Inc.	Sprint Florida, Inc.	2000	2001	Ad Valorem Tax Appraisal
Verizon Communications	California	2000	2001	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2000	2001	Ad Valorem Tax Appraisal
Global Crossing	North America	2000	2001	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2000	2001	Ad Valorem Tax Appraisal
Sprint Corporation	Centel - Nevada	2000	2001-2	Depreciation Study
Alaska Communications System, Inc. (ACS)	ACS of Alaska	2000	2001	Depreciation Study
	ACS of Anchorage			
	ACS of Fairbanks			
	ACS of the Northland			
	ACS Holdings			
2000				
Sprint PCS	BTS Equipment	2000	2000	Economic Life Study
Telus Communications	Telus - Alberta & British Columbia	2000	2000	Depreciation study Phase III Price Caps

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Sprint Florida, Inc.	Florida	1999	2000	Ad Valorem Tax Appraisal
Verizon Communications	California	1999	2000	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1999	2000	Ad Valorem Tax Appraisal
1999				
Sprint Corporation	Centel - Nevada	1998	1999	Depreciation Study
Intermountain Gas Company	Intermountain Gas Company	1998	1999	Depreciation Study
Sprint Florida, Inc.	Florida	1998	1999	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1998	1999	Ad Valorem Tax Appraisal
1998				
Frontier Corporation	Frontier Telephone of Rochester	1998	1997	Valuation depreciation Lives and Net Salvage Parameters
Pacific Telecom, Inc.	Telephone Utilities of Washington	1997	1998	Depreciation Study
Sprint Florida, Inc.	Florida	1997	1998	Ad Valorem Tax Appraisal
Verizon Communications	Florida	1997	1998	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1997	1998	Ad Valorem Tax Appraisal
Sprint Corporation	United Telephone Company of South Carolina	1998	1998	Depreciation Expense Universal Service Fund
Sprint Corporation	Carolina Telephone and Telegraph and Central Telephone of North Carolina	1998	1998	Depreciation Expense Universal Service Fund
Telus Communications	Telus - Edmonton (TCE)	1997	1998	Depreciation Study Phase II Price Caps
1997				
Sprint Corporation	Centel - Nevada	1997	1997	Unbundling/ Inter-connection Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of Oregon	1996	1997	Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of Alaska 1996 And the Northland		1997	Depreciation Study
Telus Communications	Telus - TCI formerly AGT	1996	1997	Depreciation Study Phase II Price Caps
Indianapolis Power & Light	IPL	1996	1997	Depreciation Study
Sprint Florida, Inc.	Florida	1996	1997	Ad Valorem Tax Appraisal
Verizon Communications	Florida	1996	1997	Ad Valorem Tax Appraisal
Pacific Telecom, Inc.	Eagle Telephone (Colorado) 1996		1997	Depreciation Study
1996				

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Intermountain Gas Company	Intermountain Gas Company	1995	1996	Depreciation Study
Sprint Florida, Inc.	Florida	1995	1996	Ad Valorem Tax Appraisal
Century Telephone	Century Telephone of Ohio, Inc.	1995	1996	Depreciation Study
Telus Communications	AGT Limited (Alberta Government Telephones)	1995	1996	Depreciation Study
Johnson County Kansas Office of the Assessor	Useful Life of Computer Equipment	1995	1995	Useful/Market Life Analysis
Milwaukee Metropolitan Sewerage District	Milwaukee Metropolitan Sewerage District	1995	1996	Depreciation Study
Sprint Corporation	Long Distance Division	1995	1995	Depreciation/Recovery Status Study
Sprint Corporation	Cellular Division	1995	1995	Depreciation/Recovery Status Study
Pacific Telecom, Inc.	Alascom, Inc.	1994	1995	Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of the Northland	1993	1994	Depreciation Study
	Telephone Utilities of Alaska	1993	1994	Depreciation Study
Indiana Energy	Indiana Gas Company	1993	1994	Depreciation Study
Columbia Gas Transmission	Gas Pipeline Property in Sullivan County, NY	1993	1993	Useful Life Study
United Telephone - Midwest Group	United Telephone Company of Missouri	1993	1993	Modernization/ Depreciation Study
Intermountain Gas Co.	Intermountain Gas Co.	1992	1993	Depreciation Study
Pacific Telecom, Inc.	Alascom, Inc.	1992	1993	Depreciation Study
	Telephone Utilities of Oregon, Inc.	1991	1992	Depreciation Study
	Telephone Utilities of Washington, Inc.	1991	1992	Depreciation Study
Small Telephone Company Coalition	Oregon Small Telephone Companies	1991	1992	Depreciation Support
United Telephone Systems	United Telephone Co. of Pennsylvania	1991	1992	Instructional Depreciation Study
New York State Division of Equalization and Assessment	Electric, Gas, Water, Telephone, Pipeline,	1991	1992	Useful Lives and Net Salvage

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Year</u>	<u>Study Performed</u>	<u>Year</u>	<u>Activity</u>
	Steam, CATV				Values
Rochester Telephone Company	Enterprise Telephone	1991	1992		Study Review
Indiana Energy	Indiana Gas/Richmond Gas/ Terre Haute Gas	1990	1991		Depreciation Study
American Electric Power	Indiana/Michigan Power Co.	1990	1991		Depreciation Study
Rochester Telephone Company	Rochester Telephone Co.	1990	1991		Study Review
United Telephone Systems	United Telephone Co. of Florida	1990	1991		Instructional Depreciation Study
United Telephone Systems	United Telephone Co. of Oregon	1989	1990		Study Review
Telephone and Data Systems, Inc.	Quincy Telephone Company	1990	1991		Depreciation Study
Telephone and Data Systems, Inc.	Wolverine Telephone Company	1989	1990		Depreciation Study
Indiana Energy	Indiana Gas Company, Inc.	1989	1990		Depreciation Study
Intermountain Gas Co.	Intermountain Gas Co.	1989	1990		Remaining Life/Net Salvage Support
North-West Telephone Company	North-West Telephone Company	1989	1990		Study Review
United Telephone System	United of Texas	1989	1990		Instructional Depreciation Study
	United of Missouri	1989	1990		Instructional Depreciation Study
Milwaukee Water	Milwaukee Water	1989	1990		Depreciation Study
Indiana Natural Gas Corp.	Indiana Natural Gas Corp.	1989	1990		Depreciation Study
Pacific Telecom	Telephone Utilities of the Northland	1989	1990		Depreciation Study
	Telephone Utilities of Alaska	1989	1990		Depreciation Study
	Alascom	1989	1990		Depreciation Study

**Utility Industries
Capital Recovery Activities Client List**

<u>Company</u>	<u>Property</u>	<u>Year</u>	<u>Study Performed</u>	<u>Year</u>	<u>Activity</u>
	Telephone Utilities of Washington, Inc.	1988		1989	Depreciation Study
WICOR	Wisconsin Gas Company	1988		1989	Depreciation Study
ALLTEL	ALLTEL - Kentucky, Inc.	1987		1989	Depreciation Study
	ALLTEL - Ohio, Inc.	1988		1989	Depreciation Study
	Western Reserve Telephone Company	1988		1989	Depreciation Study
Milwaukee Metropolitan Sewer District	Milwaukee Metropolitan Sewer District	1988		1989	Depreciation Study
United Telephone Company	United of Ohio Telephone Company	1988		1989	ELG Support
		1988		1989	ELG Support
United Telecom	U.S. Sprint	1988		1988	Useful Life Study
Pacific Telecom	Telephone Utilities of Oregon	1987		1988	Depreciation Study
	Telephone Utilities of Eastern Oregon	1987		1988	Depreciation Study
	Rose Valley Telephone Company	1987		1988	Depreciation Study
United Telephone	United of Minnesota	1987		1988	Capital Planning Support
Wisconsin Southern Gas	Wisconsin Southern Gas	1987		1988	Depreciation Study
Pacific Telecom	Glacier State Telephone Company	1986		1987	Depreciation Study
	Sitka Telephone Co.	1986		1987	Depreciation Study
	Juneau-Douglas Tel Company	1986		1987	Depreciation Study
Pacific Telecom	Telephone Utilities of Alaska	1986		1987	Depreciation Study
	Alascom	1986		1987	Depreciation Study
Lincoln Telecommunications	Lincoln Telephone and Telegraph Company	1986		1987	Digital Switching Service Life
Northwest Natural Gas	Northwest Natural Gas	1985		1986	Depreciation Study

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Year</u>	<u>Study Performed</u>	<u>Year</u>	<u>Activity</u>
Corporation	Corporation				
ALLTEL	Western Reserve Telephone Company	1984	1985		Depreciation Study
	ALLTEL - Ohio	1984	1985		Depreciation Study
	ALLTEL - Alabama	1984	1985		Depreciation Study
Gulf Telephone Co.	Gulf Telephone Company	1984	1985		Depreciation Study
United Telephone Systems, Inc.	United of Iowa	1984	1985		Depreciation Study
	United of Arkansas	1984	1985		Depreciation Study
Pacific Telecom	Telephone Utilities of Washington	1983	1984		Depreciation Study
	Telephone Utilities of Eastern Oregon	1983	1984		Depreciation Study
Pacific Telecom	Telephone Utilities of Oregon	1983	1984		Depreciation Study
	Northwestern Telephone Systems, Inc., Oregon	1983	1984		Depreciation Study
	Rose Valley Telephone Company	1983	1984		Depreciation Study
United Telecommunications	All United Telephone Companies	1983	1984		Capital Recovery Strategy
Lincoln Telecommunications	Lincoln Telephone & Telegraph Company	1983	1984		Depreciation Study
ALLTEL	ALLTEL - Mississippi	1982	1983		Depreciation Study
	ALLTEL - Michigan	1982	1983		Depreciation Study
North Carolina Natural Gas Corp.	North Carolina Natural Gas Corporation	1982	1983		Depreciation Study
Mid Continent Telephone (Currently ALLTEL)	Western Reserve Telephone	1982	1983		Depreciation Study
	Mid Ohio Telephone	1982	1982		Depreciation Study
	Florence Telephone Company	1980	1981		Depreciation Study
	Leeds Telephone Co.	1980	1981		Depreciation Study

Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
	Elmore Coosa Tel Company	1980	1981	Depreciation Study
	Brookville Telephone Company	1980	1981	Depreciation Study
	Mid-Pennsylvania Telegraph	1980	1981	Depreciation Study
Telephone Utilities (Currently Pacific Telecom)	Telephone Utilities of Oregon	1979	1980	Depreciation Study
	Telephone Utilities of Eastern Oregon	1979	1980	Depreciation Study
	Northwestern Telephone Systems, Inc.-Oregon	1979	1980	Depreciation Study
	Rose Valley Telephone Company	1979	1980	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1979	1980	Depreciation Study
Telephone Utilities	Telephone Utilities of Washington	1978	1979	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1978	1979	Depreciation Study
Rochester Telephone	Rochester Telephone (Indiana)	1977	1978	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1977	1978	Depreciation Study
Princeton Telephone	Princeton Telephone (Indiana)	1976	1977	Depreciation Study
Northwestern Telephone	Northwestern Telephone (Illinois)	1975	1976	Depreciation Study

Papers and Seminars

- 2011 Training Instructor Depreciation Basics Sessions A & B and Life and Salvage Analysis
Society of Depreciation Professionals 25th Annual Meeting
Atlanta, GA September 20-22, 2011
- 2010 Will the Real Cost Approach Please Stand Up?
National Association of Property Tax Representatives Transportation, Energy, & Communications (NAPTR-TEC)
Scottsdale, Arizona October 25-27, 2010
- Issues Affecting Assessment of Regulated Industries
Institute for Professionals in Taxation (IPT) Property Tax Symposium
Austin, Texas October 31 – November 3, 2010
- 2009 (Valuing) Intangibles
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 28, 2009
- Fair Value Accounting (Appraisal Panelist)
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 29, 2009
- 2008 Valuation Issues Valuation of Assets and the Impact of Depreciation
Society of Depreciation Professionals Annual Meeting
Greenville, SC September 21-26, 2008
- Obsolescence in the Long-Distance and Local Transport Networks
Technology Futures Inc. Asset Valuation Conference
Austin Texas February 8, 2008
- 2007 Communications Industry Issues
National Association of Property Tax Representative – Transportation, Energy, & Communications
New Orleans, LA October 30, 2007
- 2006 Appraisal Procedures & Issues in a Changing communications Industry
Florida Chapter International Association of Assessing Officers' Tangible Personal Property Conference
Ocala, Florida January 12, 2006
- Valuation of Intangibles
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 25, 2006
- SDP 20 years of History and Beyond
Society of Depreciation Professionals 20th Annual Meeting
Long Beach, CA September 18, 2006
- 2005 Valuation in a World with Asset Impairments
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas August 1, 2005

Papers and Seminars

- 2004 Depreciation in the Valuation of Assets
Society of Depreciation Professionals' Eighteenth Annual Meeting
Washington, D.C., September 13, 2004
- 2003 Cost Approach and the Use of Appraisal Guidelines
Institute for Professionals in Taxation – Property Tax Symposium
Fort Lauderdale, FL, September 17, 2003
- Cost Approach – Obsolescence and Depreciation
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, July 28, 2003
- 2000 Appraisal Issues Associated with Technological Change in the Wireline Telecommunications Industry
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, July 31, 2000
- The Impact of Advancing Technology and the Changing Regulatory Environment on Obsolescence
Calculations for Ad Valorem Valuation Purposes
Journal of Property Tax Management, Spring 2000
- 1996 How to Develop a Reproduction/Replacement Cost New Less Depreciation Approach to Value
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, August 4, 1996
- 1995 Valuation Method, Techniques and Strategies (How to Quantify Stranded Investment) (Market, Income,
& Cost Approach
AGA Depreciation Committee Meeting
Denver, Colorado, August 6-9, 1995, jointly presented with Earl Robinson of AUS Consultants
- 1994 Integrating Future Expectations for the Telephone Industry into Historical Depreciation Analysis
United States Telephone Association (USTA's 1994 Capital Recovery Seminar)
Scottsdale, Arizona, September 12-13, 1994
- 1994 Capital Recovery: United States versus Canada
Canadian Telephone Industry's Annual Capital Recovery Seminar
Edmonton, Alberta, Canada June 14-15, 1994
- 1990 Capital Recovery: Methods, Terminology, Procedures, and Record Keeping
United States Telephone Association (USTA)'s
1990 Non-FCC Subject and Small Company Capital Recovery Seminar
Minneapolis, Minnesota April 10_11, 1990
- Integration of Technology Forecasting Into Historical Life Studies
29th Iowa State Regulatory Conference
Ames, Iowa May 15-17, 1990
- The 1990's and the Second Wave of Major Plant Retirements in the Communications Industry
NARUC's Seventh Biennial Information Conference
Columbus, Ohio September 12-14, 1990

Papers and Seminars

How Do We Incorporate Change into the Study Filing Procedures?
USTA's 1990 Capital Recovery Seminar
Chicago, Illinois October 16_17, 1990

1989 Plant Modernization: Capital Planning and Capital Recovery
Midwest Utilities Conference
Chicago, Illinois September 11_14, 1989

Price Indexes Today: Procedures, Uses, and Misuses
Society of Depreciation Professionals' Third Annual Meeting
New Orleans, Louisiana December 6_7, 1989

1988 Plant Modernization: Capital Planning and Capital Recovery
National Association of Regulatory Utility Commissioners (NARUC)'s
Sixth Biennial Regulatory Information Conference
Columbus, Ohio September 14_16, 1988

Papers and Seminars

- 1997 Sprint Corporation - West Finance Center
Overland Park, Kansas, August 1997
- 1997 Rochester Telephone Corporation
Rochester, New York, April 1997
- 1996 Sprint-Florida-Vista United Telecommunications
Altamonte Springs, Florida August 27-29, 1996
- 1994 Saskatchewan Telecommunications
Regina, Saskatchewan, Canada, June 1994
- 1994 AUS Consultants/Leroy J. Murphy and Associates 1994 Capital Recovery Seminar
May 1994
- 1993 Manitoba Telephone System, Winnipeg, Manitoba, December 1993
- 1993 Society of Depreciation Professionals Annual Meeting
Charleston, South Carolina September 30, 1993
- 1993 SPRINT - Local Telephone Division
Atlanta, Georgia August 11-12, 1993
- 1993 AUS Consultants/Leroy J. Murphy and Associates 1993 Capital Recovery Seminar
Chicago, Illinois May 11 - 13, 1993
- 1993 Canadian Telephone Capital Recovery Seminar
Halifax, Nova Scotia April 20 - 22, 1993
- 1993 United Telephone, Midwest Group
Overland Park, Kansas January 20, 1993
- 1992 BellSouth Corporation
Birmingham, Alabama November 23, 1992
- 1992 Sprint - Local Telephone Division
Kansas City, Kansas November 18 - 20, 1992
- 1992 Society of Depreciation Professionals Annual Meeting
San Antonio, Texas September 9 - 10, 1992
- 1992 AUS Consultants/Leroy J. Murphy and Associates 1992 Capital Recovery Seminar
Chicago, Illinois October 6 - 8, 1992
- 1991 Society of Depreciation Professionals Annual Meeting
Nashville, Tennessee November 20-22, 1991
- 1991 ALLTEL Corporation Microcomputer Depreciation Studies System Training
Hudson, Ohio October 14-16, 1991

Capital Recovery Training

- 2016 Society of Depreciation Professionals
Annual Training
Charleston, South Carolina, September 18-23, 2016
- 2015 Society of Depreciation Professionals
Annual Training
Austin Texas September 2015
- 2014 Society of Depreciation Professionals
Annual Training
New Orleans, Louisiana September 2014
- 2013 Society of Depreciation Professionals
Annual Training
Salt Lake City, Utah September 2013
- 2012 Society of Depreciation Professionals
Annual Training
Minneapolis, Minnesota, September 16-18, 2012
- 1991 United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation
Studies System Training
Kansas City, Kansas September 23-25, 1991
- 1991 AUS Consultants/Leroy J. Murphy and Associates 1991 Capital Recovery Seminar
Lake Geneva, Wisconsin September 17-19, 1991
- 1991 Rochester Telephone Corporation, Capital Recovery/Microcomputer Depreciation Studies
System Training, Rochester, New York September 3-7, 1991
- 1991 Ameritech Services, Microcomputer Depreciation Studies System Training
Chicago, Illinois May 16-17, 1991
- 1991 AUS Consultants/Leroy J. Murphy and Associates 1991 Capital Recovery Seminar
Washington, D.C. April 9_11, 1991
- 1990 United Telecommunications, Inc., Capital Recovery Seminar
Overland Park, Kansas December 1990
- 1990 AUS Consultants/Leroy J. Murphy and Associates 1990 Capital Recovery Seminar
Chicago, Illinois September 24_27, 1990
- 1990 AUS Consultants/Leroy J. Murphy and Associates 1990 Capital Recovery Seminar
Chicago, Illinois January 29-February 1, 1990
- 1990 United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies
System Training, Chicago, Illinois July 1990
- 1989 United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies
System Training, Chicago, Illinois July 1989

Capital Recovery Training

- 1989 AUS Consultants/Leroy J. Murphy and Associates 1989 Capital Recovery Seminar
Chicago, Illinois March 6_9, 1989
- 1988 AUS Consultants/Leroy J. Murphy and Associates 1988 Capital Recovery Seminar
Chicago, Illinois July 25_28, 1988
- 1988 United Telecommunications, Inc., Microcomputer Depreciation Studies System Training
Kansas City, Kansas January 1988