COMMONWEALTH OF PENNSYLVANIA

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January 7, 2020

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Pennsylvania Public Utility Commission
v.
Twin Lakes Utilities, Inc.
Docket No. R-2019-3010958

Dear Secretary Chiavetta:

Attached for electronic filing please find the Office of Consumer Advocate's Main Brief in the above-referenced proceeding.

Copies have been served per the attached Certificate of Service.

Respectfully submitted,

Christine Maloni Hoover

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Enclosure:
cc: The Honorable Marta Guhl, ALJ
Certificate of Service
*282040

CERTIFICATE OF SERVICE

Re:	Pennsylvania Public Utility Commission	:	
	v.	:	Docket No. R-2019-3010958
	Twin Lakes Utilities, Inc.	:	

I hereby certify that I have this day served a true copy of the following documents, the Office of Consumer Advocate's Main Brief, upon parties of record in this proceeding in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant), in the manner and upon the persons listed below:

Dated this 7th day of January 2020.

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Dated: January 7, 2020
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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Pennsylvania Public Utility Commission	:	
	:	
v.	:	Docket No. R-2019-3010958
	:	
Twin Lakes Utilities, Inc.	:	

MAIN BRIEF
OF THE
OFFICE OF CONSUMER ADVOCATE

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Dated: January 7, 2020

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I. INTRODUCTION

A. Procedural History

Twin Lakes Utilities, Inc. (Twin Lakes or the Company) is a subsidiary of Middlesex Water Company and serves approximately 114 residential customers in Sagamore Estates, a community located within Shohola Township in Pike County, Pennsylvania. On July 23, 2019, Twin Lakes filed Supplement No. 8 to Tariff Water-Pa. P.U.C. No. 4 (Supplement No. 8) with the Pennsylvania Public Utility Commission (Commission) to become effective September 19, 2019. Through Supplement No. 8, Twin Lakes proposed to increase its total annual operating revenues for water service by approximately $211,793, or 158.63%. Supplement No. 8 would achieve this total increase in part by increasing the residential monthly customer charge from $60.41 to $158.61, or 162%. If the proposed increase is approved in its entirety, the average monthly bill for a residential water customer using 2,400 gallons per month would increase from $95.23 to $250.03, or $154.80.

On July 29, 2019, the Commission's Bureau of Investigation and Enforcement (I&E) entered a Notice of Appearance. On July 30, 2019, the Pennsylvania Office of Consumer Advocate (OCA) filed a Formal Complaint, Public Statement, and Notice of Appearance. Several Twin Lakes customers also filed Formal Complaints. On August 29, 2019, the Commission, by operation of law, suspended the effective date of Twin Lakes' proposed Supplement No. 8 until April 19, 2020 to investigate the lawfulness, justness, and reasonableness of the Company's proposed rate increase request. The matter was then referred to Administrative Law Judge Marta Guhl.

A Prehearing Conference was held on Monday, September 23, 2019, during which the parties established modified rules for discovery as well as a procedural schedule, among other

things. On September 27, 2019, Twin Lakes filed Twin Lakes Statement No. 1, the Direct Testimony of Mr. Bruce O'Connor; Twin Lakes Statement No. 2, the Direct Testimony of Ms. Michele Tilley; and Twin Lakes Statement No. 3, the Direct Testimony of Mr. Robert Fullagar. Two Public Input Hearings were held on October 17, 2019 at the Shohola Township Building where Twin Lakes' customers testified about the proposed rate increase and the quality of their water service. On November 1, 2019, the OCA filed OCA Statement 1, the Direct Testimony of Ms. Stacy Sherwood[1]; OCA Statement 2, the Direct Testimony of Mr. Aaron Rothschild[2]; and OCA Statement 3, the Direct Testimony of Mr. Terry Fought[3]. On that same date, I&E filed the direct testimony of Messrs. Zalesky, Henkel, and Sakaya. On November 20, 2019, rebuttal testimony was filed by Company witnesses Tilley and Fullagar. On December 10, 2019, surrebuttal testimony was filed by OCA witnesses Sherwood, OCA St. 1SR and Fought, OCA St. 3 SR. On December 17, 2019, the Company, I&E, and OCA filed a Motion for Admission of Testimony and Exhibits (Motion), and a Stipulation for Admission of Testimony and Exhibits (Stipulation and Appendix A and Appendix B). Appendix B was a stipulation regarding lead

[1] Ms. Sherwood is an Economist with Exeter Associates, Inc. At Exeter, Ms. Sherwood develops utility service assessments, provides bill and rate analysis, and assesses and evaluates the effectiveness of energy conservation and efficiency programs. Prior to joining Exeter, Ms. Sherwood served as a Regulatory Economist with the Maryland Public Service Commission (PSC). At the PSC, she performed analysis on the EmPOWER Maryland energy efficiency and demand response programs, the Exelon Customer Investment Fund, and served as lead analyst for the EmPOWER Maryland limited income programs.

[2] Mr. Rothschild is a financial consultant specializing in cost of capital issues in utility regulation. He has 22 years of experience providing utility financial analysis. Mr. Rothschild has applied his expertise and testified in numerous proceedings before the Pennsylvania Public Utility Commission, over twenty other state public service commissions, and the Federal Energy Regulatory Commission.

[3] Mr. Fought has been a licensed engineer in Pennsylvania since 1975, is licensed in New Jersey and Virgina and has been a consulting engineer since 1983. He received his Bachelor of Civil Engineering from Cleveland State University. He has been involved in the design, construction and operation of water and wastewater facilities for over 40 years. He has also served as a consultant to the OCA for water and wastewater rate cases, complaint proceedings, investigations, and applications since 1984. Mr. Fought's background and qualifications are attached as Appendix A to OCA Statement 3.

testing, actions, and commitments that arose during the proceeding. On December 18, 2019, ALJ Guhl granted the Motion and approved the Stipulations. This Main Brief is submitted in accordance with the December 23, 2019 Briefing Order issued by the ALJ.

Utility service is a public necessity and is regulated in part for that reason. Rates for essential services, such as the provision of safe drinking water for household purposes, should be affordable for utility consumers. See 66 Pa. C.S. § 1501. This holds especially true in proceedings involving water service where customer demand is largely inelastic because, unlike other utility products, water is an essential requirement for public health, safety, and sanitation. For the reasons below, the OCA submits that Twin Lakes is not entitled to the full rate increase the Company has requested and respectfully requests this Commission adopt the OCA's adjustments and recommendations as set forth herein.

B. Burden of Proof

Twin Lakes bears the burden of proof to establish the justness and reasonableness of every element of its requested rate increase. As set forth in Section 315(a) of the Public Utility Code (Code):

> Reasonableness of rates – In any proceeding upon the motion of the Commission, involving any proposed or existing rate of any public utility, or in any proceedings upon the complaint involving any proposed increase in rates, the burden of proof to show that the rate involved is just and reasonable shall be upon the public utility.

66 Pa. C.S. § 315(a). The Commonwealth Court has stated:

> Section 315(a) of the Public Utility Code, 66 Pa. C.S. § 315(a), places the burden of proving the justness and reasonableness of a proposed rate hike squarely on the utility. It is well-established that the evidence adduced by a utility to meet this burden must be substantial.

Lower Frederick Twp. v. Pa. P.U.C., 48 Pa. Commw. 222, 226-27, 409 A.2d 505, 507 (1980) (citations omitted); see Brockway Glass v. Pa. P.U.C., 63 Pa. Commw. 238, 437 A.2d 1067 (1981).

The Supreme Court of Pennsylvania has stated that the party with the burden of proof has the formidable task to show that the Commission may lawfully adopt its position. Even where a party has established a prima facie case, the party with the burden of proof must establish that "the elements of that cause of action are proven with substantial evidence which enables the party asserting the cause of action to prevail, precluding all reasonable inferences to the contrary." Burleson v. Pa. P.U.C., 461 A.2d 1234, 1236 (Pa. 1983). Furthermore, it is well-established that the "degree of proof before administrative tribunals as well as before most civil proceedings is satisfied by establishing a preponderance of the evidence." Lansberry v. Pa. P.U.C., 578 A.2d 600, 602 (Pa. Commw. 1990). Additionally, the evidence must be substantial and legally credible, and cannot be mere "suspicion" or a "scintilla" of evidence. Id. Thus, a utility has an affirmative burden to establish the justness and reasonableness of every component of its rate request.

The OCA notes that Pennsylvania law is clear that there is no similar burden for a party proposing an adjustment to a utility base rate filing. See, e.g., Berner v. Pa. P.U.C., 382 Pa. 622, 116 A.2d 738 (1955). In Berner, the Supreme Court of Pennsylvania stated:

> [T]he appellants did not have the burden of proving that the plant additions were improper, unnecessary or too costly; on the contrary, that burden is, by statute, on the utility to demonstrate the reasonable necessity and cost of the installations and that is the burden which the utility patently failed to carry.

Berner, 382 Pa. at 631, 116 A.2d at 744. The Commission recognizes this standard in its rate determinations. Pa. P.U.C. v. Equitable Gas Co., 57 Pa. P.U.C. 423, 471 (1983). See University of Pennsylvania v. Pa. P.U.C., 86 Pa. Commw. 410, 485 A.2d 1217 (1984); Pa. P.U.C. v. PPL Elec. Util. Corp., 237 PUR4th 419 (Pa. P.U.C. 2004). Thus, the burden is not on the OCA, or any challenger, to prove that Twin Lakes' proposed rates are unjust, unreasonable, or not in the public interest. Instead, Pennsylvania law requires only that the OCA show how Twin Lakes failed to meet its burden of proof. While subtle, this critical distinction shows that parties opposing a utility

in a rate proceeding need only to shift the burden of going forward to prevail. The burden of proof will not shift to an intervener that is challenging the requested rate increase. Pa. P.U.C. v City of Bethlehem, 2011 Pa. PUC LEXIS 190, *11 (2011).

In conclusion, Twin Lakes must affirmatively demonstrate the reasonableness of every element of its claims and demonstrate that its proposed rates are just, reasonable, and in the public interest. The OCA will show that Twin Lakes has failed to satisfy its statutory burden in the manner set forth below.

II. SUMMARY OF ARGUMENT

The OCA recommends an increase of no more than $98,688 in annual revenues rather than the increase of $211,793 in revenues the Company has requested. See OCA Table I.

As discussed herein, the OCA proposes adjustments pertaining to the Company's proposed cost of equity, rate base including an acquisition adjustment, cash working capital, and net operating income claims, including management fees, legal fees, maintenance supplies expense, purchased power and chemical expense, bade debt expense, rate case expense and state and federal taxes. These adjustments result in additional annual revenues of $153,494. However, due to record evidence showing that Twin Lakes has unacceptably high unaccounted for water, a well that has not been replaced and is not providing service, a remaining well that is in danger of being overpumped, and has exceeded the lead action level, the OCA submits that Twin Lakes is not providing safe, adequate, and reliable service in accordance with the requirements of the Public Utility Code. Therefore, the OCA recommends that the return on equity be set at zero, which results in a recommended additional annual revenue requirement of $98,688 and that the Commission initiate a Section 529 proceeding. The OCA respectfully submits this Main Brief in support of the individual adjustments that underlie the recommended revenue increase. Based on the evidence the Company has provided to support its revenue claim and the applicable law, it is clear that the Company's revenues should increase by no more than $98,688.

The Tables reflecting the OCA's adjustments and a complete set of schedules supporting the OCA's recommendation are attached to this Brief as Appendix A.

III. RATE BASE

A. Plant In Service

The OCA did not propose any adjustments to plant in service.

B. Depreciation Reserve

The OCA did not propose any adjustments to depreciation reserve.

C. Additions to Rate Base - Acquisition Adjustment

Acquisition adjustments are an exception to the use of depreciated original cost used to develop rate base. For water and wastewater acquisitions, a positive acquisition adjustment, when the purchase price exceeds the depreciated original cost, is permitted only when the criteria in Section 1327 are met. 66 Pa. C.S. § 1327. Whether an acquisition adjustment meets the statutory criteria should be determined in the first base rate case following proposed acquisition. See 52 Pa. Code § 69.721 ("After the approval of an acquisition . . . an acquiring utility may request the inclusion of the value of the used and useful assets of the acquired system in its rate base. A request will be considered during the acquiring utility's next filed rate case proceeding."). An acquisition adjustment should thus not be included as part of a utility's claimed rate base unless the acquisition adjustment is approved by the Commission in the base rate proceeding immediately following the approved acquisition.

In this case, Twin Lakes included as part of its proposed rate base a claim of $54,406 for an acquisition adjustment. OCA St. 1 at 4. The Company, however, included this same acquisition adjustment claim previously in its 2011 base rate proceeding. Id.; see Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No. R-2011-2246415. The Commission approved a Settlement that did not include a provision for the acquisition adjustment claimed by Twin Lakes. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No. R-2011-2246415 Order (March 1, 2012). Additionally, the

Company can provide "no docket number or order available specifying approval of the acquisition adjustment." OCA St. 1 at 4 (quoting Twin Lakes' response to OCA-I-6). Moreover, the Company admitted that it cannot provide any specific Commission approval of the acquisition adjustment. OCA St. 1SR at 3.

The Company's proposed acquisition adjustment should be denied. The Company's proposed acquisition adjustment has already been claimed in the base rate proceeding immediately following the acquisition. The Company can point to no order from the Commission that approves the proposed acquisition adjustment. Allowing the Company's proposed acquisition adjustment in this proceeding, eight years after the Company first claimed the adjustment, would contradict the requirements of 66 Pa. C.S. Section 1327 and 52 Pa. Code § 69.721.[4]

Ms. Sherwood adjusted the Company's rate base claim to remove the $54,406 acquisition premium from rate base. Table II; Sch. SLS-3. The Company's proposed acquisition adjustment has already been claimed in the first rate case subsequent to the acquisition, and the Company can provide no order or docket number in which the proposed acquisition adjustment has previously been approved by the Commission. Additionally, even if the Company had an approved acquisition adjustment, the Company failed to properly amortize its claimed adjustment over time. The OCA therefore submits that the Company's proposed acquisition adjustment should be denied in its entirety and Ms. Sherwood's $54,406 adjustment to remove it from rate base should be adopted. Table II; Schedule SLS-3 C.

[4]Assuming *arguendo* that the Company's proposed acquisition adjustment was previously approved by the Commission, the acquisition adjustment should have been amortized over time. 66 Pa. C.S. § 1327(e). In this case the Company is claiming an acquisition adjustment of $54,406. The typical period of time to amortize an acquisition adjustment is twenty years, and the proposed acquisition occurred on November 3, 2009. OCA St. 1 at 4. The proposed acquisition adjustment in this case should thus have been amortized over the last ten years. If amortized correctly, the proposed acquisition adjustment should be $9,840 in this proceeding. OCA St. 1 at 4. However, the Company's acquisition premium claim in this case is higher than it was in its 2011 rate case. OCA St. 1 at 4.

D. Deductions from Rate Base - Cash Working Capital

In response to OCA discovery, Twin Lakes explained that the Company calculates its cash working capital based upon 12.5%, or one-eighth, of its operations and maintenance (O&M) expense. OCA St. 1 at 9. In this case, the Company proposed a cash working capital amount of $17,175. Id. Ms. Sherwood used the same one-eighth method to calculate her cash working capital adjustment based on her proposed level of operation and maintenance expenses (O&M), excluding bad debt expense, depreciation expense, and taxes. OCA St. 1 at 9; Sch. SLS-9. She adjusted cash working capital to$11,885, or an adjustment of $4,879. Table II; Sch. SLS-9.

In rebuttal, the Company disagreed with Ms. Sherwood's removal of bad debt expense and depreciation expense from the cash working capital calculation. Twin Lakes St. No. MLT-2R at 6-9. Ms. Sherwood explained why she excluded those two expense items:

> CWC allows for the company to earn a return on the capital that is required to fund the day-to-day operating costs in advance of receiving revenues. Both bad debt expense and depreciation expense are considered non-cash items, and therefore, should not be included in the calculation of CWC.

OCA St. 1SR at 4. Ms. Sherwood's approach is supported by the recently reissued *A Guide to Utility Ratemaking,* James H. Cawley and Norman J. Kennard, *A Guide to Utility Ratemaking,* 2018 Edition, prepared for the Pennsylvania Public Utilities Commission, © 1983,http://www.puc.pa.gov/General/publications_reports/pdf/Ratemaking_Guide2018.pdf (Guide). She explained that her approach is consistent with the description of the one-eighth method provided in the Guide:

> The *Guide* defines this CWC calculation as the average net lag (45 days) "multiplied by the total operating and maintenance expense, less purchased gas, water, or electric (depending on utility filing type); non-cash items such as depreciation and uncollectibles; and taxes, since the taxes are collected prior to payments being made."

OCA St. 1SR at 4 citing Guide at 123. The OCA's calculation, using the one-eighth method, as shown on Schedule SLS-10 C, is consistent with the Guide and reasonable for ratemaking purposes. The same calculation for the one-eighth method should be adopted once the final level of operation and maintenance expense is known.

E. Conclusion

The Company has not established that its acquisition adjustment claim was approved by the Commission in the first case following acquisition and the acquisition adjustment should not be included in rates, for the reasons set forth above. The OCA's cash working capital calculation is reasonable and appropriate and the same method should be used in calculating the final cash working capital allowance in this proceeding. These adjustments are shown on Table II and the resulting rate base is shown on Table I.

IV. REVENUES

The OCA did not propose any adjustments to present revenues.

V. EXPENSES

A. Management Fee

Twin Lakes claimed $1,824 for management fees allocated to it by Middlesex Water. Twin Lakes Supplement No. 8 Tariff Water Pa. P.U.C. No. 4, Schedule D. Middlesex Water allocates its management fees based on three factors: subsidiary revenues, subsidiary net assets, and Middlesex payroll charge. OCA St. 1, Sch. SLS-4 citing Company response to OCA, Set I, No. 2. In calculating the subsidiary net assets, the Company included its original recommended acquisition adjustment claim. Id. Due to the OCA's recommendation to remove the acquisition adjustment, the factor calculated from the Company's subsidiary net assets needs to be adjusted. As indicated on Schedule SLS-4, OCA witness Stacy Sherwood recalculated the net assets by removing the acquisition adjustment (Schedule SLS-4, lines 1-3). She then averaged the revised subsidiary net asset for Twin Lakes with its other two factors (Schedule SLS-4, lines 8-12), which resulted in a lower management fee allocation factor, adjusted from 0.1874% as proposed by the Company to 0.1834% (Schedules SLS-4, lines 12-13). This lowered the management fee expense by $213, and as a result, the OCA submits that a $213 adjustment of management fee expense is reasonable. Table II; Sch. SLS-4.

B. Legal Expense

The Company claims legal expenses of $1,001, which is 155%, or $608, more than the expense reported for the 12-month period ended March 31, 2018. Twin Lakes Supplement No. 8 to Tariff Water Pa. P.U.C. No. 4, Schedule D; OCA St. 1 at 5. As the majority of the increase in the test year expense is related to outside counsel expenses not experienced in the prior 12-month periods ended 2017 and 2018 and do not appear to be reoccurring, Ms. Sherwood removed the nonrecurring expense to reflect a reasonable, ongoing level of legal expense. The adjustment to

legal expense is $596. Table II; OCA St. 1 at 5; Sch. SLS-5. The Company did not file rebuttal testimony regarding this adjustment.

C. Maintenance Supplies Expense

The Company claims $9,509 in maintenance supplies expense, which is 2,111%, or $9,079, more than the $430 maintenance supplies expense reported for the 12-month period ended March 31, 2018. OCA St. 1 at 6. The company claims the expense is related to two main breaks which were not experienced during the 12-month period ended March 31, 2018. OCA St. 1 at 6. The test year expense is also 2.5 times higher than for the 12-month period ended March 31, 2017. Id. As such, the OCA recommends normalizing the maintenance supplies expense over three years, the 12-month periods ended 2017-2019. Table II; OCA St. 1 at 6. The Company did not file rebuttal testimony regarding this adjustment.

D. Purchased Power and Chemical Expense

The Company claims a purchased power expense of $10,524 and a chemical expense of $3,003. Twin Lakes Supplement No. 8 to Tariff Water Pa. P.U.C. No. 4, Schedule D. As explained below, the OCA recommends that the purchased power expense be adjusted downward by $6,335 and chemical expense be adjusted downward by $1,808 because of the Company's excessive unaccounted for water. See Table II; Sch. SLS-7.

The Commission's policy regarding unaccounted for water states that levels should be kept within reasonable amounts and that the Commission considers levels exceeding 20% to be excessive. 52 Pa. Code § 65.20 (4). OCA witness Terry L. Fought noted that the Company's

UFW data obtained from 2011-2018 Annual Reports shows the following amounts of unaccounted for water[5]:

Year	UFW
2011	82.9%
2012	83.0%
2013	86.3%
2014	86.7%
2015	82.3%
2016	78.4%
2017	78.9%
2018	81.5%

The Company's unaccounted for water was 81.5% in 2018. OCA St. 3 at 7; Exhibit TLF-3. As OCA witness Ms. Sherwood stated, ratepayers pay for the cost of treating and pumping water into the system. OCA St. 1 at 7. Unaccounted for water of 81.5% indicates that customers are paying for water loss that is 61.5% in excess of amounts identified by the Commission to be reasonable. Id. As a result, the OCA submits that an adjustment to purchased power of $6,335 is necessary to remove costs associated with treating unaccounted for water above the levels deemed to be reasonable under the Commission's regulations. Table II; OCA St. 1, Sch. SLS-7. OCA witness Ms. Sherwood also recommends an adjustment to chemical expense of $1,808 for the same reason. Table II; OCA St. 1, Sch. SLS-7.

In rebuttal, Twin Lakes stated that adopting Ms. Sherwood's recommendations related to purchased power and chemical expense would "elevate operational risk to the detriment of Twin Lakes' customer base." Twin Lakes St. RKF-2R at 3. Mr. Fullagar also states that the unaccounted

[5] See OCA St. 3, Exhibit TLF-3.

for water remains high because of poor repair practices by the prior owner. Id. He further states that the Company will continue to experience high levels of unaccounted for water, which in turn requires high levels of purchased power and chemical expense. Id.

In surrebuttal, Ms. Sherwood stated that:

> The method of operation is not considered efficient, which is required under Section 1501, especially as the level of unaccounted-for-water is above the 20 percent level that the Commission deems excessive. Furthermore, ratepayers funding operations that require and/or result in 80 percent of the water being unaccounted for is not reasonable or adequate.

OCA St. 1 SR at 8.

As such, the Company's purchased power expense and chemical expense should be adjusted downward by $6,335 and $1,808, respectively, as indicated in Table II and Schedule SLS-7.

E. Bad Debt Expense

The Company claims a bad debt expense of $19,095 for 2019, representing an increase of $11,712 from the 12-month period ended March 31, 2018. Supplement No. 8 to Water Pa. P.U.C. No. 4, Schedule D. For the reasons below and as reflected in Table II and OCA Schedule SLS-8, the OCA submits that the bad debt expense must be adjusted by $15,034. Table II; OCA Schedule SLS-8.

Twin Lakes filed to increase rates in 2015, effective in 2016, when it experienced an increase in bad debt expense. OCA St. 1 at 8. However, the Company reported a bad debt expense of $2,400 for 2017 and 2018. Id. Therefore, the OCA submits that the bad debt expense should be adjusted to $4,061, or the equivalent of the normalized bad debt expense for 2017 through 2019. Table II; Schedule SLS-8.

In rebuttal, the Company states that it disagrees with Ms. Sherwood's adjustment and that the amount of bad debt expense should be reflective of what the Company will experience during the period the rates will be in effect. Twin Lakes St. MLT-2R at 5. Ms. Tilley states that "it is reasonable to surmise, with all other variables being equal, higher rates would result in a higher level of bad debt expense." Id.

In surrebuttal, Ms. Sherwood states that there can be a correlation between higher rates and an increase in the amount of bad debt expense, but there are other factors that must be considered, including that increased rates may lead to increased efficiency or reduced usage. OCA St. 1SR at 5. Further, Ms. Sherwood notes that Ms. Tilley's assumption that increased rates will lead to increased bad debt expense has not shown to be true based on the Company's historical bad debt expense. Id. The Company's last rate increase went into effect in 2016. Id. The Company's bad debt expense in 2016 and 2017 remained at $2,400 each year, and did not increase to $7,384 until 2019. Id. The level of bad debt expense the Company is now requesting, $19,095, is 259% more than the highest amount it has reported in the last three years. Id. Historically, it is unreasonable to assume that the Company will experience such a high level of bad debt expense if rates are increased.

In Pa. P.U.C v. Pennsylvania Power Company, the Commission agreed with the ALJ's determination that a significant increase in the Company's bad debt expense during the test year was abnormal and that a three-year average of the actual write-off charged to reserve for uncollectible accounts would be more representative of normal operations than indicated by the test year. Pa. P.U.C. v. Pennsylvania Power Company, 1978 Pa. PUC LEXIS 78 *34 (1978). A utility must be able to justify its bad debt expense accurately. See, e.g., Pa. P.U.C., et al. v. City of Bethlehem, 1995 Pa. PUC LEXIS 38 *42 (1995). Twin Lakes is merely assuming that its bad

debt expense will increase because of an increase in rates but it has not justified its recommendation based upon an average of actual write-offs. As the OCA's recommendation is based upon actual write-offs between 2017 and 2019, the OCA's adjustment should be adopted.

Therefore, the Company's bad debt expense should be adjusted from the Company's claim of $19,095 to $4,061 as indicated in Table II and Schedule SLS-8.

F. Rate Case Expense

The Company is requesting a 38.7-month normalization period for rate case expense. Twin Lakes St. MLT-2R at 4. OCA witness Ms. Sherwood recommended a 48.5-month normalization period which is consistent with Commission precedent. As stated by Ms. Sherwood:

> There is Commission precedent to utilize the average period between rate cases to determine the normalization of the rate case expense, as I have done to calculate the normalization period in this case. I maintain my recommendation to utilize a 4-year normalization period for rate case expense.

OCA St. 1SR at 7. The OCA submits that the rate case normalization period should be adjusted to 48.5 months to reflect a period consistent with Commission precedent.

In rebuttal, Twin Lakes witness Ms. Tilley testified that the calculation of the normalization period should include the time between the acquisition of Twin Lakes in November 2009 and the Company's first rate case filing which occurred 19 months later. Id. She stated that including this period in the calculation to determine historical filing frequency would reduce the average time between rate filings to 38.7 months as opposed to the 48.5 months recommended by OCA witness Ms. Sherwood and the 49 months recommended by I&E witness Mr. Zalesky. Id.

The Commission has consistently held that rate case expenses are normal operating expenses, and therefore, normalization should be based on the historical frequency of the utility's rate filings. Popowsky v. Pa. P.U.C., 674 A.2d 1149, 1154 (Pa. Cmwlth. 1996) (Popowsky); Pa.

P.U.C. v. Columbia Water Co., 2009 Pa. PUC LEXIS 1423 (2009); Pa. P.U.C. v. Lancaster Sewer, 2005 Pa. PUC LEXIS 44 (2005); Pa. P.U.C. v. National Fuel Gas Distribution Corp., 84 Pa. PUC 134, 175 (1995); Pa. P.U.C. v. Roaring Creek Water Co., 73 Pa. PUC 373, 400 (1990); Pa. P.U.C. v. West Penn Power Co., 119 PUR4th 110, 149 (Pa. PUC 1990); Pa. P.U.C. v. City of Dubois, Docket No. R-2016-2554150, Order (March 28, 2017) (Petition for Reconsideration denied on this issue). In Popowsky, the Commonwealth Court considered the "time period in between rate filings" in determining the frequency of the utility's rate filings. Popowsky, 674 A.2d at 1154; OCA St. 1SR at 6. The 19-month time period between the acquisition of Twin Lakes and its first rate filing should not be included in the normalization period calculation because it is not a period between rate filings.

The OCA submits that the average period between rate cases should be used, resulting in a 48.5-month normalization period for rate case expense. Table II; Sch. SLS-9. This adjustment is consistent with Commission and Court decisions on this issue and reflects the historic incurrence of base rate case expense.

VI. TAXES

Twin Lakes forecasted $19,119 in federal income taxes and $10,105 in state income taxes. OCA St. 1 at 10. Ms. Sherwood adjusted the federal income tax claim to reflect the level of rate base and expenses that she recommended in her testimony and used the 21% tax rate as claimed by the Company. Id. Her federal tax adjustment reduces the Company's claim by $9,943. Table II; Exh. SLS-10 C.

Ms. Sherwood also reviewed the Company's claim for state taxes and recommended that none of the state income taxes be included in the Company's revenue requirement. OCA St. 1 at 10. She explained that the Company, as of March 31, 2019, has a $72,087 carry-forward net operating loss that will be applied to future state income taxes. Id. Ms. Sherwood noted that net operating losses generated from 1998 onward can be carried forward for up to 20 years. Id. She concluded that "it is unlikely that any state income taxes will be paid by the Company and therefore should not be collected from ratepayers." Id. Ms. Sherwood's adjustment to remove the Company's claim of $10,105 for state taxes should be adopted. Table I; Table II; Exh. SLS-10 C.

The combined adjustment to Income Taxes is a reduction of $20,048 (Table I) reflecting the reduction to federal income taxes for the OCA's rate base and expense adjustments ($9,943) and the reduction to state taxes to reflect the carry-forward net operating loss ($10,105). Table II; Sch. SLS-10 C.

VII. RATE OF RETURN

A. Introduction

Twin Lakes has claimed a rate of return of 9.0%, comprised of a 7.0% cost of debt and an 11.0% cost of equity. The Company proposes to utilize a capital structure of 50% equity and 50% debt. The OCA did not adjust the Company's recommended capital structure and 7.0% cost of debt recommendation. The OCA presented the testimony of Aaron Rothschild[6] to address the appropriate cost of capital for Twin Lakes. For the reasons explained below, the OCA recommends an 8.78% cost of equity instead of the 11.0% claimed by the Company. OCA St. 2 at 3. The OCA submits that these recommendations properly reflect the market-derived cost of capital.[7] The Company did not file rebuttal in opposition to OCA witness Mr. Rothschild's recommendations. Therefore, the Commission should adopt the OCA's rate of return and cost of capital recommendations as provided below, subject to quality of service considerations.

B. The Legal Framework for Determining a Fair Rate of Return

Generally, cost of capital is the basis for determining a fair rate of return. Pa. P.U.C. v. Philadelphia Suburban Water Co., 71 Pa. PUC 593, 623 (1989) (PSWC 1989). The Commission has defined an appropriate rate of return as follows:

> the amount of money a utility earns, over and above operating expenses, depreciation expense and taxes, expressed as a percentage of the legally established net valuation of utility property, the rate base. Included in the 'return' are interest on long-term debt, dividends on preferred stock, and earnings on common stock equity. In other words, the return is the money earned from operations which is available for distribution among the capital. In the case of common stockholders, part of their share may be retained as surplus.

[7] As discussed in Section VIII.A., the OCA recommends that the fair rate of return should include an equity return set at zero to reflect the inadequate service provided by Twin Lakes.

Pa. P.U.C. v. Emporium Water Co., 95 Pa. PUC at 196, 208 PUR4th 502, 507 (2001) (quoting Public Utility Economics, Garfield and Lovejoy, 116 (1964)). Further, "[t]he return authorized must not be confiscatory, and must be based upon the evidence presented." PSWC 1989, 71 Pa. PUC at 623 (citing Pittsburgh v. Pa. P.U.C., 165 Pa. Super. 519, 69 A.2d 844 (1949) (Pittsburgh)).

A public utility with facilities and assets used and useful in the public service is entitled to no more than a reasonable opportunity to earn a fair rate of return on its investment. Pa. P.U.C. v. Roaring Creek Water Co., 87 Pa. PUC 826, 844 (1997) (Roaring Creek 1997). The United States Supreme Court established the standard with which to evaluate fairness of rate of return in Bluefield Waterworks & Improvement Co. v. Public Service Comm'n of West Virginia, 262 U.S. 679 (1923) (Bluefield), stating that:

> The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management. . .to raise the money necessary for the proper discharge of public duties.

Bluefield at 693. The Court also said that allowed rates of return should reflect the following:

> [A] return on the value of the [utility's] property which it employs for the convenience of the public equal to that. . .being made at the same time… on investments in other business undertakings which are attended by corresponding risks and uncertainties.

Bluefield at 692. The Court subsequently reviewed the issue of fairness of rate of return in Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944) (Hope). In Hope, the Court held that a fair rate of return "should be commensurate with returns on investments in other enterprises having corresponding risks" while being sufficient "to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and attract capital." Hope at 603. The Court noted that "[t]he rate-making process under the Act, *i.e.*, the fixing of 'just and

reasonable' rates, involves a balancing of the investor and consumer interests . . . and does not insure that the business shall produce revenues." Id. More recently, the Court stated that the consumers are obliged to rely upon regulatory commissions to protect them from excessive rates and charges. See Permian Basin Area Rate Cases, 390 U.S. 747, 794-95 (1968) (citing Atlantic Refining Co. v. Public Service Comm'n, 360 U.S. 378, 388 (1959)).

In reviewing a utility's rate increase request, as will be discussed in greater detail below, the Pennsylvania Public Utility Commission must consider the efficiency, effectiveness, and adequacy of service provided by the utility. 66 Pa. C.S. § 523(a). The Commission has recognized the connection between rates and service, stating:

> It is our opinion that in exchange for the utility's provision of safe, adequate, and reasonable service, the ratepayers are obligated to pay rates which cover the cost of service which includes reasonable operation and maintenance expenses, depreciation, taxes and a fair rate of return to the utility's investors. Thus, as the OCA contends, a quid pro quo relationship exists between the utility and its ratepayers.

PG&W 1986, 61 Pa. PUC at 415-16.

C. Capital Structure

Capital structure is comprised of the type and percentages of capital supplied by investors. Debt and equity are the two types of capital used by utilities. The Company recommends a 50% debt and 50% equity capital structure based upon a pro forma capital structure which the OCA accepts for the reasons stated below. Twin Lakes St. No. 2 at 7; OCA St. 2 at 9.

The Company's proposed capital structure is reasonable because it is similar to the capital structure ratios used by other water utility companies and its parent, Middlesex. OCA St. 2 at 8. On average, the Water Proxy Group companies contain 49.3% common equity, while Middlesex has 54.2%. Id. As the Company's proposed capital structure is similar to both the Water Proxy

Group and its parents' capital structure, the OCA accepts its 50% debt and 50% equity recommendation.

D. Cost of Debt

The OCA did not adjust Twin Lakes' 7.0% cost of debt recommendation; however, the OCA has concerns that this cost of debt is too high. OCA St. 2 at 9. Twin Lakes' parent, Middlesex, has a cost of debt of 4.2%, significantly lower than the 7.0% Twin Lakes is requesting. Id. at 9. Further, Twin Lakes is currently in the process of applying for a PENNVEST loan which is expected to significantly reduce its cost of debt in the future. Id. The OCA is willing to accept Twin Lakes' 7.0% cost of debt at this time because of the Company's difficulty in securing credit arrangements with financial institutions as a stand-alone entity. Twin Lakes St. No. 2 at 5. In the future, however, Twin Lakes' cost of debt should be set at Middlesex's 4.2% cost of debt if the Company is unable to demonstrate a good faith effort to obtain lower-cost debt financing. OCA. St. 2 at 2.

E. Cost of Equity

1. Introduction

Twin Lakes witness Ms. Tilley states that her cost of equity recommendation of 11.0% is "a fair and reasonable expected return to help Middlesex maintain any continued interest in making ongoing debt or equity investments in Twin Lakes." Twin Lakes St. No. 2 at 7; OCA St. 2 at 46. She further states that Middlesex cannot commit to providing debt and equity capital to Twin Lakes "without certainty" that rates will enable a reasonable return on equity. Twin Lakes St. No. 2 at 5; OCA St. 2 at 46-47.

Ms. Tilley's recommendation is misguided for the following reasons. First, rates set at 11.0% cost of equity would overcharge consumers because it is a higher return than demanded by

investors as indicated by capital market data. OCA St. 2 at 47. Second, utility ratemaking principles do not require providing utilities with certainty in returns. Id. Instead, utilities are entitled to earn a return commensurate with returns an investor would be expected to earn on investments with similar levels of risk. Id. Third, negative earnings do not necessarily entitle Twin Lakes to a higher rate of return. Id.; Hope, 320 U.S. 591 at 603 ("regulation does not insure that the business shall produce net revenues."). Additionally, Value Line publishes market-based returns relevant to this proceeding. Id. Value Line projects that investors will actually earn 2.2% on their Water Utility Investments, not the 11% claimed by Ms. Tilley. Id.

As opposed to 11.0%, the OCA recommends an 8.78% cost of equity based on the Discounted Cash Flow Model (DCF), including a Constant Growth and a Non-Constant Growth method applied to the Water Proxy Group using data available through August 31, 2019. OCA St. 2 at 2. A Capital Asset Pricing Model (CAPM) was used as a check by OCA witness Rothschild on the reasonableness of the DCF indicated results. Id. OCA witness Rothschild determined that the cost of equity for the average company in the Water Proxy Group is 8.78%. Id. at 3. This is towards the high-end of the range of his Constant Growth and Non-Constant Growth DCF results, which are between 6.38% and 9.13%. Id.

2. The Commission Should Adopt the 8.78% Equity Cost Rate Proposed by the OCA, Subject to Quality of Service Discussion Regarding Inadequate Service.

The Pennsylvania Public Utility Commission relies primarily on the use of the DCF analysis. The Commission has relied on the DCF approach for setting returns on equity for many years. See, e.g., Pa. P.U.C. v. City of Dubois, Docket No. R-2016-2554150, Order (March 28, 2017); Pa. P.U.C. v. UGI Utilities, Docket No. R-2017-2640058, Order (October 25, 2018); Pa. P.U.C. v. City of Lancaster – Bureau of Water, 2011 Pa. PUC LEXIS 1685 (2011); Pa. P.U.C. v.

Emporium Water Co., 2008 Pa. PUC LEXIS 2076 (2006); Pa. P.U.C. v. Emporium Water Co., 95 Pa. PUC 191, 201, 208 PUR4th 502, 512 (2001) (EWC 2001); Pa. P.U.C. v. York Water Co., 75 Pa. PUC 134, 156-69 (1991); Pa. P.U.C. v. Philadelphia Suburban Water Co., 71 Pa. PUC 593, 631-32 (1989); Pa. P.U.C. v. Pennsylvania-American Water Co., 71 Pa. PUC 210, 279-82 (1989); Pa. P.U.C. v. The Peoples Natural Gas Co., 69 Pa. PUC 1, 167-68 (1989); Pa. P.U.C. v. Pennsylvania Power, 67 Pa. PUC 91, 164, 93 PUR4th 189, 266 (1988) (Penn Power 1988); Pa. P.U.C. v. National Fuel Gas Distribution Corp., 67 Pa. PUC 264, 332 (1988). Moreover, the Commission has preferred the DCF approach to several other methods. Pa. P.U.C. v. Roaring Creek Water Co., 81 Pa. PUC 285, 150 PUR4th 449 (1994) (Roaring Creek 1994). Concerning the DCF method, the Commission has stated:

> In considering the issues and arguments raised regarding the appropriate return on common equity for RCW, we note the following. We have, in recent years, relied primarily on the DCF methodology in arriving at our authorized return on common equity. As correctly observed by the ALJ, we rejected the use of the risk premium and the CAPM methods in the company's last rate case at Roaring Creek 1994, supra, as well as in Pennsylvania Power Company, supra. There is no evidence of record in the proceeding before us, which convinces us that such methodologies should be used in this proceeding. Accordingly, we will continue to reply primarily on the DCF methodology and informed judgment.

Pa. P.U.C. v. Roaring Creek Water Co., 84 Pa. PUC 438, 462 (1995). OCA witness Mr. Rothschild's DCF evaluation, which is consistent with the Commission's approach for determining cost of capital, shows a cost of capital between 6.38% and 9.13%. OCA St. 2 at 3. Mr. Rothschild used the constant growth form of the DCF model. Id. at 24. The constant growth form of the DCF model can be used in determining the cost of equity when investors can reasonably expect that the growth of retained earnings and dividends will be constant. Id. The model is described by this equation: $k=D/P + g$, where:

k=cost of equity;

D=Dividend

P=Market price of stock at time of the analysis.

And where:

g=growth rate, where g=br + sy;

b=the earnings retention rate

r=return on common equity investment (referred to below as "book equity");

y=the fraction of funds raised by the sale of stock that increases the book value of the existing shareholders' common equity; and

s=the rate of continuous new stock financing.

The constant growth model is therefore correctly recognized to be:

k=D/P + (br + sy)

Id. The cost of equity demanded by investors is the sum of two factors, dividend yield and growth (dividends and stock price). Id. at 25. The dividend yield is calculated based on current dividend payments, the growth of which indicates what future dividends and stock price will be. Id.

Mr. Rothschild obtained the values to input into the constant growth form of the DCF method by using the dividend expected over the next year. OCA St. 2 at 28. A reasonable way to estimate next year's dividend rate is to increase the quarterly dividend rate by ½ of the current actual quarterly dividend rate, which provides an appropriate approximation of the rate that would be obtained if the full prior year's dividend were escalated by the entire growth rate. Id. Mr. Rothschild obtained the stock Price, "P", from the closing prices of the stocks on August 31, 2019. Id. He also calculated the average stock price for the 12 months ending August 31, 2019 by averaging the high and low stock prices for the year. Id. at 29.

Mr. Rothschild based the future expected return on equity, "r", on the average return on book equity expected by Value Line, adjusted in consideration of recent returns. Id. He also made

a computation based on a review of both the earned return on equity consistent with analysts' consensus earnings growth rate expectation and on the actual earned returns on equity. Id. In a stable industry such as public utilities, investors will typically look at actual earned returns on equity as one indication of what can be expected for future earned returns on book equity. See OCA St. 2, Schedule ALR 4, page 1.

In addition to growth caused by retention of earnings, utility companies also experience growth through sale of new common stock. OCA St. 2 at 29. Mr. Rothschild quantified this growth by multiplying the amount that the actual market-to-book ratio exceeds 1.0 by the compound annual growth rate of stock that Value Line forecasts, the results of which are shown on Schedule ALR 4, page 1. Pure financial theory focuses on results from the most current price of stock because investors cannot purchase stock at historical prices. Id. at 30. As using a single price could lead to distortion, Mr. Rothschild has presented both so that the Commission can apply the approach it deems appropriate. Schedule ALR 2 shows the DCF result, applied to the Water Proxy Group companies, based on stock prices measured at a point in time and at an average. OCA St. 2, Schedule ALR 2.

Mr. Rothschild states that the appropriate value for "r" is the value anticipated by investors to be maintained on average in the future. Id. at 30. Footnote [C] of Schedule ALR 4, page 1A and B shows that the average future return on equity forecast by Value Line for the Water Proxy Group for 2019-2022-2024 is 13.00%. It further shows that the future expected return on equity derived from the Zacks consenus forecast is 10.71%, and that the actual returns on equity earned on average by the Water Proxy Group companies are 10.57% in 2016, 10.59% in 2017 and 10.50% in 2018. Based on the combination of the forecast return on equity derived from the Zacks

consensus, recent historical actual earned returns and Value Line's forecast, the DCF growth computation using an 11.50% value of "r" was made. OCA St. 2 at 30-31.

The result of the DCF analysis as outlined above is a cost of equity range between 8.42% and 9.13% for the Water Proxy Group. Id. at 31. As these results use analysts' forecasts to derive sustainable growth, in part, and analysts' forecasts of dividend growth and book value growth in the non-constant form of the DCF method, the results should be considered conservatively high. Id. This is because analysts' forecasts of such growth have been known to be overstated. Id.

The non-constant growth form of the DCF model is implemented according to the return on investment an investor expects based on an estimate of each separate annual cash flow the investor expects to receive. Id. To determine the specific non-constant growth expectation that an investor who trusts Value Line would expect, Value Line's detailed annual forecasts were incorporated into the computation. OCA St. 2 at 31-32. Cash flow entry is the cash outflow an investor would experience when buying a share of stock at market price. Id. at 32. Subsequent years of cash flow are equal to dividends per share forecast by Value Line. Id. For intermediate years of the forecast period in which Value Line does not provide a specific dividend, annual dividends were obtained by estimating that dividend growth would persist at a compound annual rate. Id. The cash flow at the end of the forecast period consists of both the last year's dividend forecast by Value Line and the proceeds from the sale of the stock. Id. The stock price used to determine the proceeds from selling the stock was obtained by estimating that the stock price would grow at the same rate at which Value Line forecasts book value to grow. OCA St. 2 at 32. Book value growth is used as it is the net result after the Company produces earnings, pays a dividend and either sells new common stock at market price or repurchases its own common stock at market price. Id.

Annual expected cash flows were used instead of quarterly, when dividends are paid. Id. at 33. Modeling cash flows annually, while causing a small overstatement of the cost of equity, results in easier visualization and input of data. Id. Further, a quarterly model would show dividends being paid sooner and earnings being available sooner, which would allow a company to compound them sooner. Id. For example, since revenues are received every day, a company that is expected to receive an annual rate of 9.00% on equity would have to earn only 8.62% if the return were compounded daily. Id. The reduction from 9.00% to 8.62% would then be partially offset by the impact of the quarterly dividend payment to bring the result of switching from the simplifying annual model a bit below 9.00%. Id.

The DCF model still relies on earnings even though it uses cash flow expectations as the valuation parameter. OCA St. 2 at 33. The model relies on an expectation of future cash flows, which come from dividends during the period the stock is owned and capital gains from the sale of the stock. Id. at 33-34. As earnings impact both dividends and stock price, the non-constant DCF model still relies on earnings. Id. at 34. A major strength of the DCF model is its recognition of the difference between earnings paid out as a dividend and earnings retained in the business. Id. Return on earnings retained in the business that are reinvested in needed used and useful assets have the potential to earn at the return consistent with ratemaking principles. Id. When an investor receives a dividend, he can either reinvest it in the same or another company or use it for other purposes, such as paying debt or living expenses. OCA St. 2 at 34. If the investor purchases more stock in the same company, the transaction occurs at market price, or earns at the rate "k". Id. at 34-35. When the same investor sees the value of his investment increase because earnings are retained rather than paid as dividends, the reinvestment occurs at book value, or earns at the rate "r". Id. When market price exceeds book value (i.e., the market-to book ratio exceeds 1.0),

retained earnings are worth more than earnings paid out as dividends because "r" will be higher than "k". Conversely, when market price is below book value, "k" will be higher than "r", meaning that earnings paid out as dividends earn at a higher rate than retained earnings. OCA St. 2 at 35.

Under the non-constant DCF model, it is not necessary for earnings and dividends to grow at a constant rate for the model to accurately determine the cost of equity because the non-constant form of the DCF model separately discounts each and every future expected cash flow and does not rely on any assumptions of constant growth. Id. Mr. Rothschild's non-constant growth DCF method indicates a cost of equity of between 7.57% and 9.41%. Id.

Twin Lakes did not file any rebuttal testimony in response to Mr. Rothschild's cost of equity approach, calculations, and recommendations.

3. Capital Asset Pricing Model

Mr. Rothschild implemented the Capital Asset Pricing Model (CAPM), as a check of his DCF analysis. CAPM relates return to risk. OCA St. 2 at 36. Specifically, it relates the expected return on an investment in a security to the risk of investing in that security. Id. The riskier the investment, the greater the return. Id. Investors in a firm's equity face both firm-specific risk, such as management performance, and market risk, including impacts from the overall market such as recession. Id. The CAPM predicts that for a given equity security, the cost of equity has a positive linear relationship to the sensitivity of the stock's returns to movements in the overall market (e.g., S&P 500). Id. A security's market sensitivity is measured by its beta. OCA St. 2 at 37. As shown in Chart 1 on page 37 of OCA St. 2, the higher the beta of a stock, the higher the company's cost of equity—the return required by the investor to invest in the stock. Id.

The standard CAPM formula is as follows:

$K = Rf + \beta i * (Rm - Rf)$

Where:

> K is the cost of equity;
> Rf is the risk-free interest rate;
> Rm is the expected return on the overall market (e.g., S&P 500);
> [Rm – Rf] is the premium investors expect to earn above the risk-free rate for investing in the overall market ("equity risk premium" or "market risk premium"); and
> βί (Beta) is a measure of non-diversifiable, or systematic, risk.

OCA St. 2 at 37.

To implement the CAPM, the appropriate values were determined for the three model inputs: Risk Free Rate, Beta, and Equity Risk Premium. Id. How the three model inputs were calculated along with a summary of the CAPM cost of equity numbers derived from those inputs are discussed below.

a. Risk Free Rate

Mr. Rothschild chose to use a risk-free rate of 1.78% based on short-term U.S. Treasury bonds (3-months as of October 2, 2019) because those bonds have a negligible risk of default, and because their value has a relatively low exposure to overall market movement. OCA St. 2 at 38. Some financial textbooks recommend a risk-free rate based on subtracting the historical spread between long and short-term U.S. Treasury bonds. Id. This method was not used, however, because in the current capital markets it results in an unreasonably low risk-free rate. Id.

b. Beta

As the cost of equity should be based upon investor expectation, Mr. Rothschild used two betas based on forward-looking investor expectations of non-diversifiable risk. Id. Most published betas are based on historical return data, but it is possible to calculate betas based on investor expectation of the probability distribution of future returns. OCA St. 2 at 39. Mr. Rothschild chose to use both historical returns and option-implied betas based on investor expectations. Id.

at 40. Option-implied betas were used because studies have found that betas calculated based on investor expectations (option-implied) provide information regarding future perceived risks and expectations. Id. Mr. Rothschild used the following two betas in his CAPM analysis:

1. Hybrid beta: 50% Option-Implied Beta (6 months) = 25% Historical Beta (6 months) + 15% Historical Beta (2 years) + 10% Historical Beta (5 years).
2. Forward Beta: 100% Option-Implied Beta (6 months).

OCA St. 2 at 41.

Historical Beta Calculations

Historical betas were calculated following the methodology used by Value Line. OCA St. 2 at 41. The only major difference between Mr. Rothschild's calculations and Value Line's calculations is that Value Line uses the NYSE Composite Index and Mr. Rothschild used the S&P 500 Index as the market index. Id. at 42.

Option-Implied Beta Calculations

In calculating the Option-Implied Beta, Mr. Rothschild used publicly-available trading information for all the options for a given security (company or index) for a complete trading day. OCA St. 2 at 43. Calculating option-implied betas requires (1) obtaining stock option data for that company and a market index, (2) filtering the stock option data, (3) calculating the option-implied volatility for the company and for the index, (4) calculating the option-implied skewness for the company and for the index, and (5) calculating option-implied betas for the company based on implied volatility and skewness for the company and for the index. Id. Mr. Rothschild used the same methodology used by the Chicago Board of Options Exchange (CBOE) in calculating the Volatility Index (VIX) and SKEW Index. Id.

c. Equity Risk Premium

Mr. Rothschild's equity risk premium is the expected return on the S&P 500 minus the risk-free rate described above. OCA St. 2 at 45. He calculated an expected return on the S&P 500 by using stock options traded on this index. Id. The implied volatility for options with an expiration period of one year was approximately 0.19, which indicates that the market expects the standard deviation of future annual price movements of the S&P 500 to be 19%. Id. Based on this market expectation, Mr. Rothschild considered two growth rates in the DCF analysis he used to calculate the equity risk premium component of his CAPM, a base S&P 500 growth of 7.44% and a high S&P 500 growth of 10.13%. Id. The CAPM result is 8.49%, as indicated on Schedule ALR-2.

E. Conclusion

Based on the foregoing, the market-based cost of equity for Twin Lakes is 8.78%. Mr. Rothschild's overall rate of return recommendation of 7.89%, based on a pro forma capital structure of 50% debt and 50% equity, and Twin Lakes' cost of debt of 7.0% should be considered a market-based cost of capital. Ms. Tilley's 11% cost of equity is excessive for the reasons explained above. As stated previously, the Company did not file rebuttal opposing Mr. Rothschild's recommendations related to rate of return. As discussed below, the OCA's position is that the fair rate of return in this case should reflect a zero return on equity due to inadequate service.

VIII. OTHER ISSUES

A. Quality Of Service

As discussed below, Twin Lakes is providing inadequate water service to its customers. Historically, the Company has sourced its water from two wells—Well #1 and Well #2. Well #1, however, collapsed and no longer provides the Company with a source for water. As a result, Well #2 is currently the Company's sole source of water, but Well #2 is now at risk of collapse due to the over-pumping of Well #2 to compensate for the loss of Well #1. Additionally, the Company's distribution system is plagued by leaks and experiences excessive levels of unaccounted-for water (UFW). Because the Company is not providing its customers with adequate water service, the Commission should exercise its authority and set Twin Lakes' return on equity at zero (0) percent in this proceeding.

1. Legal Standard

Section 1501 of the Public Utility Code (Code) requires that:

> Every public utility shall furnish and maintain adequate, efficient, safe, and reasonable service and facilities, and shall make all such repairs, changes, alterations, substitutions, extensions, and improvements in or to such service and facilities as shall be necessary or proper for the accommodation, convenience, and safety of its patrons, employees, and the public. Such service shall be reasonably continuous and without unreasonable interruptions or delay. Such service and facilities shall be in conformity with the regulations and orders of the commission.

66 Pa. C.S. § 1501. Public utilities thus have an obligation to remedy any deficiencies in their system to ensure that customers receive "adequate, efficient, safe, and reasonable service." Id.

Water service does not need to become public health risk in order to be found unsuitable for all domestic purposes. Pa. P.U.C. v. Lake Latonka Water Co., 71 Pa. PUC 507, 522 (1989) (holding that a utility provides inadequate water service even when the water "has non-health, aesthetic quality problems"); see Kessler v. Shickshinny Water Co., 64 Pa. PUC 290, 296-97

(1987) (holding that ground debris in pipes resulting in "dirty, smelly water which was unsatisfactory for virtually every purpose except toilet flushing" violated 66 Pa. C.S. § 1501).

In Pa. P.U.C. v. Pa. Gas & Water Co., 68 Pa. PUC 191, 1988 Pa. PUC LEXIS 457 (Sept. 30, 1988), the Commission explained what is required to support claims of inadequate and unreasonable water service:

> In reaching a determination as to whether a utility has provided adequate and reasonable service, we note that *every* customer is entitled to water that is fit for the basic, domestic purposes (e.g., cooking, drinking, washing and bathing). Although a few isolated or sporadic instances or complaints of water received by customers . . . that is unfit for the aforementioned basic, domestic purposes would not warrant a finding that a utility has failed in its provision of adequate and reasonable service, we believe that probative evidence in a particular case showing a *significant* failure on the part of a utility to provide adequate and reasonable service would provide a basis for a conclusion that a utility has provided inadequate service. Finally, we point out that customers are entitled to adequate and reasonable service at the time they are paying their bills, not some optimistic point in the future.

Id. at 416. Section 523 of the Code requires the Commission to "consider . . . the efficiency, effectiveness and adequacy of service of each utility when determining just and reasonable rates. . . ." 66 Pa. C.S. § 523. Accordingly, the Commission has authority to deny a proposed rate increase, in whole or in part, if the Commission finds "that the service rendered by the public utility is inadequate." 66 Pa. C.S. § 526(a). As discussed below, the record in this proceeding establishes that Twin Lakes is not providing adequate service.

2. Background

Middlesex Water received approval from the Commission to acquire Twin Lakes in March 2009. Joint Application of Middlesex Water Company and Twin Lakes Water Services, LLC, for Approval of The Transfer by Sale of Twin Lakes to Middlesex, Docket No. A-2009-2050092 Order (March 2, 2009). The acquisition occurred in November 2009. Twin Lakes has filed rate increase requests in 2011, 2015, and the current request in 2019.

On June 10, 2011, Twin Lakes filed a request to increase revenues by $124,420, or 368%. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No .R-2011-2246415. (2011 Rate Case). The Commission approved an Amended Joint Petition for Settlement of Rate Investigation (2011 Settlement) on March 1, 2012. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No. R-2011-2246415 Order (March 1, 2012). The 2011 Settlement provided for increased revenues of $42,060, or 124%, starting with an increase of $21,060, followed by two additional increases phased in over the next two years. In exchange, Twin Lakes was required to reduce unaccounted for water (UFW) from 55% to 49.5% within 18 months; conduct an annual pressure survey as required by Commission regulation, and provide an annual bill insert to describe how it would notify its customers about boil water advisories or other emergency situations. 2011 Settlement at ¶¶7. c., d., and h.

On November 16, 2015, Twin Lakes filed a rate increase request asking for additional revenues of $195,287, or 257%. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No .R-2015-2506337 (2015 Rate Case). The Commission approved a Joint Petition for Settlement of Rate Investigation (2015 Settlement) on June 9, 2016. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No. R-2015-2506337 Order (June 9, 2016). The settlement of the 2015 rate case provided for an increase in revenues of $125,000, or 164.54% increase over three years, including an immediate 82% increase ($62,500) along with two subsequent increases based on specific improvements being made to trigger phases 2 and 3. 2015 Settlement at ¶6. The 2015 Settlement required Twin Lakes to, *inter alia*, replace Well #1 to trigger the second phase of the rate increase (additional 25%) (¶ 7.c.1); install and/or replace various mains in the distribution system to trigger the third phase of the rate increase (additional 25%) (¶ 7.c.2), and send outage alert billing inserts two times per year (¶ 7.h), and pressure readings protocol for customers complaining about low pressure, as

well as a commitment to increase pressure by a certain amount when it replaced Well #1 (¶ 7.k).

On October 23, 2018, Twin Lakes filed an Application to Abandon service. Application of Twin Lakes Utilities, Inc. for all approvals and waivers (if any) which may be required under the Public Utility Code for the Abandonment of Service, Docket No. A-2018-3005590 (Application to Abandon). In its Application, Twin Lakes described the state of the distribution system and the wells, and the necessary capital expenditures to fix the problems that exist. See Application to Abandon, Exhibits B and C. On October 25, 2018, a Secretarial Letter was issued to Twin Lakes in which the Application was rejected because Twin Lakes did not provide a buyer or alternative to the existing water service. On October 29, 2018 Twin Lakes filed an appeal of staff action regarding the rejection of the Application. On February 28, 2019, the Commission entered an order denying Twin Lakes' appeal.

3. The Evidence Establishes That Twin Lakes Is Not Providing Safe, Adequate and Reliable Service.

a. Unaccounted For Water

High levels of Unaccounted for Water (UFW) have been a long-standing problem with the Twin Lakes system. Mr. Fought explained how UFW is defined in Twin Lakes' Annual Report filed with the Commission, "As shown on Section 500 of the PUC Annual 1 Report forms, Unaccounted For Water is equal to "Total Water Delivered for Distribution & Sale" minus "Total Sales" minus "Non-Revenue Usage and Allowance." "Non-Revenue Usage and Allowance" includes "Main Flushing," "Blow-off Use," "Unavoidable Leakage," and "Located & Repaired Breaks in Mains & Services." OCA St. 3 at 6. Mr. Fought explained why UFW is an important issue in the operation of the Twin Lakes' system:

> In general, UFW is a method of estimating the amount of water wasted in a water distribution system by leaks and inaccurate meter readings. Reducing the wasted

> water saves money in chemical and power costs and provides for important water conservation in areas that have limited water supply sources. The accuracy of the UFW estimate depends on reliable estimates of unavoidable non-metered water uses such as flushing the distribution system, firefighting, normal pipe leakage, repaired main breaks, etc. Keeping track of UFW gives a water utility an indication of the extent of unknown leaks in the distribution system so that informed decisions can be made on the necessity of finding and repairing leaks. The Water Audit methodology, established by the International Water Association (IWA) and the American Water Works Association (AWWA) is generally becoming a more accepted method of identifying the amounts of wasted water. Both methods, if properly utilized, provide water utilities with information needed to improve operational efficiency. According to the 52 Pa. Code § 65.20 (4) "Levels of the unaccounted-for water should be kept within reasonable amounts. Levels above 20% have been considered by the Commission to be excessive."

OCA St. 3 at 6. Mr. Fought reviewed Twin Lakes' UFW percentages from 2011-2018, as reported on Twin Lakes' Annual Report filed with the Commission. OCA St. 3 at 6-7; Exhibit TLF-3. The UFW ranged from 78.4% to 86.7% during that time frame. Id. This extremely high level of unaccounted for water is not reasonable. Over the same time frame, the parties have tried to address the high levels of unaccounted for water in the 2011 and 2015 Settlements. In the 2011 Settlement, Twin Lakes agreed to reduce UFW by 10% of the then current level and had 18 months to do so. 2011 Settlement at ¶ 7.c. In the 2015 Settlement the parties agreed that Twin Lakes would receive an additional $31,250 or 25% of the total increased revenue requirement agreed to by the parties when Twin Lakes completed the following distribution system projects:

> install a new supply main that will connect the replacement Well #1 to the distribution system; (b) replace 4,000 feet of main, in-kind by diameter, in connection with the following streets: Warpath Place (500 feet), Kenny Road (1,000 feet), Dylan Road (1,000 feet), Susan Road (1,000 feet) and Rock Place (500 feet). Twin Lakes shall retain the right to substitute different streets for this main replacement obligation provided that this obligation remains at minimum 4,000 feet in the aggregate; (c) replace Twin Lakes owned service lines in conjunction with the main installation and replacements identified in this subparagraph; and (d) install a new air relief valve.

2015 Settlement Petition at ¶ 7.c.2. Mr. Fought explained that these requirements were not completed. OCA St. 3 at 4. Specifically, 'the proposed main interconnecting the replacement well

to the distribution main is 0% complete. The proposed air relief valve is also 0% complete. Twin Lakes only installed 2,790 of main instead of the 4,000 feet agreed to." Id.; see Exhibit TLF-1. The Phase 3 increase did not go into effect.

Despite the specific settlement provisions in 2011 and 2015, the extremely high level of UFW has not noticeably improved. For example, the highest level of UFW (86.7%) was in 2014. See OCA St. 3 at 7. Further, the level reported in 2018 (81.5%) was only 1.4% lower than the 2011 level (82.9%) and the 2018 level was part of a three-year upward trend. Id.

Not only does pumping so much water increase the costs of power and chemicals, it adversely impacts Well #2, because it is making it necessary to overpump the well, which leads to the serious issues identified below.

These distribution system improvements are critically important to the provision of safe, adequate, and reliable service. Mr. Fought explained why the projects need to be done:

> **Q. WHY IS IT IMPORTANT THAT PORTIONS OF THE DISTRIBUTION SYSTEM MAINS BE REPLACED?**
> A. From an operations viewpoint, those portions of the distribution system that are causing excessive UFW should be replaced to prevent damage to Well #2 by over-pumping and to reduce electrical and chemical costs for pumping and treating excessive UFW. As discussed below, during 2018 Well #2 was pumped **4.5 times** more than necessary to serve the customers' demand for water with 20% UFW.

OCA St. 3 at 5 (emphasis added). Twin Lakes has estimated that it will take $2.8 million from 2020-2024 to replace the remaining distribution system mains and service. Twin Lakes St. No. 3 at 3-4; OCA St. 3 at 5. As discussed below, it is not feasible for the 114 customers to pay rates that would result from such a large investment in the system, nor is it feasible to expect that the water supply will be able to continue to be operated with such excessive levels of UFW.

b. Reliability of The Source of Supply

The Company's water supply source consists of Well #2 with a safe yield of approximately 50 gallons per minute (gpm) or 72,000 gallons per day (gpd). OCA St. 3 at 2. A second well, Well #1, is no longer usable because the well hole collapsed. Id. In the settlement of its 2015 rate case, Twin Lakes agreed to replace Well # 1. Joint Petition for Settlement of Rate Investigation (2015 Settlement) at ¶ 7.b. Pa. P.U.C. v. Twin Lakes Utilities, Docket No. R-2015-2506337 Recommended Decision at 27 (May 9, 2016). The Commission approved the Settlement Petition. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No. R-2015-2506337 Order at 2 (June 9, 2016). Twin Lakes did not replace Well # 1 and Phase 2 of the 2015 Settlement rates did not go into effect. See OCA St. 3 at 3; Exhibit TLF-1. In addition, Twin Lakes did not replace the specific mains required to trigger phase 3 of the 2015 Settlement rates. Id. at 4; Exhibit TLF-1.

Mr. Fought explained why the replacement of Well # 1 is so important:

> Q. WHY IS IT IMPORTANT THAT THE REPLACEMENT FOR WELL #1 BE COMPLETED AND CONNECTED TO THE DISTRIBUTION SYSTEM AS SOON AS POSSIBLE?
>
> A. According to an evaluation of the Company's system by B. F. Environmental Consultants, Inc. dated September 1, 2014: (1) over-pumping of Well #2 may have been the cause of the collapse of the Well #1 well hole and may be threatening to destabilize the Well #2 well hole and (2) the continuous over-pumping of Well #2 could subject the well to "surface water influence," destabilization of the well hole and other potential problems. See Exhibit TLF-2, pg. 2. If the water in Well #2 becomes subject to "surface water influence," then the Company will have to install a water filtration treatment plant if it wants to continue to use Well #2 in order to comply with the PA Filter Rule (25 Pa. Code §109.202(c)(1)).
>
> From an operations viewpoint, the replacement Well for Well #1 should be completed and connected to the distribution system as soon as possible to prevent a costly emergency if Well #2 becomes destabilized or subject to "surface water influence".

OCA St. 3 at 4.

Twin Lakes acknowledges that Well #1 must be replaced. The 2015 Settlement specifically provided that Twin Lakes would replace Well #1 and in exchange would receive additional revenues. Although Phase 2 of the 2015 increase was not intended to cover all of the costs of replacing Well # 1, because the replacement well costs were not included in the 2015 rate filing and the replacement well was not used and useful, Phase 2 would have provided some additional revenues until Twin Lakes filed its next rate case. Further, Twin Lakes, in its 2018 Application to Abandon stated that replacement of Well #1 was one of a number of critically necessary steps.[8] Application at 2.

Twin Lakes estimates that its cost to replace Well #1 would be $1,600,000 in addition to the $611,375, the amount recorded in Construction Work in Progress for this project. Twin Lakes St. 3 at 3-4. In the 2018 Application to Abandon, Twin Lakes stated that the cost of Well #1 would be extremely expensive for its 114 customers, and along with other necessary costs, would drive rates to approximately $3,800 per customer per year. 2018 Application to Abandon at 2-4.

The water supply situation presents a clear, immediate problem regarding the reliability of the water supply due to the overpumping of Well #2 because of Well #1 being permanently out of service. It is clear that Well #2 is in a precarious situation and will need to be rehabilitated after Well #1 is replaced. This information has been known since 2014. It is not reasonable for the customers to be subject to the proposed rate increase that will do nothing to resolve the water supply situation. Twin Lakes' customers are entitled to safe, adequate and reliable service at their current rates. The absence of any back up water supply, especially when the existing supply is under duress, is not providing adequate service to those customers. If Well #2 were to fail, then

[8] In addition to the possible problems that Well #2 could experience (OCA St. 2 at 4), Twin Lakes stated that if Well #1 is replaced, it will be necessary to rehabilitate Well #2 at an estimated cost of $400,000. 2018 Application to Abandon at 4.

the customers would be without any source of water that could be distributed to their homes. The immediate solution is to recognize that rates should not be raised to the level proposed by Twin Lakes but rather that rates should be set at no more than what is recommended by Ms. Sherwood, which reflects a zero return on equity as discussed below.

c. Exceedance of Lead Action Level

During the course of this proceeding, on November 18, 2019, the OCA was contacted by a customer who had received a notice, dated November 13, 2019, titled "Important information about Lead in your Drinking Water". OCA St. 3SR at 3; Exhibit TLF-5. The notice resulted from water sampling on August 18 and follow up sampling on September 15, 2019 as part of the company's routine lead and copper monitoring pursuant to 25 Pa. Code § 109.1101. Id. The Company did not address this issue in its rebuttal testimony filed on November 20, 2019. in his surrebuttal testimony, Mr. Fought made a series of recommendations that will require the Company to inform its customers of the availability of testing for lead levels at an individual's home, the steps that customers can take to reduce exposure to lead in drinking water, and permit the parties to receive information on testing and other steps that Twin Lakes will take to comply with the Department of Environmental Protection's (DEP) regulations regarding the lead action level exceedance. OCA St. 3SR at 4-5. These recommendations were reflected in the Appendix B of the Stipulation that the parties entered into and was submitted to the ALJ on December 17, 2019. The Stipulation was approved by the ALJ on December 18, 2019.

d. Public Input Testimony

Public input hearings were held in Shohola Township, Pike County on October 17, 2019. At those hearings, eight customers testified regarding the proposed rate increase and quality of service issues. During the public input hearings, a customer testified about not being notified when

a Boil Water Advisory is lifted. Tr. 86. The Company uses an automated phone call to notify customers that a Boil Water Advisory is being issued. OCA St. 3SR at 2. The OCA recommends that the Company use the same notification process, an automated phone call to each customer, when a BWA is lifted. OCA St. 3SR at 2-3. Using the same process will ensure that each customer is informed as to when they should boil their water and when they can stop doing so.

In its rebuttal, the Company did not address testimony related to two additional quality of service issues that were raised at the public input hearings. OCA St. 3SR at 3. Specifically:

- a customer testified that he was discriminated against by the Company because of the way he spoke English. He testified that his phone call about a water outage was answered and transferred to another two Company representatives that could respond to his concerns, and then he was hung up on. Gerasimos Xenatos, Tr. 90, ln 19-23; Tr. 91, ln 18-24; Tr. 92, ln 17-25; and
- a customer complained about a water meter installation underneath his house. Jeremy Monz, Tr. 104, ln 17-24.

OCA St. 3SR at 3. The Company did not provide any response to these customers' concerns. The efficiency and effectiveness of management is specifically required to be addressed in a rate proceeding. 66 Pa. C.S. § 523. The OCA submits that these issues should have been addressed by Twin Lakes as part of this proceeding.

4. <u>The Appropriate Remedy For The Inadequate Service Is The Reduction of the Cost of Equity</u>.

Customers are entitled to safe, adequate, and reliable service at just and reasonable rates. This case follows the 2011 and 2015 rate cases where Twin Lakes has received substantial rate increases in exchange for agreeing to address UFW, among other service issues. There has been no appreciable improvement in UFW and it appears that there can be no real improvement without estimated expenditures of $2,800,000 to replace the distribution system. In addition, as recognized in the 2014 report and the 2015 Settlement, Well #1 needs to be replaced and Well #2 is at risk

and will need to be rehabilitated when there is a replacement well for Well #1 in service. The estimated cost for to replace Well #1 is $1,600,000 (Twin Lakes has already expended approximately $600,000 as shown in Construction Work in Progress) and to rehabilitate Well #2 is $400,000. Twin Lakes estimated that these costs alone would result in rates of $3,800 per customer per year. 2018 Application to Abandon at 4; Exh. C. When the distribution system replacement costs are added, it would more than double the current estimated cost of the projects and would likely have a similar impact on the estimated rates.

The OCA recommends that the inadequate service be recognized in this case by reducing the equity cost rate to zero. The resulting revenue requirement, with OCA's accounting adjustments, is $98,688, rather than $153,494 at the OCA's recommended cost of capital. Table I; OCA St. 1SR at 2; Sch. SLS-12 C.

In rebuttal the Company argued that Section 1501 "requires a public utility to furnish and maintain – not improve service and facilities." Twin Lakes St. No. MLT-2R at 9. The Company's position is without merit. Sections 1501 and 1505 require that the utility undertake the necessary improvements to furnish and maintain adequate service and facilities, in exchange for just and reasonable rates. 66 Pa. C.S. §§ 1501, 1505. It is clear that Twin Lakes has the obligation to make the necessary capital investment to furnish and maintain safe, adequate, and reliable service. As discussed herein, the cost to serve the customers, including the costs of the improvements is not able to be borne by the 114 customers as customers of a stand-alone company, but there is not any issue about the legal obligation of the utility providing service to make the necessary improvements.

The OCA also recommends that the parties and the Commission turn to finding a long term solution that would address the quality of service issues in a manner that results in just and

reasonable rates to the Twin Lakes' customers. The OCA recommends that a Section 529 proceeding be initiated to permit the investigation into finding a capable public utility to acquire Twin Lakes. 66 Pa. C.S. § 529.

B. Affordability

The affordability of rates for the customers is an important consideration in this proceeding. Ms. Sherwood explained that the Company's proposed rates violate ratemaking principles because increasing rates as the Company has proposed, will result in rate shock that violates the important ratemaking principle of gradualism and it is likely that the average $155 monthly increase may not be affordable for some customers. OCA St. 1 at 12. The following chart shows the impact of the Company's proposal:

	Current	**Company Proposed**
Customer Charge per month	$60.41	$158.61
Volumetric Charge per 1,000 gallons	$14.60	$38.33
Total **monthly** charges for customer using **2,400** gallons per month	$95	$251
Total **annual** charges for customer using **2,400** gallons per month	$1,140	$3,012
Total **monthly** charges for customer using **5,000** gallons per month	$133	$350
Total **annual** charges for customer using **5,000** gallons per month	$1,601	$4,203

Compiled from data in OCA St. 1 at 10-12.

Ms. Sherwood noted that the rate shock would be present not only at the Company's proposal but also at the OCA's calculated revenue requirement, with the full cost of capital

calculated by Mr. Rothschild and at the zero return on equity to reflect inadequate service, as recommended by OCA, as shown on the following table:

	Current	**At OCA Full Revenue Requirement[9]**	**At OCA Revenue Requirement Reflecting Inadequate Service[10]**
Total **monthly** charges for customer using **2,400** gallons per month	$95	$210	$170
Total **annual** charges for customer using **2,400** gallons per month	$1,145	$2,520	$2,042
Total **monthly** charges for customer using **5,000** gallons per month	$133	$295	$239
Total **annual** charges for customer using **5,000** gallons per month	$1,601	$3,540	$2,863

Compiled from Exh. SLS-12 C; OCA St. 1 at 12-14.

Specifically, the OCA's calculated revenue requirement, with a full cost of capital, would result in an increase of about $115 per month for a customer using 2,400 gallons per month, or about $162 per month for a customer using 5,000 gallons per month. See OCA St. 1 at 12-13; Sch. SLS-12 C. Although this is less than the Company's proposal, it is still a significant increase that

[9] To determine the rate impact, OCA utilized the Company's allocation of revenue between metered rate and flat/fixed rate, total annual usage, and number of customers provided on Additional Supporting Information No. 2 – Billing Analysis for Proposed Rates included in the Company's original filing. To calculate the bill impact based upon OCA's Full Revenue Requirement, the revenue requirement of $287,008, provided on Schedule SLS-12 C line 10, was allocated with 63% to flat/fixed rate and 37% to metered rate. To determine the flat/fixed rate, the allocation of $180,815 is divided by 114 customers and by 12 monthly bills to determine the monthly fixed rate of $132.17 per customer. To determine the metered rate, the allocation of $106,193 is divided by the total annual usage of 3,262.9 thousand gallons to determine the volumetric rate of $32.55 per thousand gallons.

[10] To determine the bill impact for the OCA Revenue Requirement Reflecting Inadequate Service, the revenue would be $232,202 (reflected on Schedule SLS-1 C line 6). Using the Company's allocation between flat and metered rates, $146,287 is allocated to the flat/fixed rate and $85,915 is allocated to metered rate. When the flat rate revenue allocation is divided by the 114 customers and 12 monthly bills, the flat/fixed rate is $106.94 per customer per month. For metered rate, the $85,915 is divided by the total annual usage of 3,262.9 thousand gallons, results in a volumetric rate of $26.33 per thousand gallons.

is inconsistent with the concept of gradualism and would cause rate shock. OCA St. 1 at 13. Even under the OCA's recommended revenue requirement, reflecting a zero return on equity to reflect inadequate service, there is still a significant increase that is inconsistent with the concept of gradualism and would cause rate shock. With the OCA's recommended revenue requirement including a zero return on equity, the average customer's bill would increase to $170 per month for 2,400 gallons per month, or to $239 per month for 5,000 gallons per month. Id. at 13; Sch. SLS-12 C.

As shown on the tables above, under any of the revenue requirements proposed in this case, the proposed increases to the bills that the Twin Lakes' customers would pay, would result in rates that are outside of the zone of just and reasonable rates.

Ms. Sherwood also reviewed Twin Lakes' proposed rates in comparison to the rates of the major water utilities in the Commonwealth and found that the proposed rates are "significantly in excess of the rates assessed by the major water utilities in the Commonwealth." Id. at 11. The chart is reproduced below:

Table 1
Comparison of Residential Rates of
Major Pennsylvania Water Utilities

Company	Monthly Customer Charge	Consumption Charge (1,000 gallons)
Aqua Pennsylvania, Inc.[1]	$18.00	$10.949[2]/12.608[3]
Pennsylvania American Water Company	16.50	12.217
Suez Water Pennsylvania, Inc.	14.50	9.0510
York Water Company	16.25	5.012[4]/8.111[5]
Twin Lakes Utilities, Inc. (proposed)	**158.61**	**38.33**

[1] Rate Zone 1.
[2] Up to 2,000 gallons.
[3] Over 2,000 gallons.
[4] Gravity System.
[5] Repumped System.

OCA St. 1 at 11.

Rates must set at just and reasonable levels. 66 Pa. C.S. § 1301. If rates are too high, then not only does that violate the basic principles of rate setting, it will result in customers not being able to afford water utility service. OCA St. 1 at 13-15. Ms. Sherwood found that the proposed rate of $250 per month for a customer using 2,400 gallons per month would be more than 7% of the median household income (MHI) in Shohola Township.[11] OCA St. 1 at 13. As explained above, even with the OCA's proposed revenue requirement, at full rate of return, the resulting rates would be at 7% of MHI for Shohola Township. At the OCA's revenue requirement reflecting a zero return on equity, the rates would represent 5.5% of MHI in Shohola Township. It is clear that there is no resulting level of revenue requirement that would set rates that are anywhere near the normal ranges of affordability.

The concerns of gradualism, rate shock and affordability do not go away after this case. Ms. Sherwood noted that Twin Lakes is projecting more than $3,100,000 of capital improvements that are not reflected in this rate case. OCA St. 1 at 14. She also noted that the Company's Pennvest filing requested $4,825,000 of capital improvements. Id. at footnote 18. Using the more conservative number of $3,100,000, Ms. Sherwood calculated that rate base would increase by 331% and increase Twin Lakes' cost of service by an additional 173%, using OCA's recommended return on equity. The OCA submits that the affordability of the rates resulting from this case should be considered, as well as considering the long-term rate implications, when the Commission makes its determination in this proceeding.

[11]Ms. Sherwood reviewed the MHI indicators as used by the United States Environmental Protection Agency (EPA) and the Pennsylvania Infrastructure Investment Authority (Pennvest). She found that EPA reported that an annual bill of greater than 2% of MHI "may be difficult for the consumer." OCA St. 1 at 13, note 17. Pennvest calculates affordable rates as being between 1% and 2% of Adjusted MHI (adjusted for inflation) based on the socioeconomic condition of the community. Id.

As explained above, Twin Lakes is not a viable entity. The service is inadequate and a rate increase is not justified based on inadequate service. In addition, the capital expenditures that are needed to improve the system and the supply are too high for the 114 customers to bear, even assuming that financing can be secured for all of the capital improvements. The situation requires finding a long term solution and the initiation of a Section 529 proceeding. 66 Pa. C.S. § 529. OCA St. 1 at 14-15.

IX. RATE STRUCTURE

The OCA has not made any recommendations regarding rate structure.

X. CONCLUSION

WHEREFORE, for all of the reasons discussed above, the Office of Consumer Advocate submits that Twin Lakes Utilities' proposal to increase rates for its 114 customers should be denied and an increase of no more than $98,707 should be permitted. This recommended revenue requirement reflects a zero return on equity because the record reflects that Twin Lakes is not providing safe, adequate, and reliable service. The proposed rate increase will not address the supply and distribution system problems. The proposed rates, even under the OCA's recommended revenue requirement, violate the principle of gradualism and will constitute rate shock. Further, the proposed rates, even under the OCA's recommended revenue requirement, may be unaffordable while Twin Lakes projects that rates will need to rise to more than $3,800 per year if the necessary improvements are completed. It is clear that the customers of Twin Lakes cannot receive adequate service at just and reasonable rates under the current ownership due to the small size of the customer base, so the OCA recommends that efforts to find a larger system to take over the system should begin as a formal proceeding under Section 529 of the Public Utility Code. The OCA respectfully submits that the Commission should grant a maximum increase of $98,707 and move forward with a Section 529 investigation to transfer this utility to a larger water system.

Respectfully Submitted,

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Date: January 7, 2020
*279686

Twin Lakes Utilities, Inc.
Docket No. R-2019-3010958
Table I

Income Summary

	Pro Forma Present Rates	OCA Recommended Adjustments	Adjusted Present Rates	Revenue Adjustment	Total Recommended Revenue
Operating Revenues	$ 133,514	$ -	$ 133,514	$ 98,688	$ 232,202
Deductions:					
O&M Expenses	163,756	(64,829)	98,927	-	98,927
Depreciation	31,134	-	31,134	-	31,134
Assessments		-	-	-	-
Other Taxes	3,500	-	3,500	-	3,500
Non-Operating Income	45,770	-	45,770	-	45,770
Income Taxes	29,224	(20,048)	9,176	-	9,176
Total Deductions	273,384	(84,877)	188,507	-	188,507

Twin Lakes Utilities, Inc.
Docket No. R-2019-3010958

Table II

Summary of Adjustments

Recommended Adjustment	Reference	(A) Rate Base Effect	(B) Revenue Effect	(C) Expense Effect	(D) Effect Upon Other Taxes	(E) Depreciation Expense Effect	(F) Income Tax
Eliminate Acquisition Adjustment	OCA Schedule SLS-3 C	(54,406)					
Cash Working Capital	OCA Schedule SLS-10 C	(4,879)					
Management Fee	OCA Schedule SLS-4			-213			
Legal Expense	OCA Schedule SLS-5			-596			
Maintenance Supplies Expense	OCA Schedule SLS-6			-5010			
Purchased Power Expense	OCA Schedule SLS-7			-6335			
Chemical Expense	OCA Schedule SLS-7			-1808			
Bad Debt Expense	OCA Schedule SLS-8			-15034			
Rate Case Expense	OCA Schedule SLS-9			-35833			
State Income Taxes	OCA Schedule SLS-11 C						-10105
Federal Income Taxes	OCA Schedule SLS-11 C						-9943
Total Adjustments		$ (59,285)	$ -	$ (64,829)	$ -	$ -	$ (20,048)

Twin Lakes Utilities, Inc

Summary of Operating Income
For the Rate Year Ending March 31, 2019

Line No.		Company Amounts at Present Rates	OCA Adjustments	Amounts After OCA Adjustments	Pro Forma Changes in Revenues	Amount After Change in Revenues
1	**Operating Revenues**					
2	Metered Sales					
3	Residential	$ 130,279		$ 130,279		$ 130,279
4	Non-Metered Sales					
5	Other Revenue	3,235		3,235		3,235
6	Total Revenue	$ 133,514		$ 133,514	$ 98,707	$ 232,221
7						
8	**Operating Expenses**					
9	Operating Labor	$ 8,023		$ 8,023		$ 8,023
10	Operating Supplies	35		35		35
11	Maintenance Labor	-		-		-
12	Maintenance Supplies	9,509	$ (5,010)	4,499		4,499
13	Purchased Water	-		-		-
14	Purchased Power	10,524	(6,335)	4,189		4,189
15	Legal	1,001	(596)	405		405
16	Management Fees	26,185	($213)	25,972		25,972
17	Testing Expense	8,221		8,221		8,221
18	Other Maintenance	15,902		15,902		15,902
19	Chemicals	3,003	(1,808)	1,195		1,195
20	Transportation Expenses	-		-		-
21	Insurance	4,925		4,925		4,925
22	General Office Salaries	-		-		-
23	General Office Expenses	-		-		-
24	Rate Case Expense	57,333	$ (35,833)	21,500		21,500
25	Depreciation Expense	31,134		31,134		31,134
26	Bad Debt Expense	19,095	(15,034)	4,061		4,061
27						
28	Total Operating Deductions Before Taxes	$ 194,890		$ 130,061		$ 130,061
29						
	Operating Income Before Taxes	(61,376)		3,453		102,160
30	Taxes					
31	Federal Income Taxes	19,119	$ (9,924)	9,195		9,195
32	State Income Taxes	10,105	(10,105)	0		0
33	All Other Taxes	3,500		3,500		3,500
34						
35	Operating Income After Taxes	$ (94,100)		$ (9,242)		$ 89,465
36						
37	**Non-Operating Income/Deductions**					
38	Non-Operating Income	$ -		$ -		$ -
39	Interest	45,770		45,770		45,770
40						
41	Net Income	$ (139,870)		$ (55,012)		$ 43,695
42						
43	Rate Base	$ 1,307,711	$ (59,285)	$ 1,248,426		$ 1,248,426
44						
45	Return on Rate Base	-10.70%		-4.41%		3.50%

Twin Lakes Utilities, Inc

Summary of Operating Income
For the Rate Year Ending March 31, 2019

Line No.		Amount	
1	Rate base	$ 1,248,426	
2	Required Rate of Return	3.50%	(1)
3			
4	Net Operating Income Required	$ 43,694.90	
5	Net Operating Income at Present Rates	(55,012)	
6			
7	Required Change in Company Revenue	$ 98,707	

Notes

(1) Based upon the return on long-term debt in the Direct Testimony of OCA witness Aaron Rothschild

Docket No. R-2019-3010958
Schedule SLS-2 C
December 10, 2019

Twin Lakes Utilities, Inc

Summary of Adjustments
For the Rate Year Ending March 31, 2019

Line No.		Operating Revenues	O&M Expenses	Depreciation & Amortization	Taxes Other Than Income	Operating Income Before Taxes
1	Amount Per Company	$ 133,514	$ 163,756	$ 31,134	$ 3,500	$ (64,876)
2						
3	OCA Adjustments					
4	Management Fees		$ (213)			
5	Legal		(596)			
6	Maintenance Supplies		(5,010)			
7	Purchased Power		(6,335)			
8	Chemical Expense		(1,808)			
9	Bad Debt Expense		(15,034)			
10	Rate Case Expense		(35,833)			
11						
12	Total OCA Adjustments	$ -	$ (64,829)	$ -	$ -	$ (64,829)
13						
14	Total Adjusted Income Before Income Taxes	$ 133,514	$ 98,927	$ 31,134	$ 3,500	$ (47)

Docket No. R-2019-3010958
Schedule SLS-3 C
December 10, 2019

Twin Lakes Utilities, Inc

Adjustment of Rate Base
For the Rate Year Ending March 31, 2019

Line No.		Company Proforma Rate Base	OCA Adjustment to Rate Base	OCA Recommended Rate Base
1	Utility Plant in Service	$ 1,481,061	$ -	$ 1,481,061
2	Utility Plant Acquisition Adjustment	54,406	(54,406)	-
3	Less: Accumulated Depreciation	219,884	-	219,884
4	Subtotal	$ 1,315,583	$ (54,406)	$ 1,261,177
5				
6	Deduct			
7	Deferred Income Taxes	25,047	-	25,047
8				
9	Add			
10	Working Capital Allowance	17,175	(4,879)	12,296
11				
12	Rate Base	$ 1,307,711	$ (59,285)	$ 1,248,426

Docket No. R-2019-3010958
Schedule SLS-4
December 10, 2019

Twin Lakes Utilities, Inc

Adjustment of General Overhead Allocation - Management Fees
For the Rate Year Ending March 31, 2019

Line No.		2018 Twin Lakes Utilities		2018 Total Middlesex Water Company		2017 Twin Lakes Utilities		2017 Total Middlesex Water Company		2016 Twin Lakes Utilities		2016 Total Middlesex Water Company		Twin Lakes Utiltiies
1	Net Assets Per Company	$ 1,918,702	(1)	$ 491,358,479	(1)	$ 1,891,222	(1)	$ 452,881,024	(1)	$ 1,289,008	(1)	$ 421,922,071	(1)	
2	Less: Acquisition Adjustment	54,406		54,406		54,406		54,406		54,406		54,406		
3	Adjusted Net Assets	$ 1,864,296		$ 491,304,073		$ 1,836,816		$ 452,826,618		$ 1,234,602		$ 421,867,665		
4														
5	Adjusted Twin Lakes Percentage of Net Assets	0.3795%				0.4056%				0.2927%				0.3592%
6														
7														
8	Three-Year Average of Factors													
9	Subsidiary Revenues	0.1018%				0.1011%				0.0803%				0.0944%
10	Subsidiary Net Assets	0.3795%				0.4056%				0.2927%				0.3592%
11	Middlesex Payroll Charge to Subsidiaries	0.0947%				0.1017%				0.0929%				0.0964%
12	OCA Recommended 3 Year Average Factor													0.1834%
	Company Recommended 3 Year Average													
13	Factor													0.1874%
14	Difference													-0.0040%
15	2019 Middlesex Costs to be Allocated													$5,282,879
16	OCA Adjustment to Management Fees													($213)

Notes
(1) Company response to OCA Set I-2

Docket No. R-2019-3010958
Schedule SLS-5
December 10, 2019

Twin Lakes Utilities, Inc

Adjustment of Legal
For the Rate Year Ending March 31, 2019

Line No.			
1	Company Proforma Legal Expense	$	1,001
2	Less: Test Year Outside Counsel Services		(596)
3	OCA Recommended Legal Expense	$	405

Docket No. R-2019-3010958
Schedule SLS-6
December 10, 2019

Twin Lakes Utilities, Inc

Adjustment of Maintenance Supplies
For the Rate Year Ending March 31, 2019

Line No.			
1	Maintenance Supplies		
2	Year Ended 3/31/2017	$	3,558
3	Year Ended 3/31/2018		430
4	Year Ended 3/31/2019		9,509
5	Normalize 3-Year Expense	$	4,499
6			
7	Twin Lakes Proforma Expense		9,509
8	OCA Adjustment	$	(5,010)

Docket No. R-2019-3010958
Schedule SLS-7
December 10, 2019

Twin Lakes Utilities, Inc

Adjustments of Purchased Power and Chemical Expense
For the Rate Year Ending March 31, 2019

Line No.		Purchased Power	Chemical Expense
1	Company Proforma Expense	$ 10,524	$ 3,003
2	Unaccounted-for-Water Percent Above Commission Allowed Level	60.2%	60.2%
3	OCA Recommended Adjustment	$ 6,335	$ 1,808
4			
5	Less: Company Proforma	10,524	3,003
6	OCA Recommended Expense	$ 4,189	$ 1,195

Docket No. R-2019-3010958
Schedule SLS-8
December 10, 2019

Twin Lakes Utilities, Inc

Adjustment of Bad Debt
For the Rate Year Ending March 31, 2019

Line No.			
1	Bad Debt Expense		
2	Year Ended 3/31/2017	$	2,400
3	Year Ended 3/31/2018		2,400
4	Year Ended 3/31/2019		7,384
5	Normalize 3-Year Expense	$	4,061
6			
7	Twin Lakes Proforma Expense		19,095
8	OCA Adjustment	$	(15,034)

Docket No. R-2019-3010958
Schedule SLS-9
December 10, 2019

Twin Lakes Utilities, Inc

Adjustment of Rate Case Expense
For the Rate Year Ending March 31, 2019

Line No.			
1	Company Claimed Rate Case Expense	$	86,000
2	Years to Normalize		4
3	Normalized Expense	$	21,500
4			
5	Twin Lakes Proforma Expense		57,333
6	OCA Adjustment	$	(35,833)

Docket No. R-2019-3010958
Schedule SLS-10 C
December 10, 2019

Twin Lakes Utilities, Inc

Adjustment of Cash Working Capital
For the Rate Year Ending March 31, 2019

Line No.			
1	Company's Projected O&M	$	148,161
2	Less: OCA Adjustments to O&M		(49,796)
3	OCA Adjusted O&M		98,365
4	CWC Percentage		12.50%
5	Total Cash Working Capital	$	12,296
6			
7	Company's Cash Working Capital Expense		17,175
8	OCA Adjustment	$	(4,879)

Docket No. R-2019-3010958
Schedule SLS-11
December 10, 2019

Twin Lakes Utilities, Inc

Adjustment of Income Taxes
For the Rate Year Ending March 31, 2019

Line No.		Per Company	Per OCA	OCA Adjustments
1	Net Income Before Federal & State Income	$ 101,148	$ 43,695	
2	PA State Income Tax Rate	9.99%	0%	
3	State Income Tax	$ 10,105	$ -	$ (10,105)
4				
5	Less: State Income Tax	$ 10,105	$ -	
6	Federal Taxable Income	$ 91,043	$ 43,695	
7	Federal Income Rate	21%	21%	
8	Federal Income Tax	$ 19,119	$ 9,176	$ (9,943)

Docket No. R-2019-3010958
Schedule SLS -12 C
November 1, 2019

Twin Lakes Utilities, Inc

Summary of Operating Income
For the Rate Year Ending March 31, 2019

Line No.		Amount	
1	Rate base	$ 1,248,426	
2	Required Rate of Return	7.89%	(1)
3			
4	Net Operating Income Required	$ 98,500.79	
5	Net Operating Income at Present Rates	(55,012)	
6			
7	Required Change in Company Revenue	$ 153,513	
8			
9	Company Total Test Year Revenue	133,514	
10	OCA Proposed Revenue	$ 287,027	

Notes

(1) Direct Testimony of OCA witness Aaron Rothschild

Appendix B

OCA – Sponsored Testimony, Schedules and Exhibits

The following OCA Testimony and Schedules were admitted into the record:

Direct Testimony of Stacy L. Sherwood, OCA Statement 1

OCA Appendix A – Background and Qualifications of Stacy L. Sherwood

OCA Schedules – SLS-1, SLS-2, SLS-3, SLS-4, SLS-5, SLS-6, SLS-7, SLS-8, SLS-9, SLS-10, SLS-11, SLS-12

Surrebuttal Testimony of Stacy L. Sherwood, OCA Statement 1SR

OCA Schedules – SLS-1 C, SLS-2 C, SLS-3 C, SLS-4, SLS-5, SLS-6, SLS-7, SLS-8, SLS-9, SLS-10 C, SLS-11 C, SLS-12 C

Direct Testimony of Aaron L. Rothschild, OCA Statement 2

OCA Appendix A – Background and Qualifications of Aaron L. Rothschild

OCA Schedules – ALR-1, ALR-2, ALR-3, ALR-4, ALR-5, ALR-6, ALR-7

Direct Testimony of Terry L. Fought, OCA Statement 3

OCA Appendix A – Background and Qualifications of Terry L. Fought

OCA Exhibits – TLF-1, TLF-2, TLF-3, TLF-4

Surrebuttal Testimony of Terry L. Fought, OCA Statement 3SR

OCA Exhibit – TLF-1

PROPOSED FINDINGS OF FACT

1. Twin Lakes Utilities, Inc. (Twin Lakes or the Company) is a subsidiary of Middlesex Water Company and serves approximately 114 residential customers in Sagamore Estates, a community located within Shohola Township in Pike County, Pennsylvania. Company Filing, Additional Supporting Information No. 7.

2. On July 23, 2019, Twin Lakes filed Supplement No. 8 to Tariff Water-Pa. P.U.C. No. 4 (Supplement No. 8) with the Pennsylvania Public Utility Commission (Commission) to become effective September 19, 2019.

3. Through Supplement No. 8, Twin Lakes proposed to increase its total annual operating revenues for water service by approximately $211,793, or 158.63%. Company Filing, Sch. C.

4. Supplement No. 8 would achieve this total increase in part by increasing the residential monthly customer charge from $60.41 to $158.61, or 162%. Company filing, Additional Supporting Information No. 2.

5. If the proposed increase is approved in its entirety, the average monthly bill for a residential water customer using 2,400 gallons per month would increase from $95.23 to $250.03, or $154.80.

6. Rates for essential services, such as the provision of safe drinking water for household purposes, should be affordable for utility consumers. See 66 Pa. C.S. § 1501.

RATE BASE

Additions to Rate Base - Acquisition Adjustment

7. For water and wastewater acquisitions, a positive acquisition adjustment, when the purchase price exceeds the depreciated original cost, is permitted only when the criteria in Section 1327 are met. 66 Pa. C.S. § 1327.

8. Whether an acquisition adjustment meets the statutory criteria should be determined in the first base rate case following proposed acquisition. See 52 Pa. Code § 69.721 ("After the approval of an acquisition . . . an acquiring utility may request the inclusion of the value of the used and useful assets of the acquired system in its rate base. A request will be considered during the acquiring utility's next filed rate case proceeding.").

9. An acquisition adjustment should not be included as part of a utility's claimed rate base unless the acquisition adjustment is approved by the Commission in the base rate proceeding immediately following the approved acquisition.

10. In this case, Twin Lakes included as part of its proposed rate base a claim of $54,406 for an acquisition adjustment. OCA St. 1 at 4.

11. The Company included this same acquisition adjustment claim previously in its 2011 base rate proceeding. OCA St. 1 at 4.

12. In the 2011 rate case, the Commission approved a Settlement that did not include a provision for the acquisition adjustment claimed by Twin Lakes. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No. R-2011-2246415 Order (March 1, 2012).

13. The Company can provide "no docket number or order available specifying approval of the acquisition adjustment." OCA St. 1 at

14. The Company admitted that it cannot provide any specific Commission approval of the acquisition adjustment. OCA St. 1SR at 3.

15. Assuming arguendo that the Company's proposed acquisition adjustment was previously approved by the Commission, the acquisition adjustment should have been amortized over time. 66 Pa. C.S. § 1327(e).

16. In this case the Company is claiming an acquisition adjustment of $54,406. The typical period of time to amortize an acquisition adjustment is twenty years, and the proposed acquisition occurred on November 3, 2009. OCA St. 1 at 4.

17. The proposed acquisition adjustment, if it had been approved, should have been amortized over the last ten years.

18. If it had been approved and if it had been amortized correctly, the proposed acquisition adjustment would be $9,840 in this proceeding. OCA St. 1 at 4.

19. The Company's acquisition premium claim in this case is higher than it was in its 2011 rate case. OCA St. 1 at 4.

Deductions from Rate Base - Cash Working Capital

20. The Company calculates its cash working capital based upon 12.5%, or one-eighth, of its operations and maintenance (O&M) expense. OCA St. 1 at 9.

21. The Company proposed a cash working capital amount of $17,175. OCA St. 1 at 9.

22. Ms. Sherwood used the one-eighth method to calculate her cash working capital adjustment based on her proposed level of operation and maintenance expenses (O&M), excluding bad debt expense, depreciation expense, and taxes. OCA St. 1 at 9; Sch. SLS-9.

23. CWC allows for the company to earn a return on the capital that is required to fund the day-to-day operating costs in advance of receiving revenues. OCA St. 1SR at 4.

24. Both bad debt expense and depreciation expense are considered non-cash items, and therefore, should not be included in the calculation of CWC. OCA St. 1SR at 4.

25. A Guide to Utility Ratemaking, James H. Cawley and Norman J. Kennard, A Guide to Utility Ratemaking, 2018 Edition, prepared for the Pennsylvania Public Utilities Commission, © 1983,http://www.puc.pa.gov/General/publications_reports/pdf/Ratemaking_Guide2018.pdf (Guide) defines the CWC calculation as the average net lag (45 days) "multiplied by the total operating and maintenance expense, less purchased gas, water, or electric (depending on utility filing type); non-cash items such as depreciation and uncollectibles; and taxes, since the taxes are collected prior to payments being made." Guide at 123.

EXPENSES

Management Fees

26. Twin Lakes claimed $1,824 for management fees allocated to it by Middlesex Water. Twin Lakes Supplement No. 8 Tariff Water Pa. P.U.C. No. 4, Schedule D.

27. Middlesex Water allocates its management fees based on three factors: subsidiary revenues, subsidiary net assets, and Middlesex payroll charge. OCA St. 1, Sch. SLS-4 citing Company response to OCA, Set I, No. 2.

28. In calculating the subsidiary net assets, the Company included its original recommended acquisition adjustment claim. OCA St. 1, Sch. SLS-4 citing Company response to OCA, Set I, No. 2.

Legal Expense

29. The Company claims legal expenses of $1,001, which is 155%, or $608, more than the expense reported for the 12-month period ended March 31, 2018. Twin Lakes Supplement No. 8 to Tariff Water Pa. P.U.C. No. 4, Schedule D; OCA St. 1 at 5.

Maintenance Supplies Expense

30. The Company claims $9,509 in maintenance supplies expense, which is 2,111%, or $9,079, more than the $430 maintenance supplies expense reported for the 12-month period ended March 31, 2018. OCA St. 1 at 6.

31. The Company claims the expense is related to two main breaks which were not experienced during the 12-month period ended March 31, 2018. OCA St. 1 at 6. The test year expense is also 2.5 times higher than for the 12-month period ended March 31, 2017. OCA St. 1 at 6.

Purchased Power and Chemical Expense

32. The Company claims a purchased power expense of $10,524 and a chemical expense of $3,003. Twin Lakes Supplement No. 8 to Tariff Water Pa. P.U.C. No. 4, Schedule D.

33. The Commission's policy regarding unaccounted for water states that levels should be kept within reasonable amounts and that the Commission considers levels exceeding 20% to be excessive. 52 Pa. Code § 65.20 (4).

34. The Company's UFW data obtained from 2011-2018 Annual Reports shows the following amounts of unaccounted for water: in 2011, 82.9%; in 2012, 83.0%; in 2013, 86.3%; in 2014, 86.7%; in 2015, 82.3%; in 2016, 78.4%; in 2017, 78.9%; in 2018, 81.5%. OCA St. 3 at 7; Exhibit TLF-3.

35. Ratepayers pay for the cost of treating and pumping water into the system. OCA St. 1 at 7.

36. Unaccounted for water of 81.5% indicates that customers are paying for water loss that is 61.5% in excess of amounts identified by the Commission to be reasonable. OCA St. 1 at 7.

37. Ratepayers funding operations that require and/or result in 80 percent of the water being unaccounted for is not reasonable or adequate. OCA St. 1 SR at 8.

38. The Company's purchased power expense and chemical expense should be adjusted downward by $6,335 and $1,808, respectively, as indicated in Table II and Schedule SLS-7.

Bad Debt Expense

39. The Company claims a bad debt expense of $19,095 for 2019, representing an increase of $11,712 from the 12-month period ended March 31, 2018. Supplement No. 8 to Water Pa. P.U.C. No. 4, Schedule D.

40. Twin Lakes filed to increase rates in 2015, effective in 2016, when it experienced an increase in bad debt expense. OCA St. 1 at 8.

41. The Company reported a bad debt expense of $2,400 for 2017 and 2018. OCA St. 1 at 8.

42. There can be a correlation between higher rates and an increase in the amount of bad debt expense, but there are other factors that must be considered, including that increased rates may lead to increased efficiency or reduced usage. OCA St. 1SR at 5.

43. The Company's assumption that increased rates will lead to increased bad debt expense has not shown to be true based on the Company's historical bad debt expense. Id.

44. The Company's last rate increase went into effect in 2016. Id.

45. The Company's bad debt expense in 2016 and 2017 remained at $2,400 each year, and did not increase to $7,384 until 2019. Id.

46. The level of bad debt expense the Company is now requesting, $19,095, is 259% more than the highest amount it has reported in the last three years. Id.

47. The OCA's adjustment is based upon actual write-offs and should be adopted.

Rate Case Expense

48. The Company is requesting a 38.7-month normalization period for rate case expense. Twin Lakes St. MLT-2R at 4.

49. A 48.5-month normalization period is the average period between rate cases. OCA St. 1SR at 7.

50. The 19-month time period between the acquisition of Twin Lakes and its first rate filing should not be included in the normalization period calculation because it is not a period between rate filings.

TAXES

51. Twin Lakes forecasted $19,119 in federal income taxes and $10,105 in state income taxes. OCA St. 1 at 10.

52. The federal income tax claim needs to be adjusted to reflect the level of rate base and expenses that Ms. Sherwood recommended in her testimony. OCA St. 1 at 10.

53. Net operating losses generated from 1998 onward can be carried forward for up to 20 years. OCA St. 1 at 10.

54. It is unlikely that any state income taxes will be paid by the Company. OCA St. 1 at 10.

RATE OF RETURN

Introduction

55. Twin Lakes has claimed a rate of return of 9.0%, comprised of a 7.0% cost of debt and an 11.0% cost of equity. Twin Lakes St. No. 2 at 7.

56. The Company proposes to utilize a capital structure of 50% equity and 50% debt. Twin Lakes St. No. 2 at 7.

57. The OCA did not adjust the Company's recommended capital structure and 7.0% cost of debt recommendation. OCA St. 2 at 2.

58. The OCA presented the testimony of Aaron Rothschild to address the appropriate cost of capital for Twin Lakes. OCA St. 2.

59. An 8.78% cost of equity instead of the 11.0% claimed by the Company properly reflects the market-derived cost of capital. OCA St. 2 at 3.

50/50 Capital Structure

60. Capital structure is comprised of the type and percentages of capital supplied by investors. OCA St. 2 at 8.

61. Debt and equity are the two types of capital used by utilities. OCA St. 2 at 8.

62. The Company claims a 50% debt and 50% equity capital structure based upon a pro forma capital structure. Twin Lakes St. No. 2 at 7; OCA St. 2 at 9.

63. On average, the Water Proxy Group companies contain 49.3% common equity, while Middlesex has 54.2%. OCA St. 2 at 8.

Cost of Debt

64. The OCA did not adjust Twin Lakes' 7.0% cost of debt recommendation. OCA St. 2 at 9.

65. Twin Lakes' parent, Middlesex, has a cost of debt of 4.2%, significantly lower than the 7.0% Twin Lakes is requesting. Id. at 9.

66. Further, Twin Lakes is currently in the process of applying for a PENNVEST loan which is expected to significantly reduce its cost of debt in the future. Id. at 9.

67. The OCA is willing to accept Twin Lakes' 7.0% cost of debt at this time because of the Company's difficulty in securing credit arrangements with financial institutions as a stand-alone entity. Twin Lakes St. No. 2 at 5.

68. In the future, however, Twin Lakes' cost of debt should be set at Middlesex's 4.2% cost of debt if the Company is unable to demonstrate a good faith effort to obtain lower-cost debt financing. OCA. St. 2 at 2.

Cost of Equity

Introduction

69. Rates set at 11.0% cost of equity would overcharge consumers because it is a higher return than demanded by investors as indicated by capital market data. OCA St. 2 at 47.

70. Utility ratemaking principles do not require providing utilities with certainty in returns. Id. at 47.

71. Utilities are entitled to earn a return commensurate with returns an investor would be expected to earn on investments with similar levels of risk. Id. at 47.

72. Negative earnings do not necessarily entitle Twin Lakes to a higher rate of return. OCA St. 2 at 47.

73. Value Line publishes market-based returns relevant to this proceeding. OCA St. 2 at 47.

74. Value Line projects that investors will actually earn 2.2% on their Water Utility Investments. Id.

75. An 8.78% cost of equity based on the Discounted Cash Flow Model (DCF), including a Constant Growth and a Non-Constant Growth method applied to the Water Proxy Group using data available through August 31, 2019 is reasonable. OCA St. 2 at 2.

76. A Capital Asset Pricing Model (CAPM) was used as a check by OCA witness Rothschild on the reasonableness of the DCF indicated results. Id. at 2.

77. OCA witness Rothschild determined that the cost of equity for the average company in the Water Proxy Group is 8.78%. OCA St. 2 at 3.

78. This is towards the high-end of the range of his Constant Growth and Non-Constant Growth DCF results, which are between 6.38% and 9.13%. Id. at 3.

79. The Pennsylvania Public Utility Commission relies primarily on the use of the DCF analysis. OCA St. 2 at 4.

80. OCA witness Mr. Rothschild's DCF evaluation, which is consistent with the Commission's approach for determining cost of capital, shows a cost of capital between 6.38% and 9.13%. OCA St. 2 at 3.

81. Mr. Rothschild used the constant growth form of the DCF model. Id. at 24.

82. The constant growth form of the DCF model can be used in determining the cost of equity when investors can reasonably expect that the growth of retained earnings and dividends will be constant. OCA St. 2 at 24.

83. The model is described by this equation: $k=D/P + g$, where: k=cost of equity; D=Dividend; and P=Market price of stock at time of the analysis. And where: g=growth rate, where $g=br + sy$; b=the earnings retention rate; r=return on common equity investment (referred to below as "book equity"); y=the fraction of funds raised by the sale of stock that increases the book value of the existing shareholders' common equity; and s=the rate of continuous new stock financing. The constant growth model is therefore correctly recognized to be: $k=D/P + (br + sy)$. OCA St. 2 at 24.

84. The cost of equity demanded by investors is the sum of two factors, dividend yield and growth (dividends and stock price). Id. at 25.

85. The dividend yield is calculated based on current dividend payments, the growth of which indicates what future dividends and stock price will be. Id. at 25.

86. Mr. Rothschild obtained the values to input into the constant growth form of the DCF method by using the dividend expected over the next year. OCA St. 2 at 28.

87. A reasonable way to estimate next year's dividend rate is to increase the quarterly dividend rate by ½ of the current actual quarterly dividend rate, which provides an appropriate approximation of the rate that would be obtained if the full prior year's dividend were escalated by the entire growth rate. Id. at 28.

88. Mr. Rothschild obtained the stock Price, "P", from the closing prices of the stocks on August 31, 2019. Id. at 28.

89. Mr. Rothschild also calculated the average stock price for the 12 months ending August 31, 2019 by averaging the high and low stock prices for the year. OCA St. 2 at 29.

90. Mr. Rothschild based the future expected return on equity, "r", on the average return on book equity expected by Value Line, adjusted in consideration of recent returns. Id. at 29.

91. Mr. Rothschild also made a computation based on a review of both the earned return on equity consistent with analysts' consensus earnings growth rate expectation and on the actual earned returns on equity. Id. at 29.

92. In a stable industry such as public utilities, investors will typically look at actual earned returns on equity as one indication of what can be expected for future earned returns on book equity. See OCA St. 2, Schedule ALR 4, page 1.

93. In addition to growth caused by retention of earnings, utility companies also experience growth through sale of new common stock. OCA St. 2 at 29.

94. Mr. Rothschild quantified this growth by multiplying the amount that the actual market-to-book ratio exceeds 1.0 by the compound annual growth rate of stock that Value Line forecasts, the results of which are shown on Schedule ALR 4, page 1.

95. Pure financial theory focuses on results from the most current price of stock because investors cannot purchase stock at historical prices. OCA St. 2 at 30.

96. Schedule ALR 2 indicates that the DCF result, applied to the Water Proxy Group companies, based on both year-end stock price and on the average prices for the year ended August 30, 2019 is 8.42%. OCA St. 2, Schedule ALR 2.

97. As of August 31, 2019, the result is 9.13%. OCA St. 2, Schedule ALR 2.

98. Mr. Rothschild states that the appropriate value for "r" is the value anticipated by investors to be maintained on average in the future. OCA St. 2 at 30. Footnote [C] of Schedule ALR 4, page 1A and B shows that the average future return on equity forecast by Value Line for the Water Proxy Group for 2019-2022-2024 is 13.00%. OCA St. 2, Schedule ALR 2, Footnote [C].

99. The future expected return on equity derived from the Zacks consenus forecast is 10.71%, and that the actual returns on equity earned on average by the Water Proxy Group

companies are 10.57% in 2016, 10.59% in 2017 and 10.50% in 2018. OCA St. 2, Schedule ALR 2, Footnote [C].

100. Based on the combination of the forecast return on equity derived from the Zacks consensus, recent historical actual earned returns and Value Line's forecast, the DCF growth computation using an 11.50% value of "r" was made. OCA St. 2 at 30-31.

101. The result of the DCF analysis as outlined above is a cost of equity range between 8.42% and 9.13% for the Water Proxy Group. OCA St. 2 at 31.

102. As these results use analysts' forecasts to derive sustainable growth, in part, and analysts' forecasts of dividend growth and book value growth in the non-constant form of the DCF method, the results should be considered conservatively high. OCA St. 2 at 31.

103. Analysts' forecasts of such growth have been known to be overstated. OCA St. 2 at 31.

104. The non-constant growth form of the DCF model is implemented according to the return on investment an investor expects based on an estimate of each separate annual cash flow the investor expects to receive. Id. at 31.

105. To determine the specific non-constant growth expectation that an investor who trusts Value Line would expect, Value Line's detailed annual forecasts were incorporated into the computation. OCA St. 2 at 31-32.

106. Cash flow entry is the cash outflow an investor would experience when buying a share of stock at market price. OCA St. 2 at 32.

107. Subsequent years of cash flow are equal to dividends per share forecast by Value Line. Id. at 32.

108. For intermediate years of the forecast period in which Value Line does not provide a specific dividend, annual dividends were obtained by estimating that dividend growth would persist at a compound annual rate. Id. at 32.

109. The cash flow at the end of the forecast period consists of both the last year's dividend forecast by Value Line and the proceeds from the sale of the stock. OCA St. 2 at 32.

110. The stock price used to determine the proceeds from selling the stock was obtained by estimating that the stock price would grow at the same rate at which Value Line forecasts book value to grow. OCA St. 2 at 32.

111. Book value growth is used as it is the net result after the Company produces earnings, pays a dividend and either sells new common stock at market price or repurchases its own common stock at market price. Id. at 32.

112. Annual expected cash flows were used instead of quarterly, when dividends are paid. Id. at 33.

113. Modeling cash flows annually, while causing a small overstatement of the cost of equity, results in easier visualization and input of data. Id. at 33.

114. Further, a quarterly model would show dividends being paid sooner and earnings being available sooner, which would allow a company to compound them sooner. Id. at 33.

115. For example, since revenues are received every day, a company that is expected to receive an annual rate of 9.00% on equity would have to earn only 8.62% if the return were compounded daily. OCA St. 2 at 33.

116. The reduction from 9.00% to 8.62% would then be partially offset by the impact of the quarterly dividend payment to bring the result of switching from the simplifying annual model a bit below 9.00%. Id. at 33.

117. The DCF model still relies on earnings even though it uses cash flow expectations as the valuation parameter. OCA St. 2 at 33.

118. The model relies on an expectation of future cash flows, which come from dividends during the period the stock is owned and capital gains from the sale of the stock. Id. at 33-34.

119. As earnings impact both dividends and stock price, the non-constant DCF model still relies on earnings. Id. at 34.

120. A major strength of the DCF model is its recognition of the difference between earnings paid out as a dividend and earnings retained in the business. Id. at 34.

121. Return on earnings retained in the business that are reinvested in needed used and useful assets have the potential to earn at the return consistent with ratemaking principles. Id. at 34.

122. When an investor receives a dividend, he can either reinvest it in the same or another company or use it for other purposes, such as paying debt or living expenses. OCA St. 2 at 34.

123. If the investor purchases more stock in the same company, the transaction occurs at market price, or earns at the rate "k". Id. at 34-35.

124. When the same investor sees the value of his investment increase because earnings are retained rather than paid as dividends, the reinvestment occurs at book value, or earns at the rate "r". OCA St. 2 at 34-35.

125. When market price exceeds book value (i.e., the market-to book ratio exceeds 1.0), retained earnings are worth more than earnings paid out as dividends because "r" will be higher than "k". Id. at 35.

126. Conversely, when market price is below book value, "k" will be higher than "r", meaning that earnings paid out as dividends earn at a higher rate than retained earnings. OCA St. 2 at 35.

127. Under the non-constant DCF model, it is not necessary for earnings and dividends to grow at a constant rate for the model to accurately determine the cost of equity because the non-constant form of the DCF model separately discounts each and every future expected cash flow and does not rely on any assumptions of constant growth. Id. at 35.

128. Mr. Rothschild's non-constant growth DCF method indicates a cost of equity of between 7.57% and 9.41%. Id. at 35.

Capital Asset Pricing Model

129. Mr. Rothschild implemented the Capital Asset Pricing Model (CAPM), as a check of his DCF analysis. OCA St. 2 at 36.

130. CAPM relates return to risk. Id. at 36.

131. Specifically, it relates the expected return on an investment in a security to the risk of investing in that security. Id. at 36.

132. The riskier the investment, the greater the return. OCA St. 2 at 36.

133. Investors in a firm's equity face both firm-specific risk, such as management performance, and market risk, including impacts from the overall market such as recession. Id. at 36.

134. The CAPM predicts that for a given equity security, the cost of equity has a positive linear relationship to the sensitivity of the stock's returns to movements in the overall market (e.g., S&P 500). Id. at 36.

135. A security's market sensitivity is measured by its beta. OCA St. 2 at 37.

136. The higher the beta of a stock, the higher the company's cost of equity—the return required by the investor to invest in the stock. Id. at 37.

137. The standard CAPM formula is as follows: $K = Rf + \beta i * (Rm - Rf)$; Where: K is the cost of equity; Rf is the risk-free interest rate; Rm is the expected return on the overall market (e.g., S&P 500); [Rm – Rf] is the premium investors expect to earn above the risk-free rate for investing in the overall market ("equity risk premium" or "market risk premium"); and βí (Beta) is a measure of non-diversifiable, or systematic, risk. OCA St. 2 at 37.

138. To implement the CAPM, the appropriate values were determined for the three model inputs: Risk Free Rate, Beta, and Equity Risk Premium. Id. at 37.

Risk Free Rate

139. Mr. Rothschild chose to use a risk-free rate of 1.78% based on short-term U.S. Treasury bonds (3-months as of October 2, 2019) because those bonds have a negligible risk of default, and because their value has a relatively low exposure to overall market movement. OCA St. 2 at 38.

140. Some financial textbooks recommend a risk-free rate based on subtracting the historical spread between long and short-term U.S. Treasury bonds. OCA St. 2 at 38.

141. This method was not used, however, because in the current capital markets it results in an unreasonably low risk-free rate. Id. at 38.

Beta

142. As the cost of equity should be based upon investor expectation, Mr. Rothschild used two betas based on forward-looking investor expectations of non-diversifiable risk. Id. at 38.

143. Most published betas are based on historical return data, but it is possible to calculate betas based on investor expectation of the probability distribution of future returns. OCA St. 2 at 39.

144. Mr. Rothschild chose to use both historical returns and option-implied betas based on investor expectations. Id. at 40.

145. Option-implied betas were used because studies have found that betas calculated based on investor expectations (option-implied) provide information regarding future perceived risks and expectations. Id. at 40.

146. Mr. Rothschild used the following two betas in his CAPM analysis: Hybrid beta: 50% Option-Implied Beta (6 months) = 25% Historical Beta (6 months) + 15% Historical Beta (2 years) + 10% Historical Beta (5 years). OCA St. 2 at 41; and Forward Beta: 100% Option-Implied Beta (6 months). OCA St. 2 at 41.

Historical Beta Calculations

147. Historical betas were calculated following the methodology used by Value Line. OCA St. 2 at 41.

148. The only major difference between Mr. Rothschild's calculations and Value Line's calculations is that Value Line uses the NYSE Composite Index and Mr. Rothschild used the S&P 500 Index as the market index. OCA St. 2 at 42.

Option-Implied Beta Calculations

149. In calculating the Option-Implied Beta, Mr. Rothschild used publicly-available trading information for all the options for a given security (company or index) for a complete trading day. OCA St. 2 at 43.

150. Calculating option-implied betas requires (1) obtaining stock option data for that company and a market index, (2) filtering the stock option data, (3) calculating the option-implied volatility for the company and for the index, (4) calculating the option-implied skewness for the company and for the index, and (5) calculating option-implied betas for the company based on implied volatility and skewness for the company and for the index. Id. at 43.

151. Mr. Rothschild used the same methodology used by the Chicago Board of Options Exchange (CBOE) in calculating the Volatility Index (VIX) and SKEW Index. Id. at 43.

Equity Risk Premium

152. Mr. Rothschild's equity risk premium is the expected return on the S&P 500 minus the risk-free rate described above. OCA St. 2 at 45.

153. Mr. Rothschild calculated an expected return on the S&P 500 by using stock options traded on this index. Id. at 45.

154. The implied volatility for options with an expiration period of one year was approximately 0.19, which indicates that the market expects the standard deviation of future annual price movements of the S&P 500 to be 19%. Id. at 45.

155. Based on this market expectation, Mr. Rothschild considered two growth rates in the DCF analysis he used to calculate the equity risk premium component of his CAPM, a base S&P 500 growth of 7.44% and a high S&P 500 growth of 10.13%. OCA St. 2 at 45.

156. The CAPM result is 8.49%, as indicated on Schedule ALR-2. Id. at 45.

Conclusion

157. The market-based cost of equity for Twin Lakes is 8.78%. OCA St. 2 at 48.

158. Mr. Rothschild's overall rate of return recommendation of 7.89%, based on a pro forma capital structure of 50% debt and 50% equity, and Twin Lakes' cost of debt of 7.0% should be considered a market-based cost of capital.

159. Ms. Tilley's 11% cost of equity is excessive.

160. The fair rate of return in this case should reflect a zero return on equity due to inadequate service.

QUALITY OF SERVICE

Background

161. Historically, the Company has sourced its water from two wells—Well #1 and Well #2. OCA St. 3 at 2.

162. Well #1 collapsed and no longer provides the Company with a source for water. OCA St. 3 at 2.

163. Well #2 is currently the Company's sole source of water, but Well #2 is now at risk of collapse due to the over-pumping of Well #2 to compensate for the loss of Well #1. OCA St. 3 at 4.

164. The Company's distribution system experiences excessive levels of unaccounted-for water (UFW). OCA St. 3 at 5-7.

165. Middlesex Water received approval from the Commission to acquire Twin Lakes in March 2009. Joint Application of Middlesex Water Company and Twin Lakes Water Services, LLC, for Approval of The Transfer by Sale of Twin Lakes to Middlesex, Docket No. A-2009-2050092 Order (March 2, 2009).

166. The acquisition occurred in November 2009.

167. Twin Lakes has filed rate increase requests in 2011, 2015, and the current request in 2019.

168. On June 10, 2011, Twin Lakes filed a request to increase revenues by $124,420, or 368%. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No .R-2011-2246415. (2011 Rate Case).

169. The Commission approved an Amended Joint Petition for Settlement of Rate Investigation (2011 Settlement) on March 1, 2012. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No. R-2011-2246415 Order (March 1, 2012).

170. The 2011 Settlement provided for increased revenues of $42,060, or 124%, starting with an increase of $21,060, followed by two additional increases phased in over the next two years.

171. In exchange, Twin Lakes was required to reduce UFW from 55% to 49.5% within 18 months; conduct an annual pressure survey as required by Commission regulation, and provide an annual bill insert to describe how it would notify its customers about boil water advisories or other emergency situations. 2011 Settlement at ¶¶7. c., d., and h.

172. On November 16, 2015, Twin Lakes filed a rate increase request asking for additional revenues of $195,287, or 257%. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No .R-2015-2506337 (2015 Rate Case).

173. The Commission approved a Joint Petition for Settlement of Rate Investigation (2015 Settlement) on June 9, 2016. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No. R-2015-2506337 Order (June 9, 2016).

174. The settlement of the 2015 rate case provided for an increase in revenues of $125,000, or 164.54% increase over three years, including an immediate 82% increase ($62,500) along with two subsequent increases based on specific improvements being made to trigger phases 2 and 3. 2015 Settlement at ¶6.

175. The 2015 Settlement required Twin Lakes to, inter alia, replace Well #1 to trigger the second phase of the rate increase (additional 25%) (¶ 7.c.1); install and/or replace various mains in the distribution system to trigger the third phase of the rate increase (additional 25%) (¶ 7.c.2), and send outage alert billing inserts two times per year (¶ 7.h), and pressure readings protocol for customers complaining about low pressure, as well as a commitment to increase pressure by a certain amount when it replaced Well #1 (¶ 7.k).

176. On October 23, 2018, Twin Lakes filed an Application to Abandon service. Application of Twin Lakes Utilities, Inc. for all approvals and waivers (if any) which may be required under the Public Utility Code for the Abandonment of Service, Docket No. A-2018-3005590 (Application to Abandon).

177. In its Application, Twin Lakes described the state of the distribution system and the wells, and the necessary capital expenditures to fix the problems that exist. See Application to Abandon, Exhibits B and C.

178. On October 25, 2018, a Secretarial Letter was issued to Twin Lakes in which the Application was rejected because Twin Lakes did not provide a buyer or alternative to the existing water service.

179. On October 29, 2018 Twin Lakes filed an appeal of staff action regarding the rejection of the Application.

180. On February 28, 2019, the Commission entered an order denying Twin Lakes' appeal.

Unaccounted For Water

181. High levels of Unaccounted for Water (UFW) have been a long-standing problem with the Twin Lakes system.

182. As shown on Section 500 of the PUC Annual 1 Report forms, Unaccounted For Water is equal to "Total Water Delivered for Distribution & Sale" minus "Total Sales" minus "Non-Revenue Usage and Allowance." "Non-Revenue Usage and Allowance" includes "Main Flushing," "Blow-off Use," "Unavoidable Leakage," and "Located & Repaired Breaks in Mains & Services." OCA St. 3 at 6.

183. In general, UFW is a method of estimating the amount of water wasted in a water distribution system by leaks and inaccurate meter readings. OCA St. 3 at 6.

184. Reducing the wasted water saves money in chemical and power costs and provides for important water conservation in areas that have limited water supply sources. OCA St. 3 at 6.

185. The accuracy of the UFW estimate depends on reliable estimates of unavoidable non-metered water uses such as flushing the distribution system, firefighting, normal pipe leakage, repaired main breaks, etc. OCA St. 3 at 6.

186. Keeping track of UFW gives a water utility an indication of the extent of unknown leaks in the distribution system so that informed decisions can be made on the necessity of finding and repairing leaks. OCA St. 3 at 6.

187. The Water Audit methodology, established by the International Water Association (IWA) and the American Water Works Association (AWWA) is generally becoming a more accepted method of identifying the amounts of wasted water. OCA St. 3 at 6.

188. Both methods, if properly utilized, provide water utilities with information needed to improve operational efficiency. OCA St. 3 at 6.

189. According to the 52 Pa. Code § 65.20 (4) "Levels of the unaccounted-for water should be kept within reasonable amounts. Levels above 20% have been considered by the Commission to be excessive." OCA St. 3 at 6.

190. From 2011-2018, as reported on Twin Lakes' Annual Report filed with the Commission, Twin Lakes' UFW ranged from 78.4% to 86.7%. OCA St. 3 at 6-7; Exhibit TLF-3.

191. From 2011-2018, steps to reduce the high levels of unaccounted for water were addressed in the 2011 and 2015 Settlements.

192. In the 2011 Settlement, Twin Lakes agreed to reduce UFW by 10% of the then current level and had 18 months to do so. 2011 Settlement at ¶ 7.c.

193. In the 2015 Settlement the parties agreed that Twin Lakes would receive an additional $31,250 or 25% of the total increased revenue requirement agreed to by the parties when Twin Lakes completed the following distribution system projects: install a new supply main that will connect the replacement Well #1 to the distribution system; (b) replace 4,000 feet of main, in-kind by diameter, in connection with the following streets: Warpath Place (500 feet), Kenny Road (1,000 feet), Dylan Road (1,000 feet), Susan Road (1,000 feet) and Rock Place (500 feet). Twin Lakes shall retain the right to substitute different streets for this main replacement obligation provided that this obligation remains at minimum 4,000 feet in the aggregate; (c) replace Twin Lakes owned service lines in conjunction with the main installation and replacements identified in this subparagraph; and (d) install a new air relief valve. 2015 Settlement Petition at ¶ 7.c.2.

194. The requirements in the 2015 settlement were not completed. OCA St. 3 at 4.

195. The proposed main interconnecting the replacement well to the distribution main is 0% complete. OCA St. 3 at 4.

196. The proposed air relief valve is 0% complete. OCA St. 3 at 4.

197. Twin Lakes only installed 2,790 of main instead of the 4,000 feet agreed to." OCA St. 3 at 4; Exhibit TLF-1.

198. The Phase 3 increase in the 2015 Settlement did not go into effect.

199. Despite the specific settlement provisions in 2011 and 2015, the extremely high level of UFW has not noticeably improved. OCA St. 3 at 7.

200. The highest level of UFW (86.7%) was in 2014. See OCA St. 3 at 7.

201. The level of UFW reported in 2018 (81.5%) was only 1.4% lower than the 2011 level (82.9%) and the 2018 level was part of a three-year upward trend. OCA St. 3 at 7.

202. Pumping so much water increase the costs of power and chemicals.

203. Pumping so much water adversely impacts Well #2, because it is making it necessary to overpump the well. OCA St. 3 at 5.

204. The distribution system improvements are critically important to the provision of safe, adequate, and reliable service. OCA St. 3 at 5.

205. From an operations viewpoint, those portions of the distribution system that are causing excessive UFW should be replaced to prevent damage to Well #2 by over-pumping and to reduce electrical and chemical costs for pumping and treating excessive UFW. OCA St. 3 at 5.

206. During 2018 Well #2 was pumped 4.5 times more than necessary to serve the customers' demand for water with 20% UFW. OCA St. 3 at 5.

207. Twin Lakes has estimated that it will take $2.8 million from 2020-2024 to replace the remaining distribution system mains and service. Twin Lakes St. No. 3 at 3-4; OCA St. 3 at 5.

208. It is not feasible for the 114 customers to pay rates that would result from such a large investment in the system, nor is it feasible to expect that the water supply will be able to continue to be operated with such excessive levels of UFW.

Reliability of the Source of Supply

209. The Company's water supply source consists of Well #2 with a safe yield of approximately 50 gallons per minute (gpm) or 72,000 gallons per day (gpd). OCA St. 3 at 2.

210. A second well, Well #1, is no longer usable because the well hole collapsed. OCA St. 3 at 2.

211. In the settlement of its 2015 rate case, Twin Lakes agreed to replace Well # 1. Joint Petition for Settlement of Rate Investigation (2015 Settlement) at ¶ 7.b. Pa. P.U.C. v. Twin Lakes Utilities, Docket No. R-2015-2506337, Recommended Decision at 27 (May 9, 2016).

212. The Commission approved the Settlement Petition. Pa. P.U.C. v. Twin Lakes Utilities, Inc., Docket No. R-2015-2506337, Order at 2 (June 9, 2016).

213. Twin Lakes did not replace Well # 1 and Phase 2 of the 2015 Settlement rates did not go into effect. See OCA St. 3 at 3; Exhibit TLF-1.

214. According to an evaluation of the Company's system by B. F. Environmental Consultants, Inc. dated September 1, 2014: (1) over-pumping of Well #2 may have been the cause of the collapse of the Well #1 well hole and may be threatening to destabilize the Well #2 well hole. See Exhibit TLF-2, pg. 2.

215. The continuous over-pumping of Well #2 could subject the well to "surface water influence," destabilization of the well hole and other potential problems. See Exhibit TLF-2, pg. 2.

216. If the water in Well #2 becomes subject to "surface water influence," then the Company will have to install a water filtration treatment plant if it wants to continue to use Well #2 in order to comply with the PA Filter Rule (25 Pa. Code §109.202(c)(1)). OCA St. 3 at 4.

217. From an operations viewpoint, the replacement Well for Well #1 should be completed and connected to the distribution system as soon as possible to prevent a costly emergency if Well #2 becomes destabilized or subject to "surface water influence". OCA St. 3 at 4.

218. The 2015 Settlement specifically provided that Twin Lakes would replace Well #1 and in exchange would receive additional revenues.

219. Twin Lakes, in its 2018 Application to Abandon stated that replacement of Well #1 was one of a number of critically necessary steps. Application at 2.

220. Twin Lakes estimates that its cost to replace Well #1 would be $1,600,000 in addition to the $611,375, the amount recorded in Construction Work in Progress for this project. Twin Lakes St. 3 at 3-4.

221. In the 2018 Application to Abandon, Twin Lakes stated that the cost of Well #1 would be extremely expensive for its 114 customers, and along with other necessary costs, would drive rates to approximately $3,800 per customer per year. 2018 Application to Abandon at 2-4.

222. If Well #1 is replaced, it will be necessary to rehabilitate Well #2 at an estimated cost of $400,000. 2018 Application to Abandon at 4.

Exceedance of Lead Action Level

223. During the course of this proceeding, on November 18, 2019, the OCA was contacted by a customer who had received a notice, dated November 13, 2019, titled "Important information about Lead in your Drinking Water". OCA St. 3SR at 3; Exhibit TLF-5.

224. The notice resulted from water sampling on August 18 and follow up sampling on September 15, 2019 as part of the Company's routine lead and copper monitoring pursuant to 25 Pa. Code § 109.1101. OCA St. 3SR at 3; Exhibit TLF-5.

225. The Company did not address this issue in its rebuttal testimony filed on November 20, 2019.

226. Mr. Fought made a series of recommendations that will require the Company to inform its customers of the availability of testing for lead levels at an individual's home, the steps that customers can take to reduce exposure to lead in drinking water, and permit the parties to receive information on testing and other steps that Twin Lakes will take to comply with the Department of Environmental Protection's (DEP) regulations regarding the lead action level exceedance. OCA St. 3SR at 4-5.

227. These recommendations were reflected in the Appendix B of the Stipulation that the parties entered into and was submitted to the ALJ on December 17, 2019.

228. The Stipulation was approved by the ALJ on December 18, 2019.

Public Input Testimony

229. Public input hearings were held in Shohola Township, Pike County on October 17, 2019.

230. Eight customers testified regarding the proposed rate increase and quality of service issues.

231. During the public input hearings, a customer testified about not being notified when a Boil Water Advisory is lifted. Tr. 86.

232. The Company uses an automated phone call to notify customers that a Boil Water Advisory is being issued. OCA St. 3SR at 2.

233. A customer testified that he was discriminated against by the Company because of the way he spoke English. He testified that his phone call about a water outage was answered and transferred to another two Company representatives that could respond to his concerns, and then he was hung up on. Gerasimos Xenatos, Tr. 90, ln 19-23; Tr. 91, ln 18-24; Tr. 92, ln 17-25.

234. A customer complained about a water meter installation underneath his house. Jeremy Monz, Tr. 104, ln 17-24.

The Appropriate Remedy For The Inadequate Service Is The Reduction of the Cost of Equity.

235. Twin Lakes estimates that costs to replace Well #1 and rehabilitate Well #2 would result in rates of $3,800 per customer per year. 2018 Application to Abandon at 4; Exh. C.

236. When the distribution system replacement costs of $3,100,000 are added, it would more than double the current estimated cost of the projects and would likely have a similar impact on the estimated rates. OCA St. 1 at 14.

AFFORDABILITY

237. The Company's proposed rates violate ratemaking principles because increasing rates as the Company has proposed, will result in rate shock that violates the important ratemaking principle of gradualism and it is likely that the average $155 monthly increase may not be affordable for some customers. OCA St. 1 at 12.

238. The rate shock would be present not only at the Company's proposal but also at the OCA's calculated revenue requirement, with the full cost of capital calculated by Mr. Rothschild as well as at the zero return on equity to reflect inadequate service, as recommended by OCA. OCA St. 1 at 12-14.

239. The OCA's calculated revenue requirement, with a full cost of capital, would result in an increase of about $115 per month for a customer using 2,400 gallons per month, or about $162 per month for a customer using 5,000 gallons per month. See OCA St. 1 at 12-13; Sch. SLS-12 C.

240. At the OCA's recommended revenue requirement including a zero return on equity, the average customer's bill would increase to $170 per month for 2,400 gallons per month, or to $239 per month for 5,000 gallons per month. OCA St. 1 at 13; Sch. SLS-12 C.

241. Twin Lakes' proposed rates in comparison to the rates of the major water utilities in the Commonwealth are significantly in excess of the rates assessed by the major water utilities in the Commonwealth. OCA St 1 at 11.

242. Rates must set at just and reasonable levels. 66 Pa. C.S. § 1301.

243. If rates are too high, then not only does that violate the basic principles of rate setting, it will result in customers not being able to afford water utility service. OCA St. 1 at 13-15.

244. Twin Lakes' proposed rate of $250 per month for a customer using 2,400 gallons per month would be more than 7% of the median household income (MHI) in Shohola Township. OCA St. 1 at 13.

245. The United States Environmental Protection Agency (EPA) reported that an annual bill of greater than 2% of MHI may be difficult for the consumer. OCA St. 1 at 13, note 17.

246. The Pennsylvania Infrastructure Investment Authority (Pennvest) calculates affordable rates as being between 1% and 2% of Adjusted MHI (adjusted for inflation) based on the socioeconomic condition of the community. OCA St. 1 at 13, note 17.

247. At the OCA's proposed revenue requirement, at full rate of return, the resulting rates would be at 7% of MHI for Shohola Township. OCA St. 1 at 13.

248. At the OCA's revenue requirement reflecting a zero return on equity, the rates would represent 5.5% of MHI in Shohola Township. OCA St. 1 at 13.

249. There is no level of revenue requirement proposed in this case that would set rates that are anywhere near the normal ranges of affordability.

250. The concerns of gradualism, rate shock and affordability do not go away after this case because Twin Lakes is projecting more than $3,100,000 of capital improvements that are not reflected in this rate case. OCA St. 1 at 14.

251. The Company's Pennvest filing requested $4,825,000 of capital improvements. OCA St. 1 at 14, footnote 18.

252. Using the more conservative capital improvement number of $3,100,000, rate base would increase by 331% and increase Twin Lakes' cost of service by an additional 173%, using OCA's calculated return on equity. OCA St. 1 at 14.

PROPOSED CONCLUSIONS OF LAW

1. Twin Lakes Utilities, Inc. bears the burden of proving by a preponderance of the evidence the justness and reasonableness of every element of its requested rate increase and that it provides adequate water service to its customers. 66 Pa. C.S. §§ 315(a), 332(a), and 1501.

2. Twin Lakes Utilities, Inc. has not met its burden of proving by a preponderance of the evidence every element of its requested rate increase. 66 Pa. C.S. §§ 315(a), 332(a).

3. Twin Lakes Utilities, Inc. has not met its burden of proving that it provides "adequate, efficient, safe, and reasonable service and facilities" for its water and wastewater systems as required of Section 1501 of the Public Utility Code, 66 Pa. C.S. § 1501.

4. The rates as submitted by Twin Lakes Utilities, Inc. in Supplement No. 8 to Tariff Water Pa. PUC No. 4 are unreasonable and unjust.

5. The water provided by Twin Lakes Utilities, Inc. is not reliable or suitable for basic household purposes, and as such Twin Lakes Utilities, Inc. is failing to provide "adequate, safe, and reasonable service" in violation of 66 Pa. C.S. § 1501. See Pa. P.U.C. v. Pa. Gas and Water Co., 61 Pa. PUC 409, 416, 74 PUR4th 238, 245 (1986); Pa. P.U.C. v. Pennsylvania-American Water Co., 71 Pa. PUC 210, 218-19 (1989); Pa. P.U.C. v. Nat'l Utils., Inc., 87 Pa. PUC 1, 5 (1997).

6. Twin Lakes Utilities, Inc. is obligated to remedy any deficiencies in its system to ensure that its customers receive "adequate, efficient, safe, and reasonable service." 66 Pa. C.S. § 501, 1501.

7. The Commission has the authority to require Twin Lakes Utilities, Inc. to take steps necessary to provide adequate service. 66 Pa. C.S. § 501, 1501.

8. In exchange for customers paying rates for utility service, Twin Lakes Utilities, Inc. is obligated to provide safe, adequate, and reasonable service. 66 Pa. C.S. §§ 523, 1501.

9. The Commission has the authority and obligation to deny a rate increase, in whole or in part due to inadequate service. 66 Pa. C.S. §§ 501, 523, 526, 1501.

10. The Commission has the authority to open an investigation into a mandatory takeover of the water system. 66 Pa. C.S. § 529.

PROPOSED ORDERING PARAGRAPHS

IT IS ORDERED:

1. That Twin Lakes Utilities, Inc. shall not place into effect the rates contained in its Tariff Water – Pa. P.U.C. No. 4, Supplement No. 8, the same having been found to be unjust, unreasonable, and therefore unlawful.

2. That Twin Lakes Utilities, Inc. is authorized to file water tariffs, tariff supplements or tariff revisions containing rates, rules and regulations to produce annual revenues not in excess of $232,202, which is an increase over present revenues of $98,688, consistent with this Opinion and Order.

3. That the Office of Consumer Advocate's Complaint filed at C-2019-3011845 be sustained consistent with this Opinion and Order.

4. That the following Complaints be sustained consistent with this Opinion and Order:

Irene Blanchard	:	C-2019-3011969
Jeffrey Shatt	:	C-2019-3012087
Ciro Matrecano	:	C-2019-3012169
Neil and Kathleen Joyce	:	C-2019-3012221
Lisa Celenza	:	C-2019-3012272
Tami DeFrancesco	:	C-2019-3012332
Virginia Pfeiffer	:	C-2019-3012399
Charles Dellert	:	C-2019-3012487
James Gelardi	:	C-2019-3012659
Frank and Shuko Kashimba	:	C-2019-3012667

5. That this docket shall be marked closed.