

RHODE ISLAND PUBLIC UTILITIES COMMISSION

DEPRECIATION STUDY

DIRECT TESTIMONY

OF

JOHN J. SPANOS

ON BEHALF OF

SUEZ WATER RHODE ISLAND

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1 **SUEZ WATER RHODE ISLAND**

DIRECT TESTIMONY OF

JOHN J. SPANOS

2 **I. INTRODUCTION AND WITNESS QUALIFICATIONS**

3 **Q. Please state your name and business address.**

4 **A.** My name is John J. Spanos and my business address is 207 Senate Avenue, Camp
5 Hill, Pennsylvania 17011.

6 **Q. By whom are you employed and in what capacity?**

7 **A.** I am employed with the firm of Gannett Fleming Valuation and Rate Consultants, LLC
8 ("Gannett Fleming"). I am the Senior Vice President.

9 **Q. How long have you been associated with Gannett Fleming?**

10 **A.** I have been associated with the firm since June 1986.

11 **Q. What is your educational background?**

12 **A.** I have Bachelor of Science degrees in Industrial Management and Mathematics from
13 Carnegie-Mellon University and a Master of Business Administration from York College.
14 Additional information regarding coursework I have completed relating to utility plant
15 depreciation, as well as my membership in professional societies and professional
16 certifications, is provided in Appendix A.

17 **Q. Please state your qualifications.**

18 **A.** I have 32 years of depreciation experience, which includes giving expert testimony in
19 over 260 cases before 40 regulatory commissions. Please refer to Appendix A for my
20 qualifications.

21 **Q. On whose behalf are you testifying in this proceeding?**

22 **A.** I am testifying on behalf of SUEZ Water Rhode Island ("SWRI" or the "Company").

1 **II. PURPOSE AND IDENTIFICATION OF EXHIBITS**

2 **Q. What is the purpose of your direct testimony in this proceeding?**

3 **A.** The purpose of my testimony is to set forth the results of my review and analyses of the
4 plant in service of SUEZ Water Rhode Island ("SWRI"), which was conducted in the
5 process of preparing the depreciation study of the Company's water plant assets as of
6 December 31, 2016. A report of my review and analyses are contained in SWRI Exhibit
7 JJS-1, titled "2016 Depreciation Study – Calculated Annual Depreciation Accruals
8 Related to Water Plant as of December 31, 2016".

9 **Q. Are you sponsoring an exhibit in support of your direct testimony?**

10 **A.** Yes. I am sponsoring the Depreciation Study as SWRI Exhibit JJS-1. SWRI Exhibit
11 JJS-1 is a true and accurate copy of the report setting forth the results of my
12 depreciation study for SWRI.

13 **III. BACKGROUND**

14 **Q. Please define the concept of depreciation.**

15 **A.** "Depreciation, as applied to depreciable public utility plant, means the loss in service
16 value not restored by current maintenance, incurred in connection with the consumption
17 or prospective retirement of utility plant in the course of service from causes which can
18 be reasonably anticipated or contemplated, against which the Company is not protected
19 by insurance. Among the causes to be given consideration are wear and tear, decay,
20 action of the elements, inadequacy, obsolescence, changes in the art, changes in
21 demand, and the requirements of public authorities."

22 **Q. What are the primary causes for changes in depreciation rates?**

23 **A.** Depreciation rates are affected by service life and net salvage parameters. These
24 parameters are determined based on a combined statistical analysis and informed

1 judgment of each asset class. Informed judgments of each asset class are developed
2 based on field inspections and discussions with management with regard to plans and
3 outlook of assets.

4 **IV. SUMMARY OF CONCLUSIONS**

5 **Q. What is the composite depreciation rate resulting from the Study?**

6 **A.** The composite rate for water assets is 2.46 percent as shown on page VI-5 of SWRI
7 Exhibit JJS-1.

8 **Q. What is your professional opinion with regard to the results of the Study that you
9 performed?**

10 **A.** In my opinion, the proposed depreciation rates resulting from the completed
11 Depreciation Study are reasonable and appropriate given that they incorporate the
12 service life and net salvage parameters currently anticipated for each of the Company's
13 property group investments over their average remaining lives.

14 **V. DEPRECIATION STUDY**

15 **Q. Please summarize how you performed your Study.**

16 **A.** In the study that I performed and that are the basis for my testimony, I used the straight
17 line remaining life method of depreciation, with the average service life procedure to
18 develop recommended depreciation accrual rates. The total annual depreciation is
19 based on a system of depreciation accounting which aims to distribute the cost of fixed
20 capital assets over the estimated useful life of the unit, or group of assets, in a
21 systematic and rational manner.

22 For General Plant Accounts 340.1, 340.2, 340.21, 340.3, 343, 346 and 347 for
23 water assets, I used the straight line method of amortization. The annual amortization
24 is based on amortization accounting which distributes the unrecovered cost of fixed

1 capital assets over the remaining amortization period selected for each account and
2 vintage.

3 **Q. How did you determine the recommended annual depreciation accrual rates?**

4 **A.** The determination of annual depreciation accrual rates consists of two phases. In the
5 first phase, service life and net salvage characteristics are estimated for each
6 depreciable group, that is, each plant account or subaccount identified as having similar
7 characteristics. In the second phase, the annual depreciation accrual rates are
8 calculated based on the service life and net salvage estimates determined in the first
9 phase.

10 **Q. Please describe the first phase of the study, that is, the manner in which you**
11 **estimated the service life and net salvage characteristics for each depreciable**
12 **group.**

13 **A.** The service life and net salvage study consisted of compiling historical data from
14 records related to the Company's plant; analyzing these data to obtain historical trends
15 of survivor and salvage characteristics; obtaining supplementary information from
16 management and operating personnel concerning the Company's practices and plans
17 as they relate to plant operations; and interpreting the above data to form judgments of
18 average service life and net salvage characteristics.

19 **Q. What historical data did you analyze for the purpose of estimating the service life**
20 **characteristics of the Company's plant?**

21 **A.** The data consisted of the entries made by the Company to record plant transactions
22 through 2016. The transactions included additions, retirements, transfers and the
23 related balances. The Company, in accordance with my instructions, classified the data

1 by depreciable group, type of transaction, the year in which the transaction took place,
2 and the year in which the plant was installed.

3 **Q. What method did you use to analyze this service life data?**

4 **A.** I used the retirement rate method. That method is the most appropriate when aged
5 retirement data are available, because it develops the average rates of retirement
6 actually experienced during the period of study. Other methods of life analysis infer the
7 rates of retirement based on a selected type survivor curve.

8 **Q. Please describe the results of your use of the retirement rate method.**

9 **A.** Each retirement rate analysis resulted in a life table which, when plotted, formed an
10 original survivor curve. Each original survivor curve as plotted from the life table
11 represents the average survivor pattern experienced by the several vintage groups
12 during the experience band studied. Inasmuch as this survivor pattern does not
13 necessarily describe the life characteristics of the property group, interpretation of the
14 original curves is required in order to use them as valid considerations in service life
15 estimation. Iowa type survivor curves were used in these interpretations.

16 **Q. Please explain briefly what an "Iowa-type survivor curve" is and how you use it
17 in estimating service life characteristics for each depreciable group.**

18 **A.** The range of survivor characteristics usually experienced by utility and industrial
19 properties is encompassed by a system of generalized survivor curves known as the
20 Iowa type curves. The Iowa curves were developed at the Iowa State College
21 Engineering Experiment Station through an extensive process of observation and
22 classification of the ages at which industrial property had been retired.

23 Iowa type curves are used to smooth and extrapolate original survivor curves
24 determined by the retirement rate method. The Iowa curves and truncated Iowa curves

1 were used in this study to describe the forecasted rates of retirement based on the
2 observed rates of retirement and the outlook for future retirements.

3 The estimated survivor curve designations for each depreciable group indicate
4 the average service life, the family within the Iowa system and the relative height of the
5 mode. For example, the Iowa 50-R3 indicates an average service life of fifty years; a
6 right-moded, or R, type curve (the mode occurs after average life for right-moded
7 curves); and a moderate height, 3, for the mode (possible modes for R type curves
8 range from 1 to 5).

9 **Q. What historical data did you analyze for the purpose of estimating net salvage
10 characteristics?**

11 **A.** The data consisted of the entries made by the Company to record retirements, cost of
12 removal and gross salvage during the period 2005 through 2016 for water assets

13 **Q. What method did you use to analyze this net salvage data?**

14 **A.** The net salvage data were analyzed by expressing the net salvage and its two
15 components, cost of removal and gross salvage, as percents of the original cost retired
16 on annual, three-year moving average and most recent five-year average bases. The
17 use of averages smooths the annual fluctuations and assists in identifying underlying
18 trends.

19 **Q. Please describe the manner in which you used the analyses of net salvage to
20 estimate net salvage percents.**

21 **A.** The results of the net salvage analyses provided indications of historical net salvage
22 levels. The judgments of net salvage incorporated these historical indications and
23 consideration of estimates made for other water companies.

1 **Q. Please describe the second phase of the process that you used, that is, the**
2 **calculation of annual depreciation accrual rates.**

3 **A.** After I estimated the service life and net salvage characteristics for each depreciable
4 group, I calculated annual depreciation accrual rates for each group in accordance with
5 the straight line remaining life method, using the average service life procedure.

6 **Q. What group procedure is being used in this proceeding for depreciable**
7 **accounts?**

8 **A.** The average service life procedure is used in the current proceeding for all depreciable
9 accounts and installation years.

10 **Q. Please describe briefly the amortization of certain General Plant accounts.**

11 **A.** General Plant Accounts 340.1, 340.2, 340.21, 340.3, 343, 346 and 347 for water assets
12 include a very large number of units, but represent less than 5 percent of depreciable
13 water plant. Depreciation accounting is difficult for these assets, inasmuch as periodic
14 inventories are required to properly reflect plant in service. In amortization accounting,
15 units of property are capitalized in the same manner as they are in depreciation
16 accounting. However, retirements are recorded when a vintage is fully amortized rather
17 than as the units are removed from service. That is, there is no dispersion of retirement.
18 All units are retired when the age of the vintage reaches the amortization period.

19 **Q. Please outline the contents of your report.**

20 **A.** My report is presented in nine parts. Part I, Introduction, presents the scope and basis
21 for the depreciation study. Part II, Estimation of Survivor Curves, includes descriptions
22 of the methodology of estimating survivor curves. Parts III and IV set forth the analysis
23 for determining life and net salvage estimates. Part V, Calculation of Annual and
24 Accrued Depreciation, includes the concepts of depreciation and amortization using the

1 remaining life. Part VI, Results of Study, presents a description of the results of my
2 analysis and a summary of the depreciation calculations. Parts VII, VIII and IX include
3 graphs and tables that relate to the service life and net salvage analyses and the
4 detailed depreciation calculations by account.

5 SWRI Exhibit JJS-1, Table 1 on pages VI-5 and VI-6 presents the estimated
6 survivor curve, the net salvage percent, the original cost as of December 31, 2016, the
7 calculated annual depreciation accrual amount and rate, book depreciation reserve,
8 future accruals and the composite remaining life for each account or subaccount. The
9 section beginning on page VII-2 presents the results of the retirement rate analyses
10 prepared as the historical bases for the service life estimates. The section beginning
11 on page VIII-2 presents the results of the analyses of historical net salvage data. The
12 section beginning on page IX-2 presents the depreciation calculations related to
13 surviving original cost as of December 31, 2016.

14 **Q. Please use an example to illustrate the manner in which the studies are presented**
15 **for this report.**

16 **A.** I will use the analysis for Account 311.00, Pumping Equipment, of SWRI Exhibit JJS-1
17 as an example because this is one of the largest depreciable mass account and
18 represents approximately five percent of depreciable plant.

19 The retirement rate method was used to analyze the survivor characteristics of
20 this property group. Aged plant accounting data was compiled from 2008 through 2016
21 and analyzed in periods that best represent the overall service life of this property. The
22 life table for the 2008-2016 experience band is presented on pages VII-14 and VII-15
23 of the report. The life table displays the retirement and surviving ratios of the aged plant
24 data exposed to retirement by age interval. For example, page VII-14 shows \$4,250

1 retired at age 12.5 with \$999,372 exposed to retirement. Consequently, the retirement
2 ratio is 0.0043 and the surviving ratio is 0.9957. This life table, or original survivor curve,
3 is plotted along with the estimated smooth survivor curve, the 45-R4 on page VII-13.

4 The net salvage percent is presented on page VIII-4. The percentage is based
5 on the result of annual gross salvage minus the cost to remove plant assets as
6 compared to the original cost of plant retired during the period 2012 through 2016. The
7 5-year period experienced \$4,368 (\$0 - \$4,368) in net salvage for \$76,557 plant retired.
8 The result is negative net salvage of 6 percent ($\$4,368/\$76,557$). Therefore, it was
9 determined that based on industry ranges, historical indications and Company
10 expectations, that negative 10 percent was the most appropriate estimate.

11 My calculation of the annual depreciation related to the original cost at December
12 31, 2016, of water plant is presented on page IX-9 The calculations are based on the
13 45-R4 survivor curve, 10 percent negative net salvage, the attained age, and the
14 allocated book reserve. The tabulation sets forth the installation year, the original cost,
15 calculated accrued depreciation, allocated book reserve, future accruals, remaining life
16 and annual accrual. These totals are brought forward to the table on page VI-5.

17 **Q. What is your recommendation regarding annual depreciation accrual rates for**
18 **the Company?**

19 **A.** I recommend that the proposed annual depreciation accrual rate for each account or
20 subaccount set forth in SWRI Exhibit JJS-1 be adopted by the Commission for
21 regulatory purposes as well as by the Company for accounting purposes. My
22 recommended depreciation accrual rates, based on the depreciation study, are set forth
23 for each account in column 8 of Table 1 on pages VI-5 and VI-6 of SWRI Exhibit JJS-

1 1. In my opinion, these are reasonable and appropriate depreciation accrual rates for
2 the Company.

3 **Q. Are your recommended depreciation accrual rates reasonable for plant added**
4 **subsequent to December 31, 2016?**

5 **A.** Yes. The annual depreciation accrual rates calculated as of December 31, 2016, can
6 reasonably be applied to the total balance including new plant additions during the next
7 several years.

8 **VI. CONCLUSION**

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

10 **A.** Yes, it does.

Appendix A

JOHN SPANOS

DEPRECIATION EXPERIENCE

Q. Please state your name.

A. My name is John J. Spanos.

Q. What is your educational background?

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

Q. Do you belong to any professional societies?

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

Q. Do you hold any special certification as a depreciation expert?

A. Yes. The Society of Depreciation Professionals has established national standards for depreciation professionals. The Society administers an examination to become certified in this field. I passed the certification exam in September 1997 and was recertified in August 2003, February 2008 and January 2013.

Q. Please outline your experience in the field of depreciation.

A. In June, 1986, I was employed by Gannett Fleming Valuation and Rate Consultants, Inc. as a Depreciation Analyst. During the period from June, 1986 through December, 1995, I helped prepare numerous depreciation and original cost studies for utility companies in various industries. I helped perform depreciation studies for the following telephone companies: United Telephone of

Pennsylvania, United Telephone of New Jersey, and Anchorage Telephone Utility.

I helped perform depreciation studies for the following companies in the railroad industry: Union Pacific Railroad, Burlington Northern Railroad, and Wisconsin Central Transportation Corporation.

I helped perform depreciation studies for the following organizations in the electric utility industry: Chugach Electric Association, The Cincinnati Gas and Electric Company (CG&E), The Union Light, Heat and Power Company (ULH&P), Northwest Territories Power Corporation, and the City of Calgary - Electric System.

I helped perform depreciation studies for the following pipeline companies: TransCanada Pipelines Limited, Trans Mountain Pipe Line Company Ltd., Interprovincial Pipe Line Inc., Nova Gas Transmission Limited and Lakehead Pipeline Company.

I helped perform depreciation studies for the following gas utility companies: Columbia Gas of Pennsylvania, Columbia Gas of Maryland, The Peoples Natural Gas Company, T. W. Phillips Gas & Oil Company, CG&E, ULH&P, Lawrenceburg Gas Company and Penn Fuel Gas, Inc.

I helped perform depreciation studies for the following water utility companies: Indiana-American Water Company, Consumers Pennsylvania Water Company and The York Water Company; and depreciation and original cost studies for Philadelphia Suburban Water Company and Pennsylvania-American Water Company.

In each of the above studies, I assembled and analyzed historical and simulated data, performed field reviews, developed preliminary estimates of service life and net salvage, calculated annual depreciation, and prepared reports

for submission to state public utility commissions or federal regulatory agencies. I performed these studies under the general direction of William M. Stout, P.E.

In January, 1996, I was assigned to the position of Supervisor of Depreciation Studies. In July, 1999, I was promoted to the position of Manager, Depreciation and Valuation Studies. In December, 2000, I was promoted to the position as Vice-President of Gannett Fleming Valuation and Rate Consultants, Inc. and in April 2012, I was promoted to my present position as Senior Vice President of the Valuation and Rate Division of Gannett Fleming Inc. (now doing business as Gannett Fleming Valuation and Rate Consultants, LLC). In my current position I am responsible for conducting all depreciation, valuation and original cost studies, including the preparation of final exhibits and responses to data requests for submission to the appropriate regulatory bodies.

Since January 1996, I have conducted depreciation studies similar to those previously listed including assignments for Pennsylvania-American Water Company; Aqua Pennsylvania; Kentucky-American Water Company; Virginia-American Water Company; Indiana-American Water Company; Iowa-American Water Company; New Jersey-American Water Company; Hampton Water Works Company; Omaha Public Power District; Enbridge Pipe Line Company; Inc.; Columbia Gas of Virginia, Inc.; Virginia Natural Gas Company National Fuel Gas Distribution Corporation - New York and Pennsylvania Divisions; The City of Bethlehem - Bureau of Water; The City of Coatesville Authority; The City of Lancaster - Bureau of Water; Peoples Energy Corporation; The York Water Company; Public Service Company of Colorado; Enbridge Pipelines; Enbridge Gas Distribution, Inc.; Reliant Energy-HLP; Massachusetts-American Water

Company; St. Louis County Water Company; Missouri-American Water Company; Chugach Electric Association; Alliant Energy; Oklahoma Gas & Electric Company; Nevada Power Company; Dominion Virginia Power; NUI-Virginia Gas Companies; Pacific Gas & Electric Company; PSI Energy; NUI - Elizabethtown Gas Company; Cinergy Corporation – CG&E; Cinergy Corporation – ULH&P; Columbia Gas of Kentucky; South Carolina Electric & Gas Company; Idaho Power Company; El Paso Electric Company; Aqua North Carolina; Aqua Ohio; Aqua Texas, Inc.; Ameren Missouri; Central Hudson Gas & Electric; Centennial Pipeline Company; CenterPoint Energy-Arkansas; CenterPoint Energy – Oklahoma; CenterPoint Energy – Entex; CenterPoint Energy - Louisiana; NSTAR – Boston Edison Company; Westar Energy, Inc.; United Water Pennsylvania; PPL Electric Utilities; PPL Gas Utilities; Wisconsin Power & Light Company; TransAlaska Pipeline; Avista Corporation; Northwest Natural Gas; Allegheny Energy Supply, Inc.; Public Service Company of North Carolina; South Jersey Gas Company; Duquesne Light Company; MidAmerican Energy Company; Laclede Gas; Duke Energy Company; E.ON U.S. Services Inc.; Elkton Gas Services; Anchorage Water and Wastewater Utility; Kansas City Power and Light; Duke Energy North Carolina; Duke Energy South Carolina; Monongahela Power Company; Potomac Edison Company; Duke Energy Ohio Gas; Duke Energy Kentucky; Duke Energy Indiana; Duke Energy Progress; Northern Indiana Public Service Company; Tennessee-American Water Company; Columbia Gas of Maryland; Bonneville Power Administration; NSTAR Electric and Gas Company; EPCOR Distribution, Inc.; B. C. Gas Utility, Ltd; Entergy Arkansas; Entergy Texas; Entergy Mississippi; Entergy Louisiana; Entergy Gulf States Louisiana; the Borough of Hanover; Louisville Gas and Electric

Company; Kentucky Utilities Company; Madison Gas and Electric; Central Maine Power; PEPCO; PacifiCorp; Minnesota Energy Resource Group; Jersey Central Power & Light Company; Cheyenne Light, Fuel and Power Company; United Water Arkansas; Central Vermont Public Service Corporation; Green Mountain Power; Portland General Electric Company; Atlantic City Electric; Nicor Gas Company; Black Hills Power; Black Hills Colorado Gas; Black Hills Kansas Gas; Black Hills Service Company; Black Hills Utility Holdings; Public Service Company of Oklahoma; City of Dubois; Peoples Gas Light and Coke Company; North Shore Gas Company; Connecticut Light and Power; New York State Electric and Gas Corporation; Rochester Gas and Electric Corporation; Greater Missouri Operations; Tennessee Valley Authority; Omaha Public Power District; Indianapolis Power & Light Company; Vermont Gas Systems, Inc.; Metropolitan Edison; Pennsylvania Electric; West Penn Power; Pennsylvania Power; PHI Service Company - Delmarva Power and Light; Atmos Energy Corporation; Citizens Energy Group; Alabama Gas Corporation; Mid-Atlantic Interstate Transmission, LLC; SUEZ Water; WEC Energy Group; Rocky Mountain Natural Gas, LLC; Illinois-American Water Company and Northern Illinois Gas Company.

My additional duties include determining final life and salvage estimates, conducting field reviews, presenting recommended depreciation rates to management for its consideration and supporting such rates before regulatory bodies.

Q. Have you submitted testimony to any state utility commission on the subject of utility plant depreciation?

A. Yes. I have submitted testimony to the Pennsylvania Public Utility Commission; the Commonwealth of Kentucky Public Service Commission; the Public Utilities Commission of Ohio; the Nevada Public Utility Commission; the Public Utilities Board of New Jersey; the Missouri Public Service Commission; the Massachusetts Department of Telecommunications and Energy; the Alberta Energy & Utility Board; the Idaho Public Utility Commission; the Louisiana Public Service Commission; the State Corporation Commission of Kansas; the Oklahoma Corporate Commission; the Public Service Commission of South Carolina; Railroad Commission of Texas – Gas Services Division; the New York Public Service Commission; Illinois Commerce Commission; the Indiana Utility Regulatory Commission; the California Public Utilities Commission; the Federal Energy Regulatory Commission (“FERC”); the Arkansas Public Service Commission; the Public Utility Commission of Texas; Maryland Public Service Commission; Washington Utilities and Transportation Commission; The Tennessee Regulatory Commission; the Regulatory Commission of Alaska; Minnesota Public Utility Commission; Utah Public Service Commission; District of Columbia Public Service Commission; the Mississippi Public Service Commission; Delaware Public Service Commission; Virginia State Corporation Commission; Colorado Public Utility Commission; Oregon Public Utility Commission; South Dakota Public Utilities Commission; Wisconsin Public Service Commission; Wyoming Public Service Commission; Maine Public Utility Commission; Iowa Utility Board; Connecticut Public Utilities Regulatory Authority; New Mexico Public Regulation Commission and the North Carolina Utilities Commission.

Q. Have you had any additional education relating to utility plant depreciation?

A. Yes. I have completed the following courses conducted by Depreciation Programs, Inc.: "Techniques of Life Analysis," "Techniques of Salvage and Depreciation Analysis," "Forecasting Life and Salvage," "Modeling and Life Analysis Using Simulation," and "Managing a Depreciation Study." I have also completed the "Introduction to Public Utility Accounting" program conducted by the American Gas Association.

Q. Does this conclude your qualification statement?

A. Yes.

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
01.	1998	PA PUC	R-00984375	City of Bethlehem – Bureau of Water	Original Cost and Depreciation
02.	1998	PA PUC	R-00984567	City of Lancaster	Original Cost and Depreciation
03.	1999	PA PUC	R-00994605	The York Water Company	Depreciation
04.	2000	D.T.&E.	DTE 00-105	Massachusetts-American Water Company	Depreciation
05.	2001	PA PUC	R-00016114	City of Lancaster	Original Cost and Depreciation
06.	2001	PA PUC	R-00017236	The York Water Company	Depreciation
07.	2001	PA PUC	R-00016339	Pennsylvania-American Water Company	Depreciation
08.	2001	OH PUC	01-1228-GA-AIR	Cinergy Corp – Cincinnati Gas & Elect Co.	Depreciation
09.	2001	KY PSC	2001-092	Cinergy Corp – Union Light, Heat & Power Co.	Depreciation
10.	2002	PA PUC	R-00016750	Philadelphia Suburban Water Company	Depreciation
11.	2002	KY PSC	2002-00145	Columbia Gas of Kentucky	Depreciation
12.	2002	NJ BPU	GF02040245	NUI Corporation/Elizabethtown Gas Co.	Depreciation
13.	2002	ID PUC	IPC-E-03-7	Idaho Power Company	Depreciation
14.	2003	PA PUC	R-0027975	The York Water Company	Depreciation
15.	2003	IN URC	R-0027975	Cinergy Corp – PSI Energy, Inc.	Depreciation
16.	2003	PA PUC	R-00038304	Pennsylvania-American Water Co.	Depreciation
17.	2003	MO PSC	WR-2003-0500	Missouri-American Water Co.	Depreciation
18.	2003	FERC	ER-03-1274-000	NSTAR-Boston Edison Company	Depreciation
19.	2003	NJ BPU	BPU 03080683	South Jersey Gas Company	Depreciation
20.	2003	NV PUC	03-10001	Nevada Power Company	Depreciation
21.	2003	LA PSC	U-27676	CenterPoint Energy – Arkla	Depreciation
22.	2003	PA PUC	R-00038805	Pennsylvania Suburban Water Company	Depreciation
23.	2004	AB En/Util Bd	1306821	EPCOR Distribution, Inc.	Depreciation
24.	2004	PA PUC	R-00038168	National Fuel Gas Distribution Corp (PA)	Depreciation
25.	2004	PA PUC	R-00049255	PPL Electric Utilities	Depreciation
26.	2004	PA PUC	R-00049165	The York Water Company	Depreciation
27.	2004	OK Corp Cm	PUC 200400187	CenterPoint Energy – Arkla	Depreciation
28.	2004	OH PUC	04-680-EI-AIR	Cinergy Corp. – Cincinnati Gas and Electric Company	Depreciation
29.	2004	RR Com of TX	GUD#	CenterPoint Energy – Entex Gas Services Div.	Depreciation
30.	2004	NY PUC	04-G-1047	National Fuel Gas Distribution Gas (NY)	Depreciation
31.	2004	AR PSC	04-121-U	CenterPoint Energy – Arkla	Depreciation
32.	2005	IL CC	05-	North Shore Gas Company	Depreciation
33.	2005	IL CC	05-	Peoples Gas Light and Coke Company	Depreciation
34.	2005	KY PSC	2005-00042	Union Light Heat & Power	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
35.	2005	IL CC	05-0308	MidAmerican Energy Company	Depreciation
36.	2005	MO PSC	GF-2005	Laclede Gas Company	Depreciation
37.	2005	KS CC	05-WSEE-981-RTS	Westar Energy	Depreciation
38.	2005	RR Com of TX	GUD #	CenterPoint Energy – Entex Gas Services Div.	Depreciation
39.	2005	FERC		Cinergy Corporation	Accounting
40.	2005	OK CC	PUD 200500151	Oklahoma Gas and Electric Co.	Depreciation
41.	2005	MA Dept Tele- com & Ergy	DTE 05-85	NSTAR	Depreciation
42.	2005	NY PUC	05-E-934/05-G-0935	Central Hudson Gas & Electric Co.	Depreciation
43.	2005	AK Reg Com	U-04-102	Chugach Electric Association	Depreciation
44.	2005	CA PUC	A05-12-002	Pacific Gas & Electric	Depreciation
45.	2006	PA PUC	R-00051030	Aqua Pennsylvania, Inc.	Depreciation
46.	2006	PA PUC	R-00051178	T.W. Phillips Gas and Oil Co.	Depreciation
47.	2006	NC Util Cm.		Pub. Service Co. of North Carolina	Depreciation
48.	2006	PA PUC	R-00051167	City of Lancaster	Depreciation
49.	2006	PA PUC	R00061346	Duquesne Light Company	Depreciation
50.	2006	PA PUC	R-00061322	The York Water Company	Depreciation
51.	2006	PA PUC	R-00051298	PPL GAS Utilities	Depreciation
52.	2006	PUC of TX	32093	CenterPoint Energy – Houston Electric	Depreciation
53.	2006	KY PSC	2006-00172	Duke Energy Kentucky	Depreciation
54.	2006	SC PSC		SCANA	
55.	2006	AK Reg Com	U-06-6	Municipal Light and Power	Depreciation
56.	2006	DE PSC	06-284	Delmarva Power and Light	Depreciation
57.	2006	IN URC	IURC43081	Indiana American Water Company	Depreciation
58.	2006	AK Reg Com	U-06-134	Chugach Electric Association	Depreciation
59.	2006	MO PSC	WR-2007-0216	Missouri American Water Company	Depreciation
60.	2006	FERC	ISO82, ETC. AL	TransAlaska Pipeline	Depreciation
61.	2006	PA PUC	R-00061493	National Fuel Gas Distribution Corp. (PA)	Depreciation
62.	2007	NC Util Com.	E-7 SUB 828	Duke Energy Carolinas, LLC	Depreciation
63.	2007	OH PSC	08-709-EL-AIR	Duke Energy Ohio Gas	Depreciation
64.	2007	PA PUC	R-00072155	PPL Electric Utilities Corporation	Depreciation
65.	2007	KY PSC	2007-00143	Kentucky American Water Company	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
66.	2007	PA PUC	R-00072229	Pennsylvania American Water Company	Depreciation
67.	2007	KY PSC	2007-0008	NiSource – Columbia Gas of Kentucky	Depreciation
68.	2007	NY PSC	07-G-0141	National Fuel Gas Distribution Corp (NY)	Depreciation
69.	2008	AK PSC	U-08-004	Anchorage Water & Wastewater Utility	Depreciation
70.	2008	TN Reg Auth	08-00039	Tennessee-American Water Company	Depreciation
71.	2008	DE PSC	08-96	Artesian Water Company	Depreciation
72.	2008	PA PUC	R-2008-2023067	The York Water Company	Depreciation
73.	2008	KS CC	08-WSEE1-RTS	Westar Energy	Depreciation
74.	2008	IN URC	43526	Northern Indiana Public Service Co.	Depreciation
75.	2008	IN URC	43501	Duke Energy Indiana	Depreciation
76.	2008	MD PSC	9159	NiSource – Columbia Gas of Maryland	Depreciation
77.	2008	KY PSC	2008-000251	Kentucky Utilities	Depreciation
78.	2008	KY PSC	2008-000252	Louisville Gas & Electric	Depreciation
79.	2008	PA PUC	2008-20322689	Pennsylvania American Water Co.-Wastewater	Depreciation
80.	2008	NY PSC	08-E887/08-00888	Central Hudson	Depreciation
81.	2008	WV TC	VE-080416/VG-8080417	Avista Corporation	Depreciation
82.	2008	IL CC	ICC-09-166	Peoples Gas, Light and Coke Co.	Depreciation
83.	2009	IL CC	ICC-09-167	North Shore Gas Company	Depreciation
84.	2009	DC PSC	1076	Potomac Electric Power Company	Depreciation
85.	2009	KY PSC	2009-00141	NiSource – Columbia Gas of Kentucky	Depreciation
86.	2009	FERC	ER08-1056-002	Entergy Services	Depreciation
87.	2009	PA PUC	R-2009-2097323	Pennsylvania American Water Co.	Depreciation
88.	2009	NC Util Cm	E-7, Sub 090	Duke Energy Carolinas, LLC	Depreciation
89.	2009	KY PSC	2009-00202	Duke Energy Kentucky	Depreciation
90.	2009	VA St. CC	PUE-2009-00059	Aqua Virginia, Inc.	Depreciation
91.	2009	PA PUC	2009-2132019	Aqua Pennsylvania, Inc.	Depreciation
92.	2009	MS PSC	09-	Entergy Mississippi	Depreciation
93.	2009	AK PSC	09-08-U	Entergy Arkansas	Depreciation
94.	2009	TX PUC	37744	Entergy Texas	Depreciation
95.	2009	TX PUC	37690	El Paso Electric Company	Depreciation
96.	2009	PA PUC	R-2009-2106908	The Borough of Hanover	Depreciation
97.	2009	KS CC	10-KCPE-415-RTS	Kansas City Power & Light	Depreciation
98.	2009	PA PUC	R-2009-	United Water Pennsylvania	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
99.	2009	OH PUC		Aqua Ohio Water Company	Depreciation
100.	2009	WI PSC	3270-DU-103	Madison Gas & Electric Co.	Depreciation
101.	2009	MO PSC	WR-2010	Missouri American Water Co.	Depreciation
102.	2009	AK Reg Cm	U-09-097	Chugach Electric Association	Depreciation
103.	2010	IN URC	43969	Northern Indiana Public Service Co.	Depreciation
104.	2010	WI PSC	6690-DU-104	Wisconsin Public Service Corp.	Depreciation
105.	2010	PA PUC	R-2010-2161694	PPL Electric Utilities Corp.	Depreciation
106.	2010	KY PSC	2010-00036	Kentucky American Water Company	Depreciation
107.	2010	PA PUC	R-2009-2149262	Columbia Gas of Pennsylvania	Depreciation
108.	2010	MO PSC	GR-2010-0171	Laclede Gas Company	Depreciation
109.	2010	SC PSC	2009-489-E	South Carolina Electric & Gas Co.	Depreciation
110.	2010	NJ BD OF PU	ER09080664	Atlantic City Electric	Depreciation
111.	2010	VA St. CC	PUE-2010-00001	Virginia American Water Company	Depreciation
112.	2010	PA PUC	R-2010-2157140	The York Water Company	Depreciation
113.	2010	MO PSC	ER-2010-0356	Greater Missouri Operations Co.	Depreciation
114.	2010	MO PSC	ER-2010-0355	Kansas City Power and Light	Depreciation
115.	2010	PA PUC	R-2010-2167797	T.W. Phillips Gas and Oil Co.	Depreciation
116.	2010	PSC SC	2009-489-E	SCANA – Electric	Depreciation
117.	2010	PA PUC	R-2010-22010702	Peoples Natural Gas, LLC	Depreciation
118.	2010	AK PSC	10-067-U	Oklahoma Gas and Electric Co.	Depreciation
119.	2010	IN URC		Northern Indiana Public Serv. Co. - NIFL	Depreciation
120.	2010	IN URC		Northern Indiana Public Serv. Co. - Kokomo	Depreciation
121.	2010	PA PUC	R-2010-2166212	Pennsylvania American Water Co - WW	Depreciation
122.	2010	NC Util Cn.	W-218,SUB310	Aqua North Carolina, Inc.	Depreciation
123.	2011	OH PUC	11-4161-WS-AIR	Ohio American Water Company	Depreciation
124.	2011	MS PSC	EC-123-0082-00	Entergy Mississippi	Depreciation
125.	2011	CO PUC	11AL-387E	Black Hills Colorado	Depreciation
126.	2011	PA PUC	R-2010-2215623	Columbia Gas of Pennsylvania	Depreciation
127.	2011	PA PUC	R-2010-2179103	Lancaster, City of – Bureau of Water	Depreciation
128.	2011	IN URC	43114 IGCC 4S	Duke Energy Indiana	Depreciation
129.	2011	FERC	IS11-146-000	Enbridge Pipelines (Southern Lights)	Depreciation
130.	2011	IL CC	11-0217	MidAmerican Energy Corporation	Depreciation
131.	2011	OK CC	201100087	Oklahoma Gas & Electric Co.	Depreciation
132.	2011	PA PUC	2011-2232243	Pennsylvania American Water Company	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
133.	2011	FERC	2011-2232243	Carolina Gas Transmission	Depreciation
134.	2012	WA UTC	UE-120436/UG-120437	Avista Corporation	Depreciation
135.	2012	AK Reg Cm	U-12-009	Chugach Electric Association	Depreciation
136.	2012	MA PUC	DPU 12-25	Columbia Gas of Massachusetts	Depreciation
137.	2012	TX PUC	40094	El Paso Electric Company	Depreciation
138.	2012	ID PUC	IPC-E-12	Idaho Power Company	Depreciation
139.	2012	PA PUC	R-2012-2290597	PPL Electric Utilities	Depreciation
140.	2012	PA PUC	R-2012-2311725	Hanover, Borough of – Bureau of Water	Depreciation
141.	2012	KY PSC	2012-00222	Louisville Gas and Electric Company	Depreciation
142.	2012	KY PSC	2012-00221	Kentucky Utilities Company	Depreciation
143.	2012	PA PUC	R-2012-2285985	Peoples Natural Gas Company	Depreciation
144.	2012	DC PSC	Case 1087	Potomac Electric Power Company	Depreciation
145.	2012	OH PSC	12-1682-EL-AIR	Duke Energy Ohio (Electric)	Depreciation
146.	2012	OH PSC	12-1685-GA-AIR	Duke Energy Ohio (Gas)	Depreciation
147.	2012	PA PUC	R-2012-2310366	Lancaster, City of – Sewer Fund	Depreciation
148.	2012	PA PUC	R-2012-2321748	Columbia Gas of Pennsylvania	Depreciation
149.	2012	FERC	ER-12-2681-000	ITC Holdings	Depreciation
150.	2012	MO PSC	ER-2012-0174	Kansas City Power and Light	Depreciation
151.	2012	MO PSC	ER-2012-0175	KCPL Greater Missouri Operations Co.	Depreciation
152.	2012	MO PSC	GO-2012-0363	Laclede Gas Company	Depreciation
153.	2012	MN PUC	G007,001/D-12-533	Integrays – MN Energy Resource Group	Depreciation
153.	2012	TX PUC		Aqua Texas	Depreciation
155.	2012	PA PUC	2012-2336379	York Water Company	Depreciation
156.	2013	NJ BPU	ER12121071	PHI Service Co.– Atlantic City Electric	Depreciation
157.	2013	KY PSC	2013-00167	Columbia Gas of Kentucky	Depreciation
158.	2013	VA St CC	2013-00020	Virginia Electric and Power Co.	Depreciation
159.	2013	IA Util Bd	2013-0004	MidAmerican Energy Corporation	Depreciation
160.	2013	PA PUC	2013-2355276	Pennsylvania American Water Co.	Depreciation
161.	2013	NY PSC	13-E-0030, 13-G-0031, 13-S-0032	Consolidated Edison of New York	Depreciation
162.	2013	PA PUC	2013-2355886	Peoples TWP LLC	Depreciation
163.	2013	TN Reg Auth	12-0504	Tennessee American Water	Depreciation
164.	2013	ME PUC	2013-168	Central Maine Power Company	Depreciation
165.	2013	DC PSC	Case 1103	PHI Service Co. – PEPCO	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
166.	2013	WY PSC	2003-ER-13	Cheyenne Light, Fuel and Power Co.	Depreciation
167.	2013	FERC	ER13- -0000	Kentucky Utilities	Depreciation
168.	2013	FERC	ER13- -0000	MidAmerican Energy Company	Depreciation
169.	2013	FERC	ER13- -0000	PPL Utilities	Depreciation
170.	2013	PA PUC	R-2013-2372129	Duquesne Light Company	Depreciation
171.	2013	NJ BPU	ER12111052	Jersey Central Power and Light Co.	Depreciation
172.	2013	PA PUC	R-2013-2390244	Bethlehem, City of – Bureau of Water	Depreciation
173.	2013	OK CC	UM 1679	Oklahoma, Public Service Company of	Depreciation
174.	2013	IL CC	13-0500	Nicor Gas Company	Depreciation
175.	2013	WY PSC	20000-427-EA-13	PacifiCorp	Depreciation
176.	2013	UT PSC	13-035-02	PacifiCorp	Depreciation
177.	2013	OR PUC	UM 1647	PacifiCorp	Depreciation
178.	2013	PA PUC	2013-2350509	Dubois, City of	Depreciation
179.	2014	IL CC	14-0224	North Shore Gas Company	Depreciation
180.	2014	FERC	ER14-	Duquesne Light Company	Depreciation
181.	2014	SD PUC	EL14-026	Black Hills Power Company	Depreciation
182.	2014	WY PSC	20002-91-ER-14	Black Hills Power Company	Depreciation
183.	2014	PA PUC	2014-2428304	Hanover, Borough of – Municipal Water Works	Depreciation
184.	2014	PA PUC	2014-2406274	Columbia Gas of Pennsylvania	Depreciation
185.	2014	IL CC	14-0225	Peoples Gas Light and Coke Company	Depreciation
186.	2014	MO PSC	ER-2014-0258	Ameren Missouri	Depreciation
187.	2014	KS CC	14-BHCG-502-RTS	Black Hills Service Company	Depreciation
188.	2014	KS CC	14-BHCG-502-RTS	Black Hills Utility Holdings	Depreciation
189.	2014	KS CC	14-BHCG-502-RTS	Black Hills Kansas Gas	Depreciation
190.	2014	PA PUC	2014-2418872	Lancaster, City of – Bureau of Water	Depreciation
191.	2014	WV PSC	14-0701-E-D	First Energy – MonPower/PotomacEdison	Depreciation
192.	2014	VA St CC	PUC-2014-00045	Aqua Virginia	Depreciation
193.	2014	VA St CC	PUE-2013	Virginia American	Depreciation
194.	2014	OK CC	PUD201400229	Oklahoma Gas and Electric	Depreciation
195.	2014	OR PUC	UM1679	Portland General Electric	Depreciation
196.	2014	IN URC	Cause No. 44576	Indianapolis Power & Light	Depreciation
197.	2014	MA DPU	DPU. 14-150	NSTAR Gas	Depreciation
198.	2014	CT PURA	14-05-06	Connecticut Light and Power	Depreciation
199.	2014	MO PSC	ER-2014-0370	Kansas City Power & Light	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
200.	2014	KY PSC	2014-00371	Kentucky Utilities Company	Depreciation
201.	2014	KY PSC	2014-00372	Louisville Gas and Electric Company	Depreciation
202.	2015	PA PUC	R-2015-2462723	United Water Pennsylvania Inc.	Depreciation
203.	2015	PA PUC	R-2015-2468056	Columbia Gas of Pennsylvania	Depreciation
204.	2015	NY PSC	15-E-0283/15-G-0284	New York State Electric and Gas Corporation	Depreciation
205.	2015	NY PSC	15-E-0285/15-G-0286	Rochester Gas and Electric Corporation	Depreciation
206.	2015	MO PSC	WR-2015-0301/SR-2015-0302	Missouri American Water Company	Depreciation
207.	2015	OK CC	PUD 201500208	Oklahoma, Public Service Company of	Depreciation
208.	2015	WV PSC	15-0676-W-42T	West Virginia American Water Company	Depreciation
209.	2015	PA PUC	2015-2469275	PPL Electric Utilities	Depreciation
210.	2015	IN URC	Cause No. 44688	Northern Indiana Public Service Company	Depreciation
211.	2015	OH PSC	14-1929-EL-RDR	First Energy-Ohio Edison/Cleveland Electric/ Toledo Edison	Depreciation
212.	2015	NM PRC	15-00127-UT	El Paso Electric	Depreciation
213.	2015	TX PUC	PUC-44941; SOAH 473-15-5257	El Paso Electric	Depreciation
214.	2015	WI PSC	3370-DU-104	Madison Gas and Electric Company	Depreciation
215.	2015	OK CC	PUD 201500273	Oklahoma Gas and Electric	Depreciation
216.	2015	KY PSC	Doc. No. 2015-00418	Kentucky American Water Company	Depreciation
217.	2015	NC UC	Doc. No. G-5, Sub 565	Public Service Company of North Carolina	Depreciation
218.	2016	WA UTC	Docket UE-17	Puget Sound Energy	Depreciation
219.	2016	NY PSC	Case No. 16-W-0130	Suez Water New York, Inc.	Depreciation
220.	2016	MO PSC	ER-2016-0156	KCPL – Greater Missouri	Depreciation
221.	2016	WI PSC		Wisconsin Public Service Commission	Depreciation
222.	2016	KY PSC	Case No. 2016-00026	Kentucky Utilities Company	Depreciation
223.	2016	KY PSC	Case No. 2016-00027	Louisville Gas and Electric Company	Depreciation
224.	2016	OH PUC		Aqua Ohio	Depreciation
225.	2016	MD PSC	Case 9417	Columbia Gas of Maryland	Depreciation
226.	2016	KY PSC	2016-00162	Columbia Gas of Kentucky	Depreciation
227.	2016	DE PSC	16-0649	Delmarva Power and Light Co. – Electric	Depreciation
228.	2016	DE PSC	16-0650	Delmarva Power and Light Co. – Gas	Depreciation
229.	2016	NY PSC	Case 16-G-0257	National Fuel Gas Distribution Corp – NY Div	Depreciation
230.	2016	PA PUC	R-2016-2537349	Metropolitan Edison Company	Depreciation
231.	2016	PA PUC	R-2016-2537352	Pennsylvania Electric Company	Depreciation
232.	2016	PA PUC	R-2016-2537355	Pennsylvania Power Company	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
233.	2016	PA PUC	R-2016-2537359	West Penn Power Company	Depreciation
234.	2016	PA PUC	R-2016-2529660	Columbia Gas of PA	Depreciation
235.	2016	KY PSC	Case No. 2016-00063	Kentucky Utilities / Louisville Gas & Electric Co	Depreciation
236.	2016	MO PSC	ER-2016-0285	KCPL Missouri	Depreciation
237.	2016	AR PSC	16-052-U	Oklahoma Gas & Electric Co	Depreciation
238.	2016	PSCW	6680-DU-104	Wisconsin Power and Light	Depreciation
239.	2016	ID PUC	IPC-E-16-23	Idaho Power Company	Depreciation
240.	2016	OR PUC	UM1801	Idaho Power Company	Depreciation
241.	2016	ILL CC	16-	MidAmerican Energy Company	Depreciation
242.	2016	KY PSC	Case No. 2016-00370	Kentucky Utilities Company	Depreciation
243.	2016	KY PSC	Case No. 2016-00371	Louisville Gas and Electric Company	Depreciation
244.	2016	IN URC		Indianapolis Power & Light	Depreciation
245.	2016	AL RC	U-16-081	Chugach Electric Association	Depreciation
246.	2017	MA DPU	D.P.U. 17-05	NSTAR Electric Company and Western Massachusetts Electric Company	Depreciation
247.	2017	TX PUC		EL Paso Electric Company	Depreciation
248.	2017	WA UT&C	UE-17033 and UG-170034	Puget Sound Energy	Depreciation
249.	2017	OH PUC	Case No. 17-0032-EL-AIR	Duke Energy Ohio	Depreciation
250.	2017	VA SCC	Case No. PUE-2016-00413	Virginia Natural Gas, Inc.	Depreciation
251.	2017	OK CC	Case No. PUD201700151	Oklahoma, Public Service Company of	Depreciation
252.	2017	MD PSC	Case No. 9447	Columbia Gas of Maryland	Depreciation
253.	2017	NC UC	Docket No. E-2, Sub 1142	Duke Energy Progress	Depreciation
254.	2017	PA PUC	R-2017-2595853	Pennsylvania American Water Company	Depreciation
255.	2017	OR PUC	UM1809	Portland General Electric	Depreciation
256.	2017	FERC	ER17-217	Jersey Central Power & Light	Depreciation
257.	2017	FERC	ER17-211	Mid-Atlantic Interstate Transmission, LLC	Depreciation
258.	2017	MN PUC	Docket No. GOH/D-17-	Minnesota Energy Resources Corporation	Depreciation
259.	2017	IL CC	Docket No. 17-0124	Northern Illinois Gas Company	Depreciation
260.	2017	OR PUC	UM1808	Northwest Natural Gas Company	Depreciation
261.	2017	NY PSC	Case No. 17-W-0528	SUEZ Water Owego-Nichols	Depreciation
262.	2017	ILL CC	Docket No. 17-0337	Illinois-American Water Company	Depreciation
263.	2017	PA PUC	Docket No. ER17-___	PPL Electric Utilities Corporation	Depreciation
264.	2017	IN URC	Cause No.	Northern Indiana Public Service Company	Depreciation
265.	2017	NJ BPU	BPU Docket No. WR1709___	New Jersey American Water Company, Inc.	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	<u>Client Utility</u>	<u>Subject</u>
266.	2017	IN URC	Cause No.	Indiana-American Water Company	Depreciation



Excellence Delivered As Promised

January 22, 2018

SUEZ Water Rhode Island
200 Old Hook Road
Harrington Park, NJ 07640

Attention Mr. James C. Cagle
 Vice President, Regulatory

Dear Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the water plant of SUEZ Water Rhode Island as of December 31, 2016. The attached report presents a description of the methods used in the estimation of depreciation, the summary of annual depreciation accrual rates, the statistical support for the life and net salvage estimates and the detailed tabulations of annual depreciation.

Respectfully submitted,

**GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC**

A handwritten signature in black ink that reads "John J. Spanos".

JOHN J. SPANOS
Sr. Vice President

JJS:mle

062375.000

Gannett Fleming Valuation and Rate Consultants, LLC

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2016 DEPRECIATION STUDY

**CALCULATED ANNUAL DEPRECIATION
ACCRUALS RELATED TO WATER PLANT
AS OF DECEMBER 31, 2016**

Prepared by:



Excellence Delivered As Promised

SUEZ WATER RHODE ISLAND
South Kingstown, Rhode Island

2016 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION
ACCRUALS RELATED TO WATER PLANT
AS OF DECEMBER 31, 2016

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC
Camp Hill, Pennsylvania

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EXECUTIVE SUMMARY

Pursuant to SUEZ Water Rhode Island's ("SWRI") request, Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") has conducted a depreciation study related to SWRI plant as of December 31, 2016. The purpose of this study was to determine the annual depreciation accrual rates and amounts for book and ratemaking purposes.

The depreciation rates are based on the straight-line method using the average service life ("ASL") procedure and were applied on a remaining life basis. The calculations were based on attained ages and estimated average service life as well as forecasted net salvage characteristics for each depreciable group of assets.

SWRI's accounting policy has not changed since the previous depreciation study was prepared. However, some net salvage and average service life estimates proposed in this study have changed from the currently approved estimates. The overall composite depreciation accrual rate has increased as compared to current rates.

Gannett Fleming recommends the calculated annual depreciation accrual rates proposed herein apply specifically to SWRI's plant in service as of December 31, 2016 as summarized in Table 1 of the study. The study sets forth a total annual depreciation expense of \$738,397 as applied to the depreciable original cost of \$30 million as of December 31, 2016.

PART I. INTRODUCTION

SUEZ WATER RHODE ISLAND DEPRECIATION STUDY

PART I. INTRODUCTION

SCOPE

This report presents the results of the depreciation study prepared for SUEZ Water Rhode Island as applied to water plant in service as of December 31, 2016. It relates to the concepts, methods, and basic judgments which underlie recommended annual depreciation accrual rates related to current utility plant in service.

The service life and net salvage estimates resulting from the study were based on informed judgment which incorporated analyses of historical plant retirement data as recorded through 2016; a review of Company practice and outlook as they relate to plant operation and retirement; and consideration of current practice in the water industry, including knowledge of service life and salvage estimates used for other water properties.

PLAN OF REPORT

Part I, Introduction, contains statements with respect to the plan of the report, and the basis of the study. Part II, Estimation of Survivor Curves, presents descriptions of the considerations and the methods used in the service life and net salvage studies. Part III, Service Life Considerations, presents the factors and judgment utilized in the average service life analysis. Part IV, Net Salvage Considerations, presents the judgment utilized of the net salvage study. Part V, Calculation of Annual and Accrued Depreciation, describes the procedures used in the calculation of group depreciation. Part VI, Results of Study, presents summaries by depreciable group of annual depreciation accrual rates and amounts, as well as composite remaining lives. Part VII, Service Life Statistics presents the statistical analysis of service life estimates, Part VIII, Net Salvage Statistics sets forth the statistical indications of net salvage percents, and Part IX, Detailed Depreciation Calculations presents the detailed tabulations of annual depreciation.

BASIS OF THE STUDY

Depreciation

Depreciation, in public utility regulation, is the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among causes to be given consideration are wear and tear, deterioration, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand, and the requirements of public authorities.

Depreciation, as used in accounting, is a method of distributing fixed capital costs, less net salvage, over a period of time by allocating annual amounts to expense. Each annual amount of such depreciation expense is part of that year's total cost of providing water utility service. Normally, the period of time over which the fixed capital cost is allocated to the cost of service is equal to the period of time over which an item renders service, that is, the item's service life. The most prevalent method of allocation is to distribute an equal amount of cost to each year of service life. This method is known as the straight-line method of depreciation.

For most accounts, the annual depreciation was calculated by the straight-line method using the average service life procedure and the remaining life basis. For certain General Plant accounts, the annual depreciation is based on amortization accounting. Both types of calculations were based on original cost, attained ages, and estimates of service lives and net salvage.

The straight-line method, average service life procedure is a commonly used depreciation calculation procedure that has been widely accepted in jurisdictions throughout North America. Amortization accounting is used for certain General Plant accounts because of the disproportionate plant accounting effort required when

compared to the minimal original cost of the large number of items in these accounts. An explanation of the calculation of annual and accrued amortization is presented beginning on page V-4 of the report.

Service Life and Net Salvage Estimates

The service life and net salvage estimates used in the depreciation and amortization calculations were based on informed judgment which incorporated a review of management's plans, policies and outlook, a general knowledge of the water utility industry, and comparisons of the service life and net salvage estimates from our studies of other water utilities. The use of survivor curves to reflect the expected dispersion of retirement provides a consistent method of estimating depreciation for water plant. Iowa type survivor curves were used to depict the estimated survivor curves for the plant accounts not subject to amortization accounting.

The procedure for estimating service lives consisted of compiling historical data for the plant accounts or depreciable groups, analyzing this history through the use of widely accepted techniques, and forecasting the survivor characteristics for each depreciable group on the basis of interpretations of the historical data analyses and the probable future. The combination of the historical experience and the estimated future yielded estimated survivor curves from which the average service lives were derived.

**PART II. ESTIMATION OF
SURVIVOR CURVES**

PART II. ESTIMATION OF SURVIVOR CURVES

The calculation of annual depreciation based on the straight-line method requires the estimation of survivor curves and the selection of group depreciation procedures. The estimation of survivor curves is discussed below and the development of net salvage is discussed in later sections of this report.

SURVIVOR CURVES

The use of an average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve by plotting the number of units which survive at successive ages.

The survivor curve graphically depicts the amount of property existing at each age throughout the life of an original group. From the survivor curve, the average life of the group, the remaining life expectancy, the probable life, and the frequency curve can be calculated. In Figure 1, a typical smooth survivor curve and the derived curves are illustrated. The average life is obtained by calculating the area under the survivor curve, from age zero to the maximum age, and dividing this area by the ordinate at age zero. The remaining life expectancy at any age can be calculated by obtaining the area under the curve, from the observation age to the maximum age, and dividing this area by the percent surviving at the observation age. For example, in Figure 1, the remaining life at age 30 is equal to the crosshatched area under the survivor curve divided by 29.5 percent surviving at age 30. The probable life at any age is developed by adding the age and remaining life. If the probable life of the property is calculated for each year of age, the probable life curve shown in the chart can be developed. The frequency curve presents the number of units retired in each age interval. It is derived by obtaining the differences between the amount of property surviving at the beginning and at the end of each interval.

This study has incorporated the use of Iowa curves developed from a retirement rate analysis of historical retirement history. A discussion of the concepts of survivor curves and of the development of survivor curves using the retirement rate method is presented below.

Iowa Type Curves

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the Iowa type curves. There are four families in the Iowa system, labeled in accordance with the location of the modes of the retirements in relationship to the average life and the relative height of the modes. The left moded curves, presented in Figure 2, are those in which the greatest frequency of retirement occurs to the left of, or prior to, average service life. The symmetrical moded curves, presented in Figure 3, are those in which the greatest frequency of retirement occurs at average service life. The right moded curves, presented in Figure 4, are those in which the greatest frequency occurs to the right of, or after, average service life. The origin moded curves, presented in Figure 5, are those in which the greatest frequency of retirement occurs at the origin, or immediately after age zero. The letter designation of each family of curves (L, S, R or O) represents the location of the mode of the associated frequency curve with respect to the average service life. The numbers represent the relative heights of the modes of the frequency curves within each family.

The Iowa curves were developed at the Iowa State College Engineering Experiment Station through an extensive process of observation and classification of the ages at which industrial property had been retired. A report of the study which resulted in the classification of property survivor characteristics into 18 type curves,

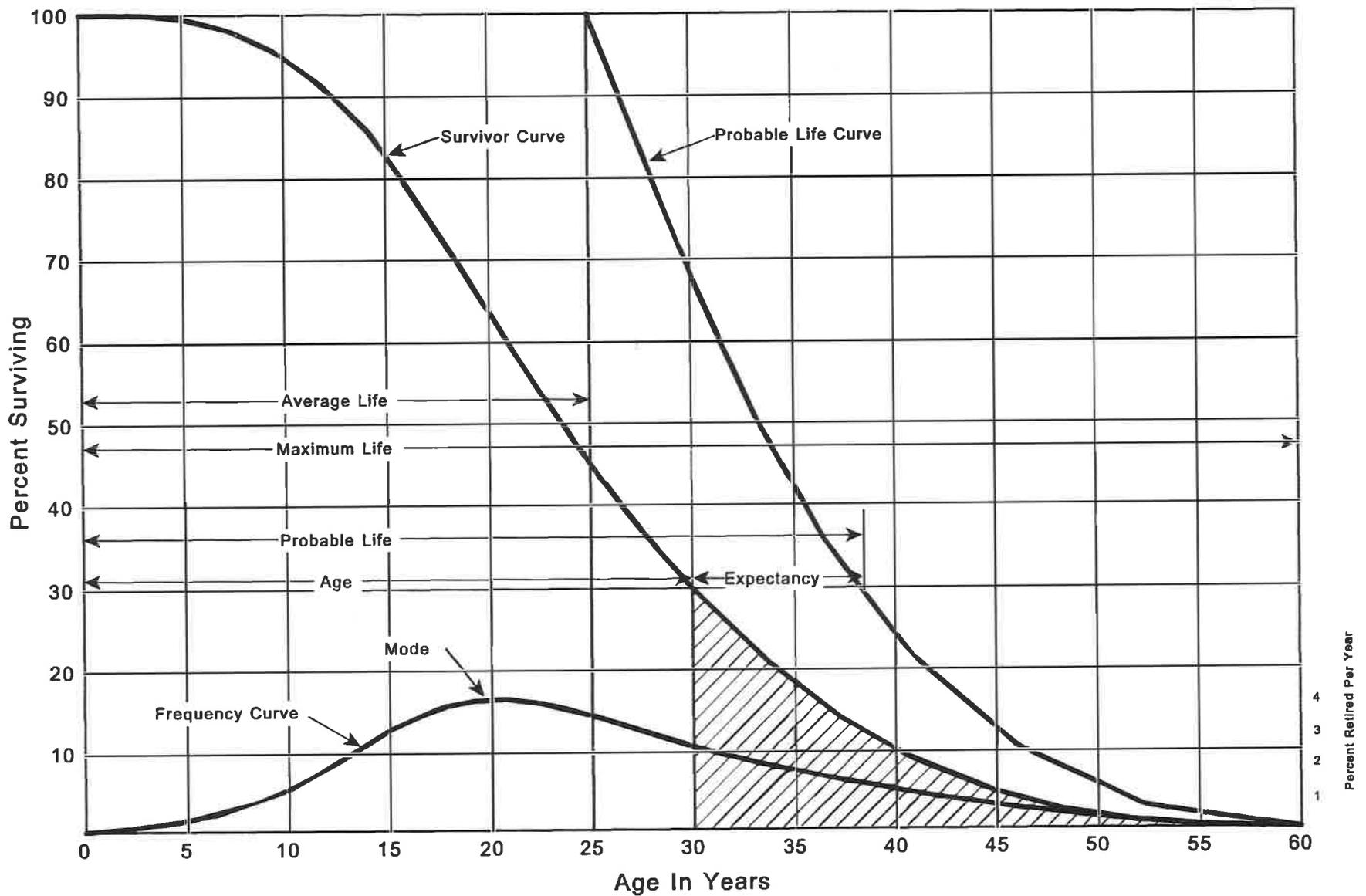


Figure 1. A Typical Survivor Curve and Derived Curves

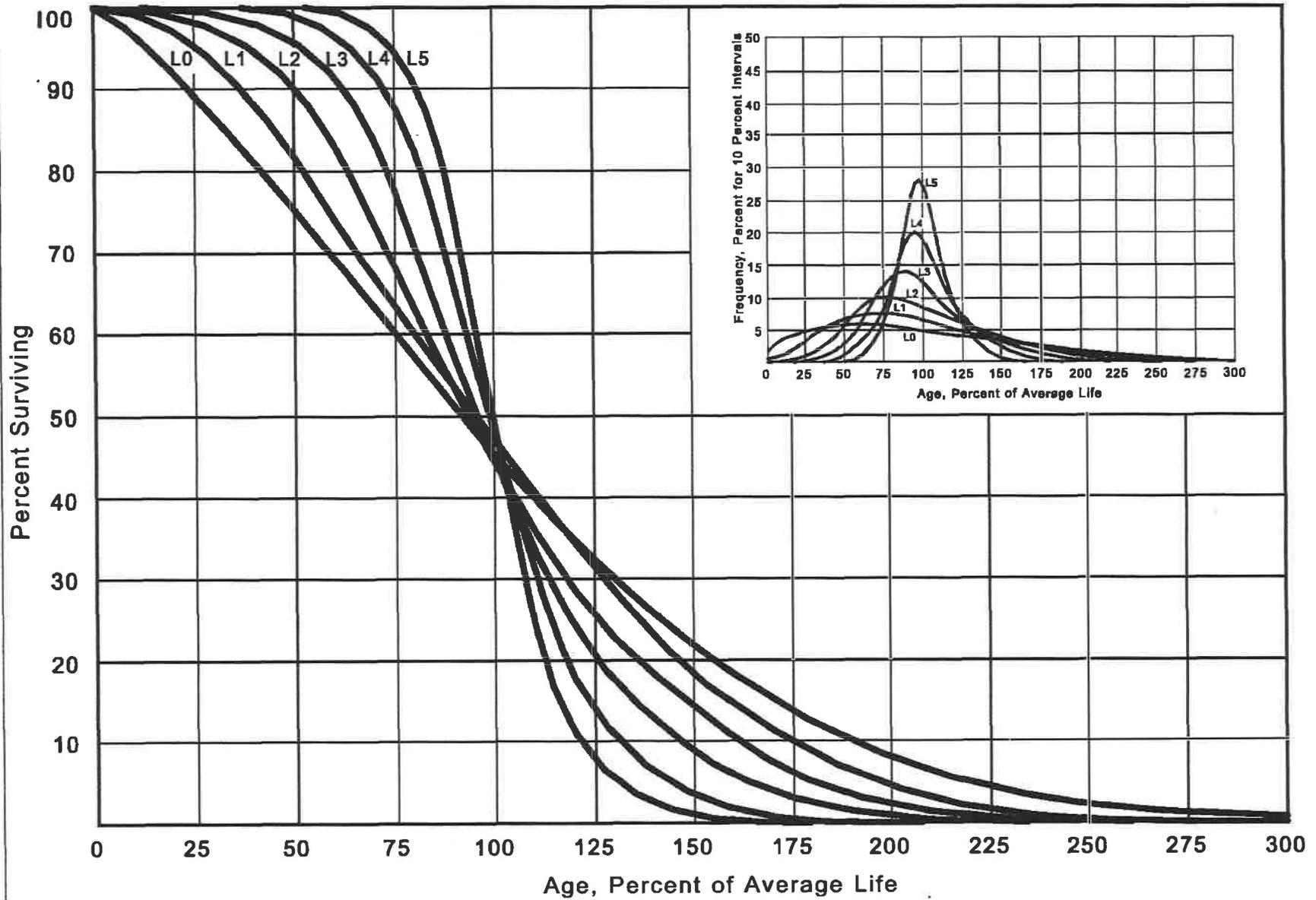


Figure 2. Left Modal or "L" Iowa Type Survivor Curves



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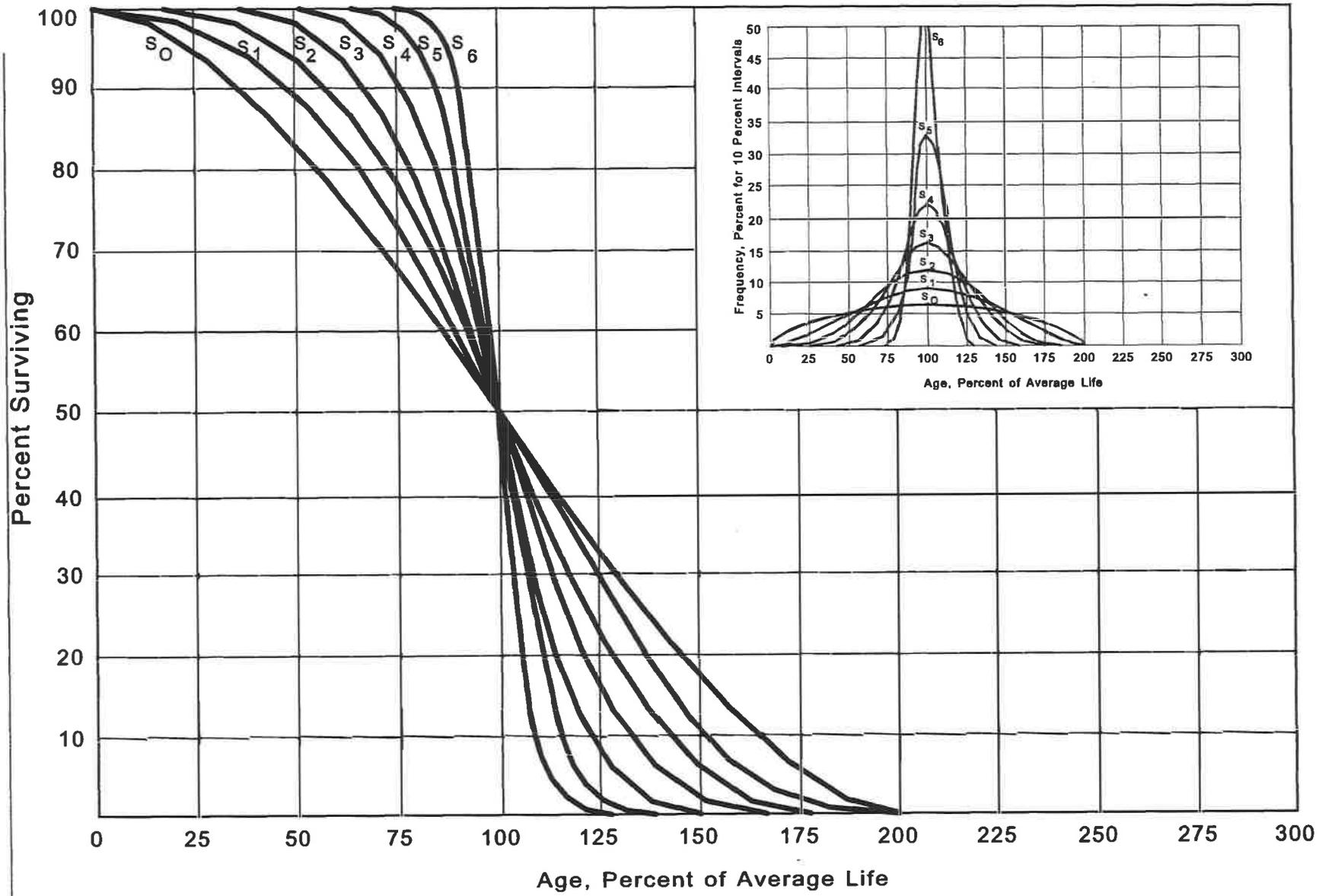


Figure 3. Symmetrical or "S" Iowa Type Survivor Curves

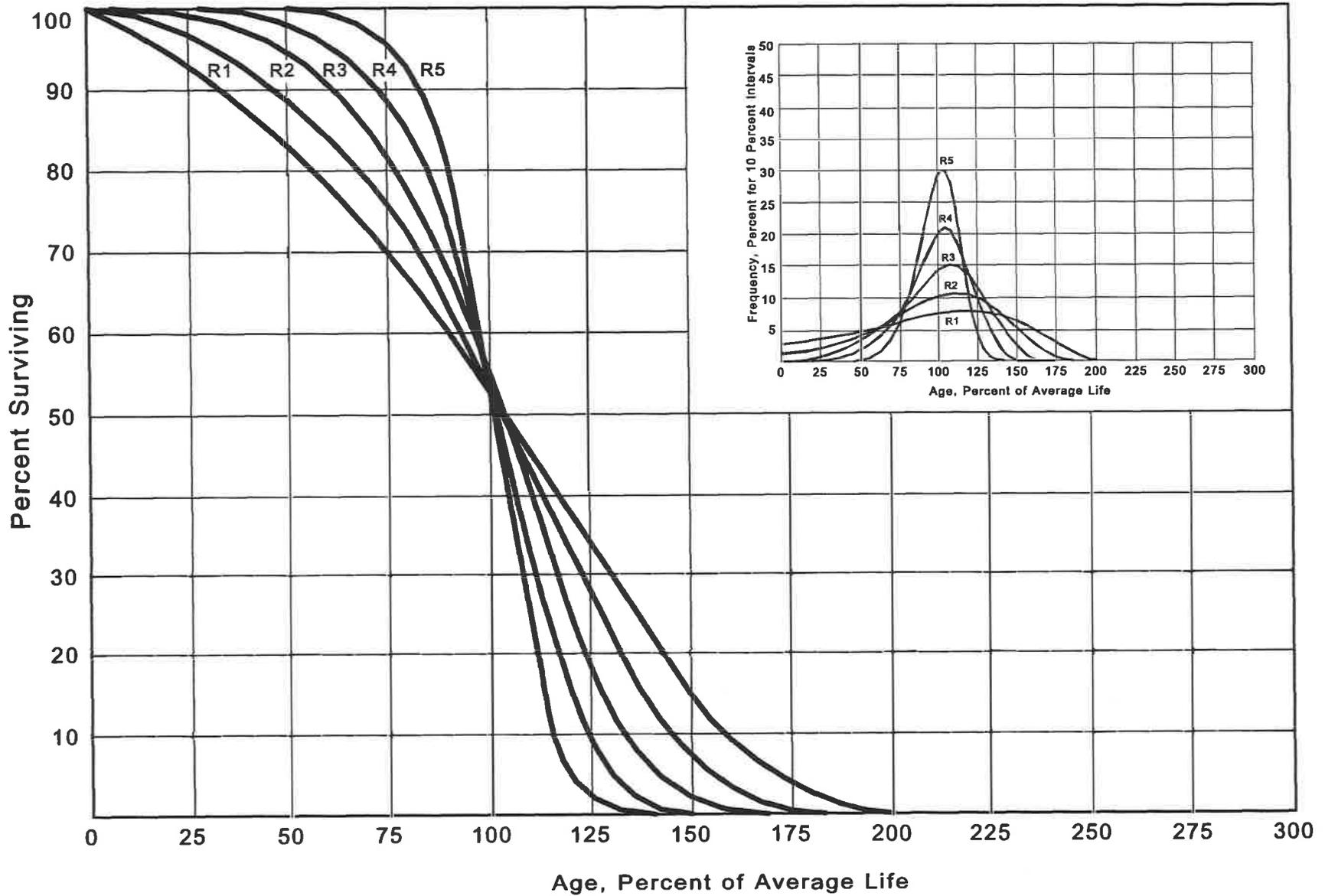


Figure 4. Right Modal or "R" Iowa Type Survivor Curves

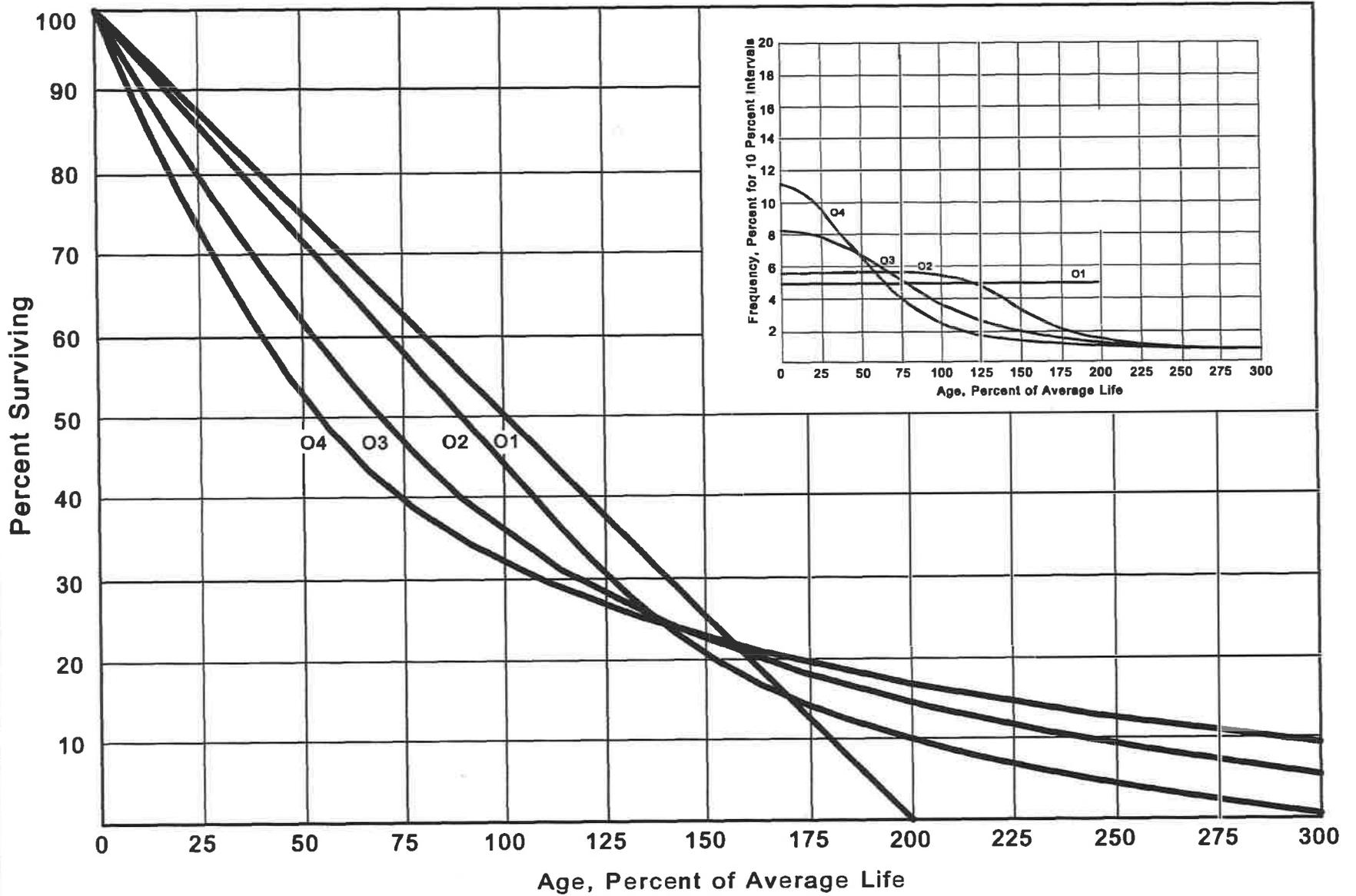


Figure 5. Origin Modal or "O" Iowa Type Survivor Curves

which constitute three of the four families, was published in 1935 in the form of the Experiment Station's Bulletin 125. These curve types have also been presented in subsequent Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation."¹ In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student submitted a thesis presenting his development of the fourth family consisting of the four O type survivor curves.

Retirement Rate Method of Analysis

The retirement rate method is an actuarial method of deriving survivor curves using the average rates at which property of each age group is retired. The method relates to property groups for which aged accounting experience is available and is the method used to develop the original stub survivor curves in this study. The method (also known as the annual rate method) is illustrated through the use of an example in the following text, and is also explained in several publications, including "Statistical Analyses of Industrial Property Retirements,"² "Engineering Valuation and Depreciation,"³ and "Depreciation Systems."⁴

The average rate of retirement used in the calculation of the percent surviving for the survivor curve (life table) requires two sets of data: first, the property retired during a period of observation, identified by the property's age at retirement; and second, the property exposed to retirement at the beginning of the age intervals during the same period. The period of observation is referred to as the experience band, and the band of years which represent the installation dates of the property exposed to retirement during the experience band is referred to as the placement band. An example of the calculations used in the development of a life table follows. The example includes schedules of annual

¹Marston, Anson, Robley Winfrey and Jean C. Hempstead. Engineering Valuation and Depreciation, 2nd Edition. New York, McGraw-Hill Book Company. 1953.

²Winfrey, Robley, Statistical Analyses of Industrial Property Retirements. Iowa State College Engineering Experiment Station, Bulletin 125. 1935.

³Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 1.

⁴Wolf, Frank K. and W. Chester Fitch. Depreciation Systems. Iowa State University Press. 1994.

aged property transactions, a schedule of plant exposed to retirement, a life table and illustrations of smoothing the stub survivor curve.

Schedules of Annual Transactions in Plant Records

The property group used to illustrate the retirement rate method is observed for the experience band 2007-2016 during which there were placements during the years 2002-2016. In order to illustrate the summation of the aged data by age interval, the data were compiled in the manner presented in Schedules 1 and 2 on pages II-11 and II-12. In Schedule 1, the year of installation (year placed) and the year of retirement are shown. The age interval during which a retirement occurred is determined from this information. In the example which follows, \$10,000 of the dollars invested in 2002 were retired in 2007. The \$10,000 retirement occurred during the age interval between 4½ and 5½ years on the basis that approximately one-half of the amount of property was installed prior to and subsequent to July 1 of each year. That is, on the average, property installed during a year is placed in service at the midpoint of the year for the purpose of the analysis. All retirements also are stated as occurring at the midpoint of a one-year age interval of time, except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by summing the amounts for each transaction year-installation year combination for that age interval. For example, the total of \$143,000 retired for age interval 4½-5½ is the sum of the retirements entered on Schedule 1 immediately above the stair step line drawn on the table beginning with the 2007 retirements of 2002 installations and ending with the 2016 retirements of the 2011 installations. Thus, the total amount of 143 for age interval 4½-5½ equals the sum of:

$$10 + 12 + 13 + 11 + 13 + 13 + 15 + 17 + 19 + 20.$$

SCHEDULE 1. RETIREMENTS FOR EACH YEAR 2007-2016
SUMMARIZED BY AGE INTERVAL

Experience Band 2007-2016

Placement Band 2002-2016

Year Placed	Retirements, Thousands of Dollars										Total During Age Interval	Age Interval
	During Year											
(1)	2007 (2)	2008 (3)	2009 (4)	2010 (5)	2011 (6)	2012 (7)	2013 (8)	2014 (9)	2015 (10)	2016 (11)	(12)	(13)
2002	10	11	12	13	14	16	23	24	25	26	26	13½-14½
2003	11	12	13	15	16	18	20	21	22	19	44	12½-13½
2004	11	12	13	14	16	17	19	21	22	18	64	11½-12½
2005	8	9	10	11	11	13	14	15	16	17	83	10½-11½
2006	9	10	11	12	13	14	16	17	19	20	93	9½-10½
2007	4	9	10	11	12	13	14	15	16	20	105	8½-9½
2008		5	11	12	13	14	15	16	18	20	113	7½-8½
2009			6	12	13	15	16	17	19	19	124	6½-7½
2010				6	13	15	16	17	19	19	131	5½-6½
2011					7	14	16	17	19	20	143	4½-5½
2012						8	18	20	22	23	146	3½-4½
2013							9	20	22	25	150	2½-3½
2014								11	23	25	151	1½-2½
2015									11	24	153	½-1½
2016										13	80	0-½
Total	53	68	86	106	128	157	196	231	273	308	1,606	

SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2007-2016
SUMMARIZED BY AGE INTERVAL

Experience Band 2007-2016

Placement Band 2002-2016

Year Placed	Acquisitions, Transfers and Sales, Thousands of Dollars										Total During Age Interval	Age Interval
	During Year											
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2002	-	-	-	-	-	-	60 ^a	-	-	-	-	13½-14½
2003	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2004	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2005	-	-	-	-	-	-	-	(5) ^b	-	-	60	10½-11½
2006	-	-	-	-	-	-	-	6 ^a	-	-	-	9½-10½
2007	-	-	-	-	-	-	-	-	-	-	(5)	8½-9½
2008	-	-	-	-	-	-	-	-	-	-	6	7½-8½
2009	-	-	-	-	-	-	-	-	-	-	-	6½-7½
2010	-	-	-	-	-	-	-	(12) ^b	-	-	-	5½-6½
2011	-	-	-	-	-	-	-	-	22 ^a	-	-	4½-5½
2012	-	-	-	-	-	-	-	(19) ^b	-	-	10	3½-4½
2013	-	-	-	-	-	-	-	-	-	-	-	2½-3½
2014	-	-	-	-	-	-	-	-	-	(102) ^c	(121)	1½-2½
2015	-	-	-	-	-	-	-	-	-	-	-	½-1½
2016	-	-	-	-	-	-	-	-	-	-	-	0-½
Total	-	-	-	-	-	-	60	(30)	22	(102)	(50)	

^a Transfer Affecting Exposures at Beginning of Year

^b Transfer Affecting Exposures at End of Year

^c Sale with Continued Use

Parentheses Denote Credit Amount.

In Schedule 2, other transactions which affect the group are recorded in a similar manner. The entries illustrated include transfers and sales. The entries which are credits to the plant account are shown in parentheses. The items recorded on this schedule are not totaled with the retirements, but are used in developing the exposures at the beginning of each age interval.

Schedule of Plant Exposed to Retirement

The development of the amount of plant exposed to retirement at the beginning of each age interval is illustrated in Schedule 3 on page II-14.

The surviving plant at the beginning of each year from 2007 through 2016 is recorded by year in the portion of the table headed "Annual Survivors at the Beginning of the Year." The last amount entered in each column is the amount of new plant added to the group during the year. The amounts entered in Schedule 3 for each successive year following the beginning balance or addition are obtained by adding or subtracting the net entries shown on Schedules 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being exposed to retirement in this group at the beginning of the year in which they occurred, and the sales and transfers-out are considered to be removed from the plant exposed to retirement at the beginning of the following year. Thus, the amounts of plant shown at the beginning of each year are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each successive transaction year. For example, the exposures for the installation year 2012 are calculated in the following manner:

Exposures at age 0	= amount of addition	= \$750,000
Exposures at age ½	= \$750,000 - \$ 8,000	= \$742,000
Exposures at age 1½	= \$742,000 - \$18,000	= \$724,000
Exposures at age 2½	= \$724,000 - \$20,000 - \$19,000	= \$685,000
Exposures at age 3½	= \$685,000 - \$22,000	= \$663,000

SCHEDULE 3. PLANT EXPOSED TO RETIREMENT
 JANUARY 1 OF EACH YEAR 2007-2016
 SUMMARIZED BY AGE INTERVAL

Experience Band 2007-2016

Placement Band 2002-2016

Year Placed (1)	Exposures, Thousands of Dollars										Total at Beginning of Age Interval (12)	Age Interval (13)
	Annual Survivors at the Beginning of the Year											
	2007 (2)	2008 (3)	2009 (4)	2010 (5)	2011 (6)	2012 (7)	2013 (8)	2014 (9)	2015 (10)	2016 (11)		
2002	255	245	234	222	209	195	239	216	192	167	167	13½-14½
2003	279	268	256	243	228	212	194	174	153	131	323	12½-13½
2004	307	296	284	271	257	241	224	205	184	162	531	11½-12½
2005	338	330	321	311	300	289	276	262	242	226	823	10½-11½
2006	376	367	357	346	334	321	307	297	280	261	1,097	9½-10½
2007	420 ^a	416	407	397	386	374	361	347	332	316	1,503	8½-9½
2008		460 ^a	455	444	432	419	405	390	374	356	1,952	7½-8½
2009			510 ^a	504	492	479	464	448	431	412	2,463	6½-7½
2010				580 ^a	574	561	546	530	501	482	3,057	5½-6½
2011					660 ^a	653	639	623	628	609	3,789	4½-5½
2012						750 ^a	742	724	685	663	4,332	3½-4½
2013							850 ^a	841	821	799	4,955	2½-3½
2014								960 ^a	949	926	5,719	1½-2½
2015									1,080 ^a	1,069	6,579	½-1½
2016										1,220 ^a	7,490	0-½
Total	1,975	2,382	2,824	3,318	3,872	4,494	5,247	6,017	6,852	7,799	44,780	

^aAdditions during the year

For the entire experience band 2007-2016, the total exposures at the beginning of an age interval are obtained by summing diagonally in a manner similar to the summing of the retirements during an age interval (Schedule 1). For example, the figure of 3,789, shown as the total exposures at the beginning of age interval 4½-5½, is obtained by summing:

$$255 + 268 + 284 + 311 + 334 + 374 + 405 + 448 + 501 + 609.$$

Original Life Table

The original life table, illustrated in Schedule 4 on page II-16, is developed from the totals shown on the schedules of retirements and exposures, Schedules 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving is developed by starting with 100% at age zero and successively multiplying the percent surviving at the beginning of each interval by the survivor ratio, i.e., one minus the retirement ratio for that age interval. The calculations necessary to determine the percent surviving at age 5½ are as follows:

Percent surviving at age 4½	=	88.15	
Exposures at age 4½	=	3,789,000	
Retirements from age 4½ to 5½	=	143,000	
Retirement Ratio	=	143,000 ÷ 3,789,000	= 0.0377
Survivor Ratio	=	1.000 - 0.0377	= 0.9623
Percent surviving at age 5½	=	(88.15) x (0.9623)	= 84.83

The totals of the exposures and retirements (columns 2 and 3) are shown for the purpose of checking with the respective totals in Schedules 1 and 3. The ratio of the total retirements to the total exposures, other than for each age interval, is meaningless.

**SCHEDULE 4. ORIGINAL LIFE TABLE
CALCULATED BY THE RETIREMENT RATE METHOD**

Experience Band 2007-2016

Placement Band 2002-2016

(Exposure and Retirement Amounts are in Thousands of Dollars)

Age at Beginning of Interval	Exposures at Beginning of Age Interval	Retirements During Age Interval	Retirement Ratio	Survivor Ratio	Percent Surviving at Beginning of Age Interval
(1)	(2)	(3)	(4)	(5)	(6)
0.0	7,490	80	0.0107	0.9893	100.00
0.5	6,579	153	0.0233	0.9767	98.93
1.5	5,719	151	0.0264	0.9736	96.62
2.5	4,955	150	0.0303	0.9697	94.07
3.5	4,332	146	0.0337	0.9663	91.22
4.5	3,789	143	0.0377	0.9623	88.15
5.5	3,057	131	0.0429	0.9571	84.83
6.5	2,463	124	0.0503	0.9497	81.19
7.5	1,952	113	0.0579	0.9421	77.11
8.5	1,503	105	0.0699	0.9301	72.65
9.5	1,097	93	0.0848	0.9152	67.57
10.5	823	83	0.1009	0.8991	61.84
11.5	531	64	0.1205	0.8795	55.60
12.5	323	44	0.1362	0.8638	48.90
13.5	<u>167</u>	<u>26</u>	0.1557	0.8443	42.24
Total	<u>44,780</u>	<u>1,606</u>			35.66

Column 2 from Schedule 3, Column 12, Plant Exposed to Retirement.

Column 3 from Schedule 1, Column 12, Retirements for Each Year.

Column 4 = Column 3 Divided by Column 2.

Column 5 = 1.0000 Minus Column 4.

Column 6 = Column 5 Multiplied by Column 6 as of the Preceding Age Interval.

The original survivor curve is plotted from the original life table (column 6, Schedule 4). When the curve terminates at a percent surviving greater than zero, it is called a stub survivor curve. Survivor curves developed from retirement rate studies generally are stub curves.

Smoothing the Original Survivor Curve

The smoothing of the original survivor curve eliminates any irregularities and serves as the basis for the preliminary extrapolation to zero percent surviving of the original stub curve. Even if the original survivor curve is complete from 100% to zero percent, it is desirable to eliminate any irregularities, as there is still an extrapolation for the vintages which have not yet lived to the age at which the curve reaches zero percent. In this study, the smoothing of the original curve with established type curves was used to eliminate irregularities in the original curve.

The Iowa type curves are used in this study to smooth those original stub curves which are expressed as percents surviving at ages in years. Each original survivor curve was compared to the Iowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8, the original curve developed in Schedule 4 is compared with the L, S, and R Iowa type curves which most nearly fit the original survivor curve. In Figure 6, the L1 curve with an average life between 12 and 13 years appears to be the best fit. In Figure 7, the S0 type curve with a 12-year average life appears to be the best fit and appears to be better than the L1 fitting. In Figure 8, the R1 type curve with a 12-year average life appears to be the best fit and appears to be better than either the L1 or the S0.

In Figure 9, the three fittings, 12-L1, 12-S0 and 12-R1 are drawn for comparison purposes. It is probable that the 12-R1 Iowa curve would be selected as the most representative of the plotted survivor characteristics of the group.



FIGURE 6. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES

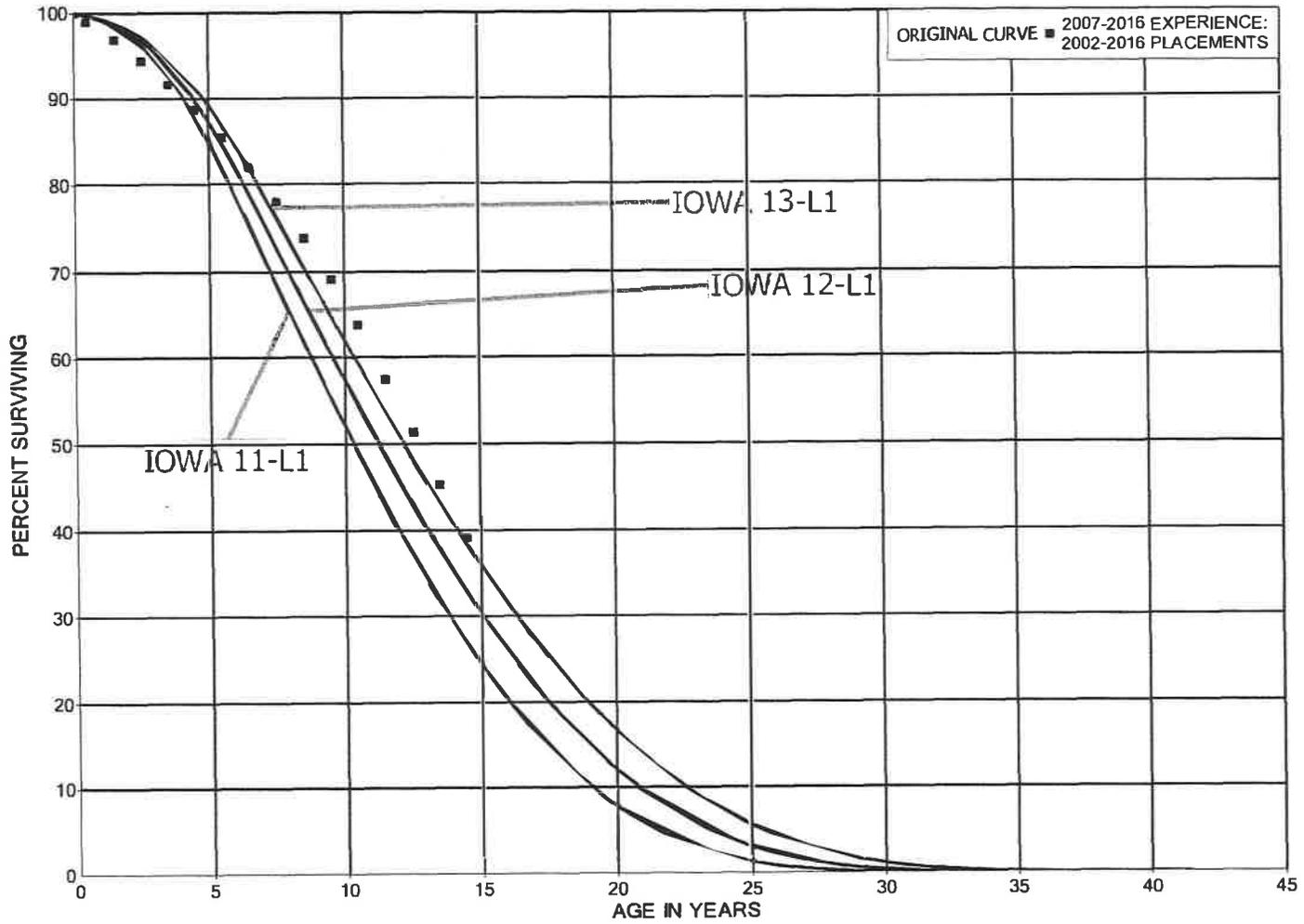




FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN S0 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES

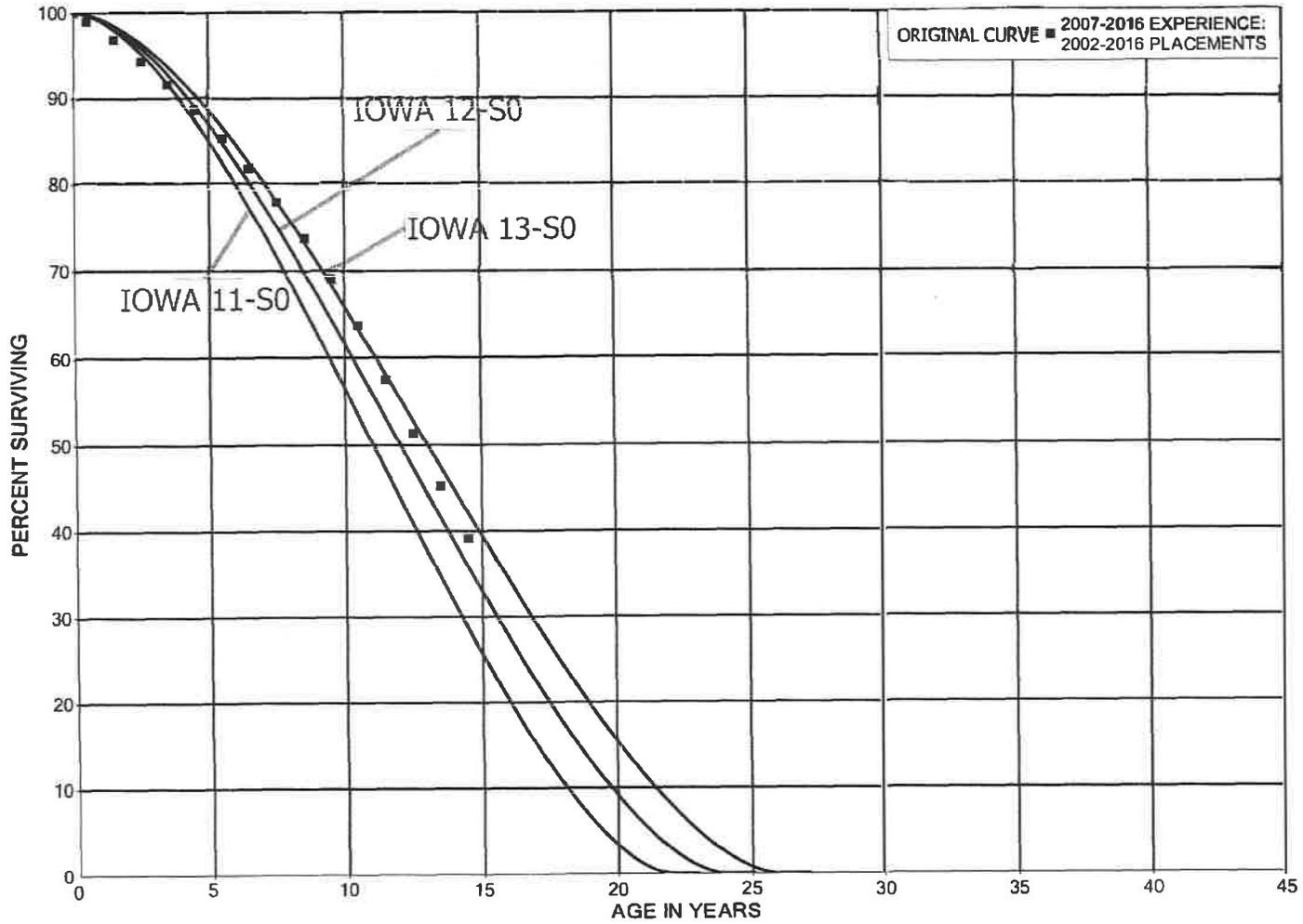




FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES

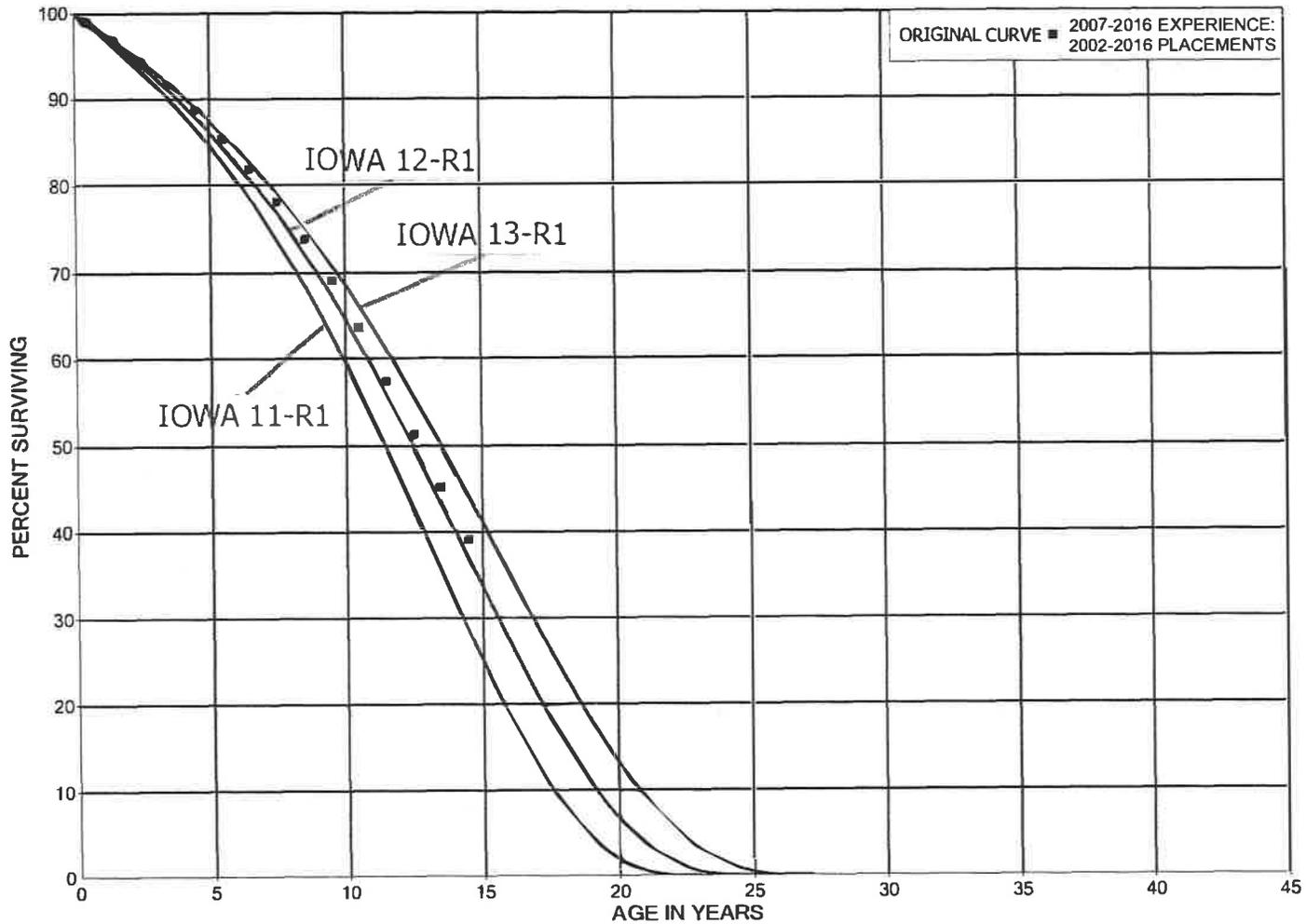
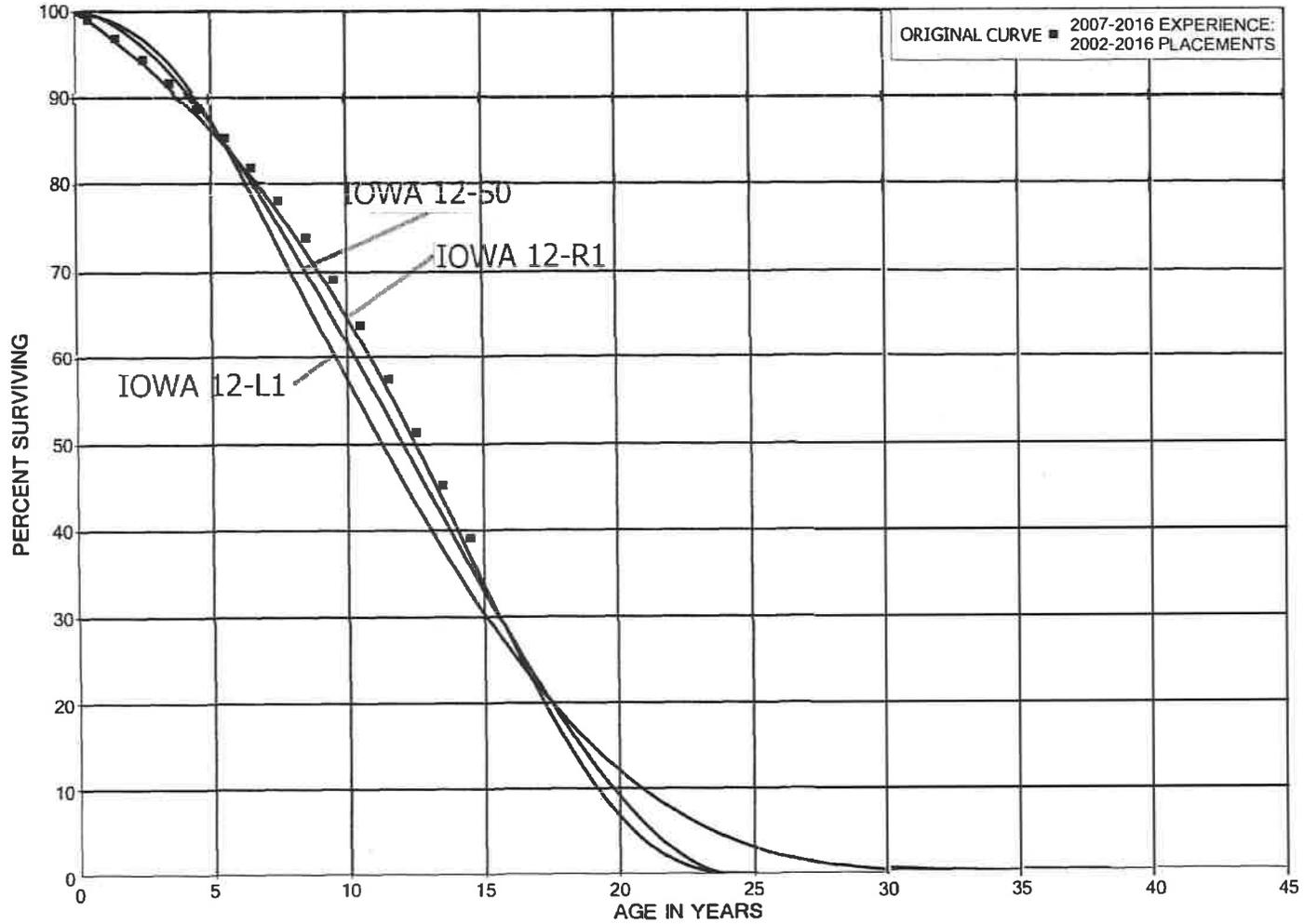




FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, S0 AND R1 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES



PART III. SERVICE LIFE CONSIDERATIONS

PART III. SERVICE LIFE CONSIDERATIONS

FIELD TRIPS

In order to be familiar with the operation of the Company and observe representative portions of the plant, field trips were conducted for the study. A general understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements are obtained during field trips. This knowledge and information were incorporated in the interpretation and extrapolation of the statistical analyses.

The following is a list of the locations visited during the recent field trip.

November 7-8, 2017

Howland Treatment Plant
Well House #6
Tuckertown Treatment Plant
Well House #4
Sherman Tank
Tower Hill Tank
Boston Neck Tank
Route 1 (Indian Lake) Booster Station
Saugatucket Road Booster Station
Strathmore Pump Station

Service Life Analysis

The service life estimates were based on judgment which considered a number of factors. The primary factors were the statistical analyses of data; current company policies and outlook as determined during field reviews of the property and other conversations with management; and the survivor curve estimates from previous studies of this company and other water companies.

For some of the mass plant accounts and subaccounts, the statistical analyses resulted in good to excellent indications of significant survivor patterns. Generally, the

information external to the statistics led to no significant departure from the indicated survivor curves for the accounts listed below.

<u>Account No.</u>	<u>Account Description</u>
304.10	Structures and Improvements – Source of Supply
304.20	Structures and Improvements – Pumping
304.30	Structures and Improvements – Treatment
304.40	Structures and Improvements – Transmission and Distribution
304.50	Structures and Improvements – General
311.00	Pumping Equipment
320.00	Water Treatment Equipment
330.00	Distribution Reservoirs and Standpipes
334.00	Meters and Meter Installations
335.00	Hydrants

Account 334.00, Meters and Meter Installations, is used to illustrate the manner in which the study was conducted for the accounts in the preceding list. Aged plant accounting data have been compiled for the years through 2016. These data have been coded according to account or property group, type of transaction, year in which the transaction took place, and year in which the utility plant was placed in service. The retirements, other plant transactions and plant additions were analyzed by the retirement rate method.

The survivor curve estimate for this account is the 37-R3 and is based on the statistical indication for the period 2008-2016. The 37-R3 is an excellent fit of the significant portion of the original survivor curve as set forth on page VII-32, is consistent with management outlook for a continuation of the historical experience, and is within the typical service life range of 30 to 40 years for standard meters and meter installations.

Amortization accounting is proposed for certain General Plant accounts that represent numerous units of property, but a small portion of the depreciable plant in service. These accounts represent less than 5 percent of total water plant. A discussion

of the basis for the amortization periods is presented in the section "Calculation of Annual and Accrued Amortization".

Generally, the estimates for the remaining accounts of the total depreciable plant in service were based on judgments which considered the nature of the plant and equipment, the previous estimate for this company and a general knowledge of service lives for similar equipment in other water companies.

PART IV. NET SALVAGE CONSIDERATIONS

PART IV. NET SALVAGE CONSIDERATIONS

SALVAGE ANALYSIS

The estimates of net salvage by account were based in part on historical data compiled for the years 2005 through 2016. Cost of removal and salvage were expressed as percents of the original cost of plant retired, both on annual and three-year moving average bases. The most recent five-year average also was calculated for consideration. The net salvage estimates by account are expressed as a percent of the original cost of plant retired.

Net Salvage Considerations

The estimates of salvage were based primarily on judgment which considered a number of factors. The primary factors were the analyses of historical data; a knowledge of management's plans and operating policies; and net salvage estimates from previous studies of this company and other water companies.

Account 333.00 Services, is used to illustrate the manner in which the study was conducted for all accounts. Depreciation reserve accounting data were compiled for the years 2005 through 2016. These data include the retirements, cost of removal and gross salvage.

The net salvage estimate for this account is negative 45 percent and is based on the historical analyses and the trends in cost of removal and salvage percents as shown in the tabulation on page VIII-8. Cost of removal as a percent of the original cost retired has only been recorded in the last few years. The overall and most recent five-year bands averaged 43 and 100 percent removal cost, respectively. Gross salvage has been zero percent for the overall period. The negative 45 percent net salvage estimate is based on the overall cost of removal and gross salvage percent with a focus on the most recent

trend as well as the estimate of other water companies which ranges from negative 30 to negative 75 percent.

Amortization accounting is proposed for certain General Plant accounts which represent less than 5 percent of depreciable property. The estimate of net salvage for accounts subject to amortization is zero percent.

Generally, the net salvage estimates for the remaining accounts of the total depreciable plant in service, were based on judgments which considered the nature of the plant and equipment, reviews of available historical data, and a general knowledge of net salvage percents for similar equipment in other water companies.

**PART V. CALCULATION OF ANNUAL AND
ACCRUED DEPRECIATION**

PART V. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

GROUP DEPRECIATION PROCEDURES

A group procedure for depreciation is appropriate when considering more than a single item of property. Normally the items within a group do not have identical service lives, but have lives that are dispersed over a range of time. There are two primary group procedures, namely, average service life and equal life group. In the average service life procedure, the rate of annual depreciation is based on the average life or average remaining life of the group, and this rate is applied to the surviving balances of the group's cost. A characteristic of this procedure is that the cost of plant retired prior to average life is not fully recouped at the time of retirement, whereas the cost of plant retired subsequent to average life is more than fully recouped. Over the entire life cycle, the portion of cost not recouped prior to average life is balanced by the cost recouped subsequent to average life.

Single Unit of Property

The calculation of straight line depreciation for a single unit of property is straightforward. For example, if a \$1,000 unit of property attains an age of four years and has a life expectancy of six years, the annual accrual over the total life is:

$$\frac{\$1,000}{(4 + 6)} = \$100 \text{ per year.}$$

The accrued depreciation is:

$$\$1,000 \left(1 - \frac{6}{10} \right) = \$400.$$

Group Depreciation Procedures

When more than a single item of property is under consideration, a group procedure for depreciation is appropriate because normally all of the items within a group do not have identical service lives, but have lives that are dispersed over a range of time. There are two primary group procedures, namely, average service life and equal life group.

Remaining Life Annual Accruals

For the purpose of calculating remaining life accruals as of December 31, 2016, the depreciation reserve for each plant account is allocated among vintages in proportion to the calculated accrued depreciation for the account. Explanations of remaining life accruals and calculated accrued depreciation follow. The detailed calculations as of December 31, 2016, are set forth in the Results of Study section of the report.

Average Service Life Procedure

In the average service life procedure, the remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the average remaining life of the vintage. The average remaining life is a directly weighted average derived from the estimated future survivor curve in accordance with the average service life procedure.

The calculated accrued depreciation for each depreciable property group represents that portion of the depreciable cost of the group which would not be allocated to expense through future depreciation accruals, if current forecasts of life characteristics are used as the basis for such accruals. The accrued depreciation calculation consists of applying an appropriate ratio to the surviving original cost of each vintage of each

account, based upon the attained age and service life. The straight line accrued depreciation ratios are calculated as follows for the average service life procedure:

$$\text{Ratio} = 1 - \frac{\text{Average Remaining Life}}{\text{Average Service Life}}$$

CALCULATION OF ANNUAL AND ACCRUED AMORTIZATION

Amortization is the gradual extinguishment of an amount in an account by distributing such amount over a fixed period, over the life of the asset or liability to which it applies, or over the period during which it is anticipated the benefit will be realized. Normally, the distribution of the amount is in equal amounts to each year of the amortization period.

The calculation of annual and accrued amortization requires the selection of an amortization period. The amortization periods used in this report were based on judgment which incorporated a consideration of the period during which the assets will render most of their service, the amortization period and service lives used by other utilities, and the service life estimates previously used for the asset under depreciation accounting.

Amortization accounting is proposed for certain General Plant accounts that represent numerous units of property, but a very small portion of depreciable utility plant in service. The accounts and their amortization periods are as follows:

	<u>Account</u>	<u>Amortization Period, Years</u>
340.00	Office Furniture and Equipment	
	Hardware	5
	Software	5
	CC&B Lighthouse	8
	Furniture and Equipment	15
343.00	Tools, Shop and Garage Equipment	25
346.00	Communication Equipment	15
347.00	Miscellaneous Equipment	25

The calculated accrued amortization is equal to the original cost multiplied by the ratio of the vintage's age to its amortization period. The annual amortization amount is determined by dividing the original cost by the period of amortization for the account.

PART VI. RESULTS OF STUDY

PART VI. RESULTS OF STUDY

QUALIFICATION OF RESULTS

The calculated annual and accrued depreciation are the principal results of the study. Continued surveillance and periodic revisions are normally required to maintain continued use of appropriate annual depreciation accrual rates. An assumption that accrual rates can remain unchanged over a long period of time implies a disregard for the inherent variability in service lives and salvage and for the change of the composition of property in service. The annual accrual rates were calculated in accordance with the straight line remaining life method of depreciation, using the average service life procedure based on estimates which reflect considerations of current historical evidence and expected future conditions.

The annual depreciation accrual rates are applicable specifically to the water plant in service as of December 31, 2016. For most plant accounts, the application of such rates to future balances that reflect additions subsequent to December 31, 2016, is reasonable for a period of three to five years.

DESCRIPTION OF DETAILED TABULATIONS

A summary of the results of the study, as applied to the original cost of water plant in service at December 31, 2016, is presented on pages VI-5 and VI-6 of this report. The table sets forth the original cost, the book depreciation reserve, future accruals, the calculated annual depreciation rate and amount, and the composite remaining life related to water plant.

The service life estimates were based on judgment that incorporated statistical analysis of retirement data, discussions with management and consideration of estimates

made for other water utilities. The results of the statistical analysis of service life are presented in the section beginning on page VII-2, within the supporting documents of this report.

For each depreciable group analyzed by the retirement rate method, a chart depicting the original and estimated survivor curves followed by a tabular presentation of the original life table(s) plotted on the chart. The survivor curves estimated for the depreciable groups are shown as dark smooth curves on the charts. Each smooth survivor curve is denoted by a numeral followed by the curve type designation. The numeral used is the average life derived from the entire curve from 100 percent to zero percent surviving. The titles of the chart indicate the group, the symbol used to plot the points of the original life table, and the experience and placement bands of the life tables which were plotted. The experience band indicates the range of years for which retirements were used to develop the stub survivor curve. The placements indicate, for the related experience band, the range of years of installations which appear in the experience.

The analyses of salvage data are presented in the section titled, "Net Salvage Statistics". The tabulations present annual cost of removal and salvage data, three-year moving averages and the most recent five-year average. Data are shown in dollars and as percentages of original costs retired.

The tables of the calculated annual depreciation applicable to depreciable assets as of December 31, 2016 are presented in account sequence starting on page IX-2 of the supporting documents. The tables indicate the estimated survivor curve and net salvage percent for the account and set forth, for each installation year, the original cost, the

calculated accrued depreciation, the allocated book reserve, future accruals, the remaining life, and the calculated annual accrual amount.



SUEZ WATER RHODE ISLAND

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2016

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE (3)	ORIGINAL COST	BOOK RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL		COMPOSITE REMAINING LIFE (9)	
			AS OF DECEMBER 31, 2016 (4)			ACCRUAL AMOUNT (7)	ACCRUAL RATE (8)=(7)/(4)		
DEPRECIABLE PLANT									
STRUCTURES AND IMPROVEMENTS									
304.10	SOURCE OF SUPPLY	50-R3	(5)	746,416.15	168,030	615,707	16,401	2.20	37.5
304.30	TREATMENT	50-R3	(5)	17,105.98	10,006	7,955	394	2.30	20.2
304.40	TRANSMISSION AND DISTRIBUTION	50-R3	(5)	139,984.82	40,498	106,486	2,326	1.66	45.8
304.50	GENERAL	50-R3	(5)	205,020.99	90,293	124,979	2,969	1.45	42.1
TOTAL STRUCTURES AND IMPROVEMENTS				1,108,527.94	308,828	855,127	22,090	1.99	38.7
WELLS AND SPRINGS									
307.00	WELLS AND SPRINGS	35-S1	(5)	452,460.84	138,455	336,629	18,022	3.98	18.7
INFILTRATION GALLERIES AND TUNNELS									
308.00	INFILTRATION GALLERIES AND TUNNELS	55-R2.5	0	1,601.00	88	1,513	31	1.94	48.8
SUPPLY MAINS									
309.00	SUPPLY MAINS	55-S2	0	51,099.08	13,317	37,782	1,468	2.87	25.7
PUMPING EQUIPMENT									
311.00	PUMPING EQUIPMENT	45-R4	(10)	1,533,833.72	819,534	867,684	29,092	1.90	29.8
WATER TREATMENT EQUIPMENT									
320.00	WATER TREATMENT EQUIPMENT	40-S0.5	(10)	540,063.16	243,064	351,005	11,213	2.08	31.3
DISTRIBUTION RESERVOIRS AND STANDPIPES									
330.00	DISTRIBUTION RESERVOIRS AND STANDPIPES	50-R4	(30)	4,335,552.03	263,873	5,372,345	127,209	2.93	42.2
MAINS									
331.00	MAINS	110-R3	(25)	12,379,419.72	2,422,420	13,051,855	160,212	1.29	81.5
SERVICES									
333.00	SERVICES	80-R4	(45)	3,816,707.71	1,221,315	4,312,911	67,267	1.76	64.1
METERS AND METER INSTALLATIONS									
334.00	METERS AND METER INSTALLATIONS	37-R3	0	2,949,829.94	913,858	2,035,972	75,627	2.56	26.9
HYDRANTS									
335.00	HYDRANTS	65-R4	(20)	1,058,166.29	425,382	844,417	18,333	1.73	46.1
MISCELLANEOUS INTANGIBLE PLANT									
339.10	MISCELLANEOUS INTANGIBLE PLANT	20-SQ	0	231,443.74	0	231,444	19,983	8.63	11.6
MISCELLANEOUS INTANGIBLE PLANT - OTHER EQUIPMENT									
339.20	MISCELLANEOUS INTANGIBLE PLANT - OTHER EQUIPMENT	30-S2.5	0	108,066.72	60,823	47,244	2,214	2.05	21.3
OFFICE FURNITURE AND EQUIPMENT									
HARDWARE									
340.00	HARDWARE	5-SQ	0	103,384.74	71,118	32,267	20,698	20.02	1.6
SOFTWARE									
	SOFTWARE	5-SQ	0	223,845.68	142,743	81,103	57,429	25.66	1.4
CC & B - LIGHTHOUSE									
	CC & B - LIGHTHOUSE	8-SQ	0	552,855.90	395,586	157,270	62,908	11.38	2.5
FURNITURE AND EQUIPMENT									
	FURNITURE AND EQUIPMENT	15-SQ	0	62,632.47	7,441	55,191	7,881	12.58	7.0
TOTAL OFFICE FURNITURE AND EQUIPMENT				942,718.79	616,888	325,831	148,916	15.80	2.2
TRANSPORTATION EQUIPMENT									
341.00	TRANSPORTATION EQUIPMENT	12-L3	0	3,451.18	460	2,991	444	12.87	6.7
TOOLS, SHOP AND GARAGE EQUIPMENT									
343.00	TOOLS, SHOP AND GARAGE EQUIPMENT	25-SQ	0	74,006.64	39,151	34,856	1,728	2.33	20.2
POWER OPERATED EQUIPMENT									
345.00	POWER OPERATED EQUIPMENT	18-L2.5	0	15,685.42	8,210	7,475	679	4.33	11.0
COMMUNICATION EQUIPMENT									
346.00	COMMUNICATION EQUIPMENT	15-SQ	0	290,972.23	55,799	235,174	29,246	10.05	8.0
MISCELLANEOUS EQUIPMENT									
347.00	MISCELLANEOUS EQUIPMENT	25-SQ	0	79,677.36	16,881	62,797	4,623	5.80	13.6
TOTAL DEPRECIABLE PLANT				29,973,283.51	7,568,345	29,015,052	738,397	2.46	39.3



SUEZ WATER RHODE ISLAND

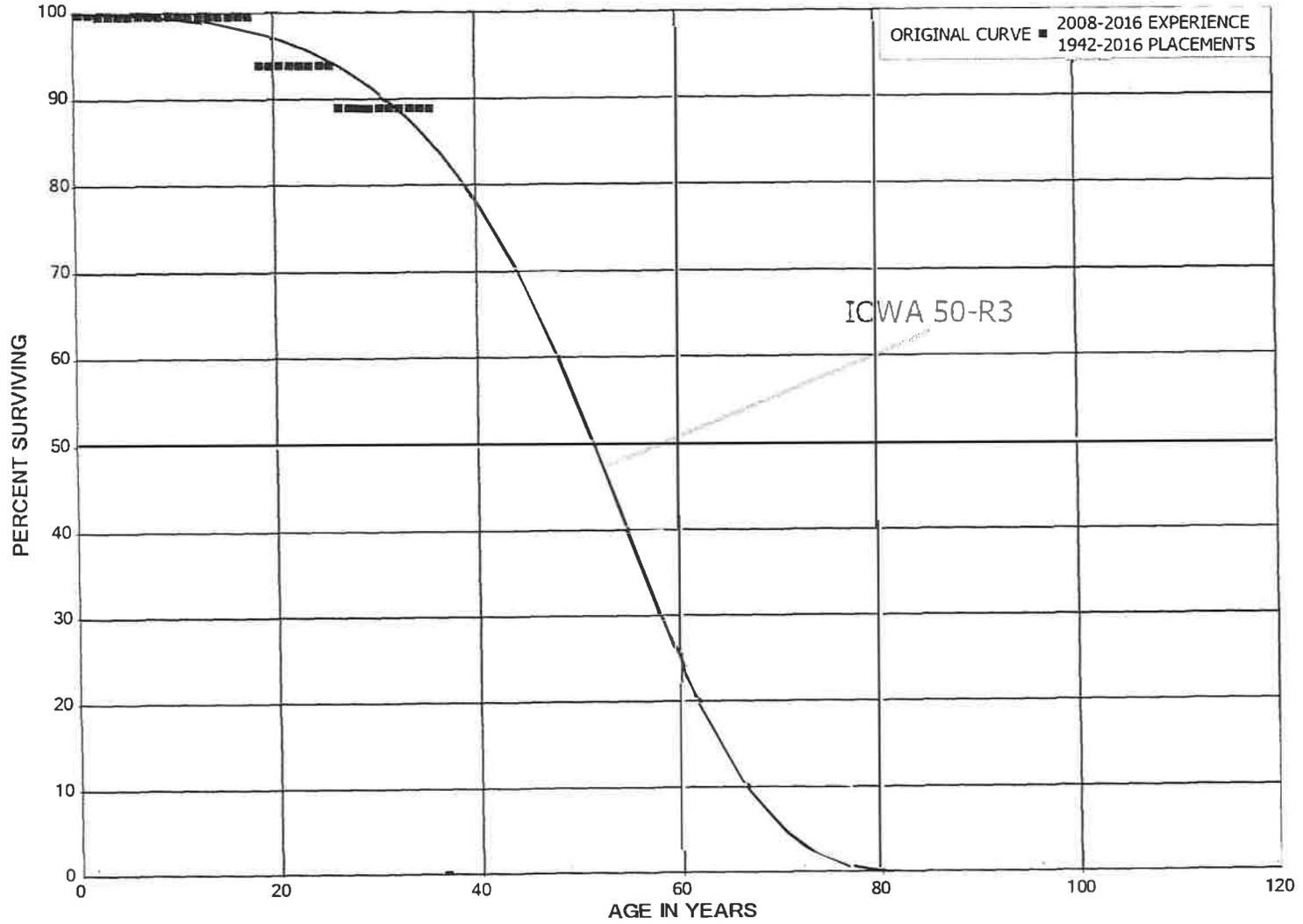
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2016

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE (3)	ORIGINAL COST	BOOK	FUTURE	CALCULATED ANNUAL		COMPOSITE
			AS OF DECEMBER 31, 2016 (4)	RESERVE (5)	ACCRUALS (6)	ACCRUAL AMOUNT (7)	ACCRUAL RATE (8)=(7)/(4)	REMAINING LIFE (9)
NONDEPRECIABLE PLANT								
301.00 ORGANIZATION			963.00					
303.10 LAND AND LAND RIGHTS			33,318.66					
303.20 LAND AND LAND RIGHTS			<u>1,861.50</u>					
TOTAL NONDEPRECIABLE PLANT			<u>36,143.16</u>					
TOTAL WATER PLANT			<u>30,009,426.67</u>	<u>7,568,345</u>	<u>29,015,052</u>	<u>738,397</u>		

PART VII. SERVICE LIFE STATISTICS



SUEZ WATER RHODE ISLAND
ACCOUNTS 304.1 THROUGH 304.5 STRUCTURES AND IMPROVEMENTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNTS 304.1 THROUGH 304.5 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1942-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	867,625	2,165	0.0025	0.9975	100.00
0.5	865,690		0.0000	1.0000	99.75
1.5	883,576	2,172	0.0025	0.9975	99.75
2.5	878,707		0.0000	1.0000	99.51
3.5	760,389		0.0000	1.0000	99.51
4.5	794,496		0.0000	1.0000	99.51
5.5	780,341		0.0000	1.0000	99.51
6.5	721,184		0.0000	1.0000	99.51
7.5	246,977		0.0000	1.0000	99.51
8.5	115,924		0.0000	1.0000	99.51
9.5	115,924		0.0000	1.0000	99.51
10.5	98,039		0.0000	1.0000	99.51
11.5	129,241		0.0000	1.0000	99.51
12.5	144,704		0.0000	1.0000	99.51
13.5	110,597		0.0000	1.0000	99.51
14.5	110,597		0.0000	1.0000	99.51
15.5	99,184		0.0000	1.0000	99.51
16.5	46,665		0.0000	1.0000	99.51
17.5	66,716	3,967	0.0595	0.9405	99.51
18.5	62,749		0.0000	1.0000	93.59
19.5	62,749		0.0000	1.0000	93.59
20.5	35,514		0.0000	1.0000	93.59
21.5	20,051		0.0000	1.0000	93.59
22.5	21,666		0.0000	1.0000	93.59
23.5	21,666		0.0000	1.0000	93.59
24.5	21,666		0.0000	1.0000	93.59
25.5	21,666	1,126	0.0520	0.9480	93.59
26.5	1,615		0.0000	1.0000	88.72
27.5	2,023		0.0000	1.0000	88.72
28.5	2,023		0.0000	1.0000	88.72
29.5	2,023		0.0000	1.0000	88.72
30.5	2,023		0.0000	1.0000	88.72
31.5	408		0.0000	1.0000	88.72
32.5	408		0.0000	1.0000	88.72
33.5	408		0.0000	1.0000	88.72
34.5	408		0.0000	1.0000	88.72
35.5	408	408	1.0000		88.72
36.5	38,536		0.0000	1.0000	
37.5	38,536		0.0000		
38.5	38,536		0.0000		

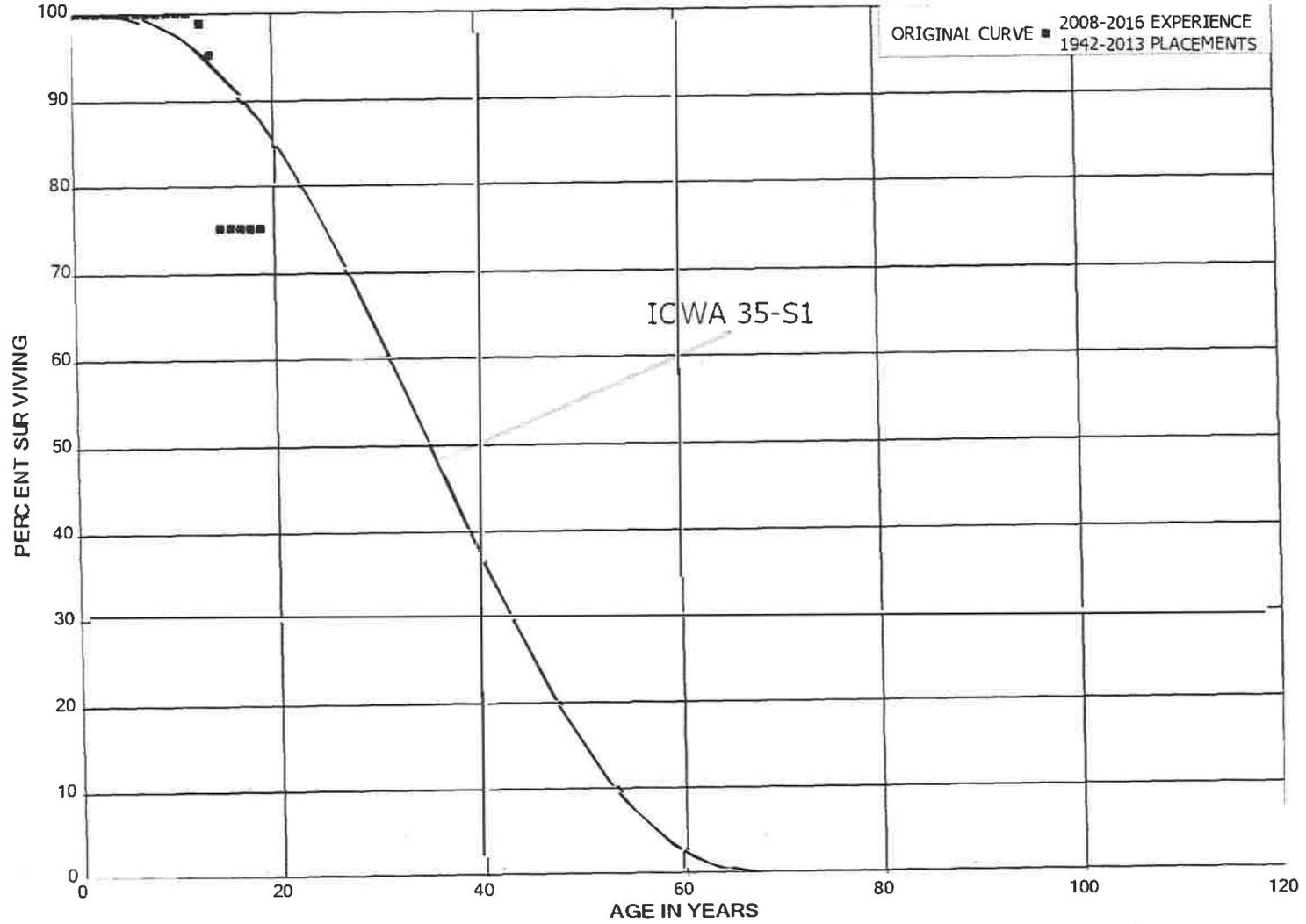
SUEZ WATER RHODE ISLAND

ACCOUNTS 304.1 THROUGH 304.5 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1942-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	40,720			0.0000	
40.5	40,720	1,500	0.0368		
41.5	56,267		0.0000		
42.5	56,267		0.0000		
43.5	56,267	604	0.0107		
44.5	55,663	29,235	0.5252		
45.5	17,731		0.0000		
46.5	17,731	684	0.0386		
47.5	17,047		0.0000		
48.5	17,047	365	0.0214		
49.5	16,682	3,290	0.1972		
50.5					
51.5					
52.5					
53.5					
54.5					
55.5					
56.5					
57.5	12,951		0.0000		
58.5	27,286		0.0000		
59.5	27,286		0.0000		
60.5	27,286		0.0000		
61.5	27,286		0.0000		
62.5	27,286		0.0000		
63.5	27,286		0.0000		
64.5	27,286	732	0.0268		
65.5	49,003	3,360	0.0686		
66.5	36,087	390	0.0108		
67.5	22,449		0.0000		
68.5	22,449		0.0000		
69.5	22,449		0.0000		
70.5	22,449		0.0000		
71.5	22,449		0.0000		
72.5	22,449	986	0.0439		
73.5	21,463	2,450	0.1141		
74.5					

SUEZ WATER RHODE ISLAND
ACCOUNT 307 WELLS AND SPRINGS
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND
ACCOUNT 307 WELLS AND SPRINGS
ORIGINAL LIFE TABLE

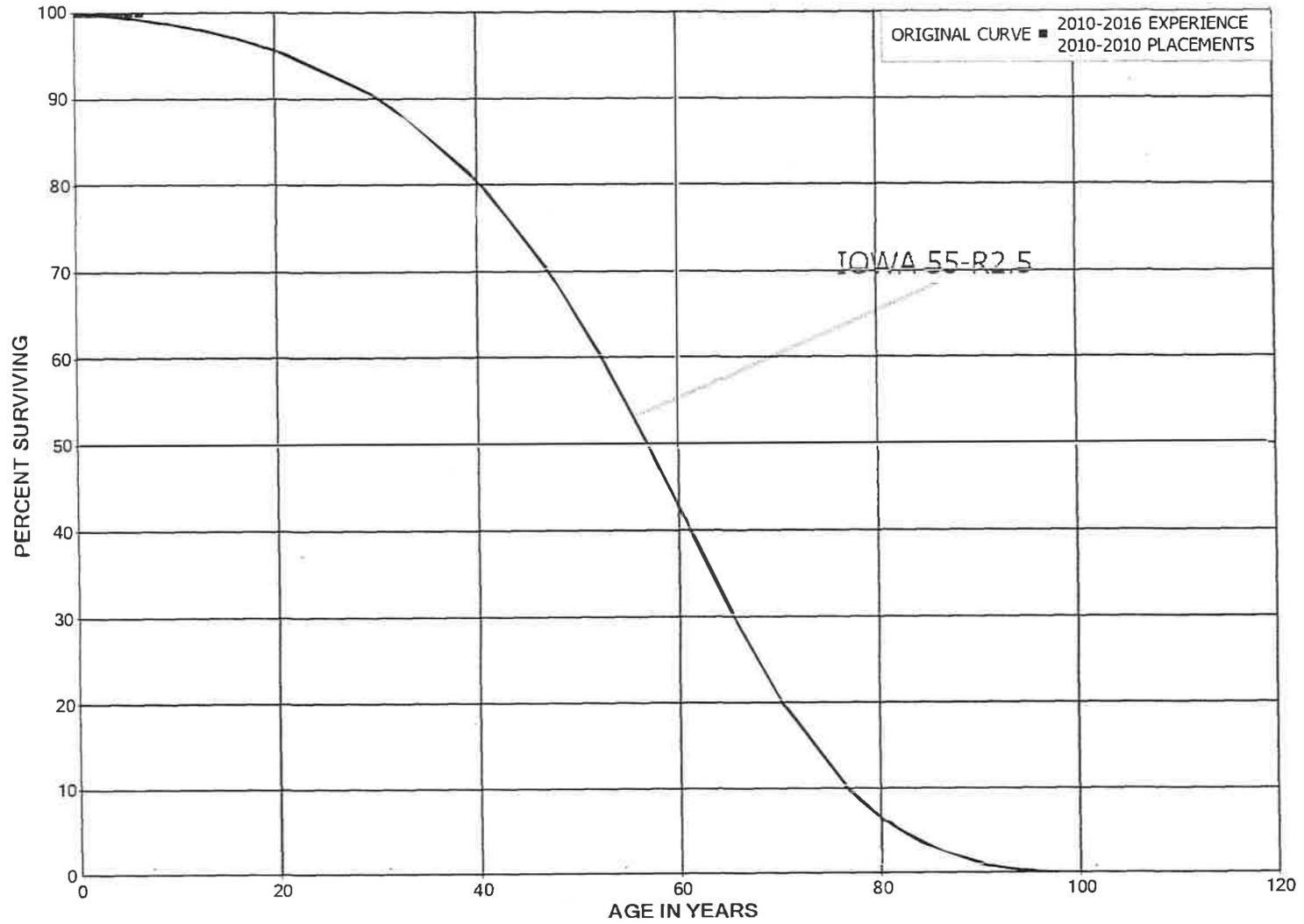
PLACEMENT BAND 1942-2013			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	148,212		0.0000	1.0000	100.00
0.5	167,352		0.0000	1.0000	100.00
1.5	167,352		0.0000	1.0000	100.00
2.5	167,352		0.0000	1.0000	100.00
3.5	128,592		0.0000	1.0000	100.00
4.5	46,972		0.0000	1.0000	100.00
5.5	46,972		0.0000	1.0000	100.00
6.5	312,792		0.0000	1.0000	100.00
7.5	299,363		0.0000	1.0000	100.00
8.5	287,931		0.0000	1.0000	100.00
9.5	284,861		0.0000	1.0000	100.00
10.5	284,861		0.0000	1.0000	100.00
11.5	284,861	4,250	0.0149	0.9851	100.00
12.5	280,611	10,000	0.0356	0.9644	98.51
13.5	270,611	57,577	0.2128	0.7872	95.00
14.5	213,034		0.0000	1.0000	74.79
15.5	19,041		0.0000	1.0000	74.79
16.5	19,041		0.0000	1.0000	74.79
17.5	16,070		0.0000	1.0000	74.79
18.5					74.79
19.5					
20.5					
21.5					
22.5					
23.5					
24.5	18,584		0.0000		
25.5	18,584		0.0000		
26.5	18,584		0.0000		
27.5	18,584		0.0000		
28.5	18,584		0.0000		
29.5	18,584		0.0000		
30.5	18,584		0.0000		
31.5	18,584		0.0000		
32.5	18,584		0.0000		
33.5					
34.5					
35.5					
36.5	31,258		0.0000		
37.5	31,258		0.0000		
38.5	31,258		0.0000		

SUEZ WATER RHODE ISLAND
ACCOUNT 307 WELLS AND SPRINGS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1942-2013			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	31,258		0.0000		
40.5	31,258		0.0000		
41.5	59,054		0.0000		
42.5	59,054		0.0000		
43.5	59,054		0.0000		
44.5	59,054	22,240	0.3766		
45.5	27,796		0.0000		
46.5	27,796		0.0000		
47.5	27,796		0.0000		
48.5	27,796		0.0000		
49.5	27,796		0.0000		
50.5					
51.5					
52.5					
53.5					
54.5					
55.5					
56.5					
57.5	5,321		0.0000		
58.5	14,777		0.0000		
59.5	14,777		0.0000		
60.5	14,777		0.0000		
61.5	14,777		0.0000		
62.5	14,777		0.0000		
63.5	14,777		0.0000		
64.5	14,777		0.0000		
65.5	33,400		0.0000		
66.5	28,079	4,751	0.1692		
67.5	18,623		0.0000		
68.5	18,623		0.0000		
69.5	18,623		0.0000		
70.5	18,623		0.0000		
71.5	18,623		0.0000		
72.5	18,623		0.0000		
73.5	18,623	11,972	0.6429		
74.5					



SUEZ WATER RHODE ISLAND
ACCOUNT 308 INFILTRATION GALLERIES AND TUNNELS
ORIGINAL AND SMOOTH SURVIVOR CURVES



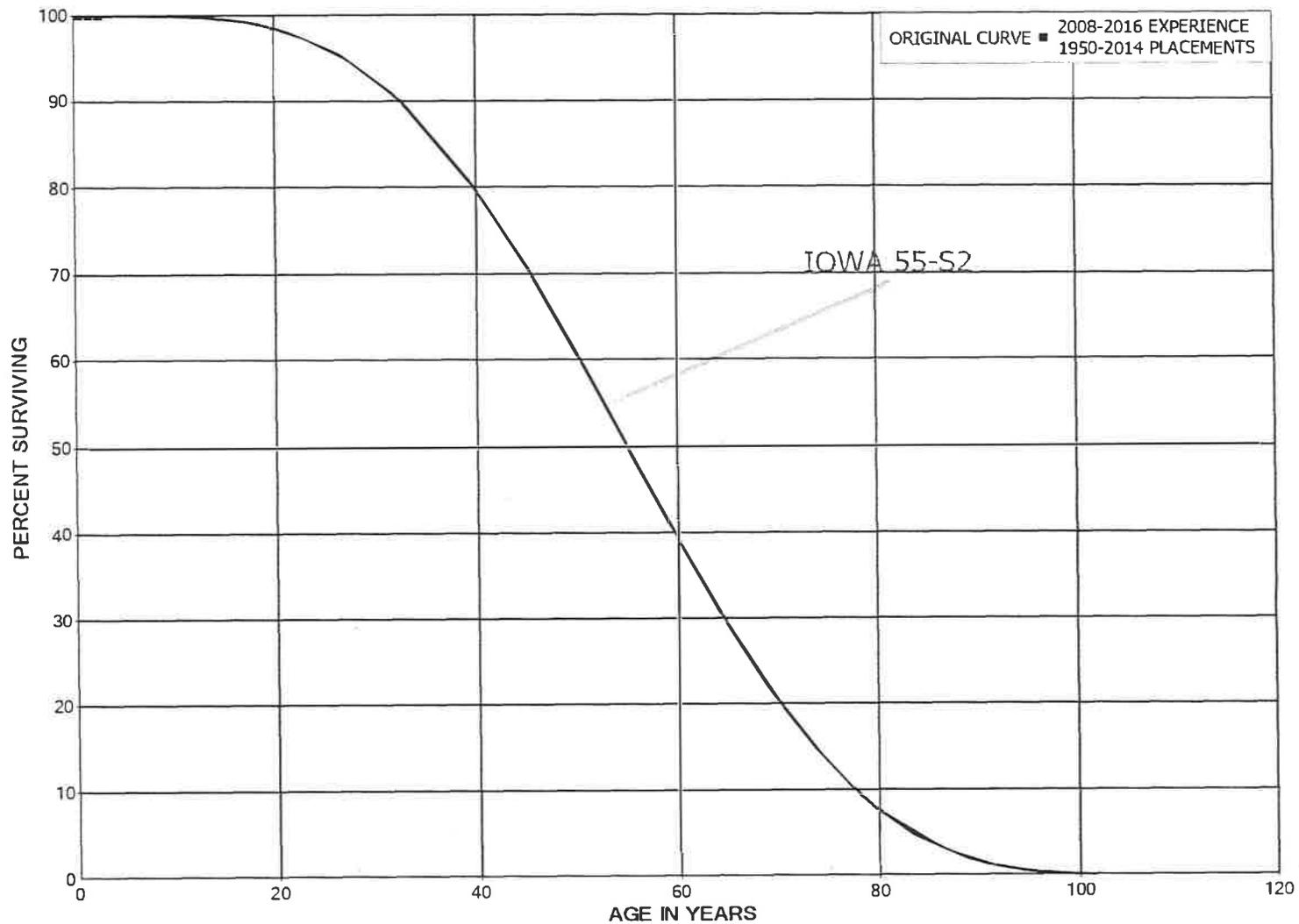
SUEZ WATER RHODE ISLAND

ACCOUNT 308 INFILTRATION GALLERIES AND TUNNELS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2010-2010			EXPERIENCE BAND 2010-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,601		0.0000	1.0000	100.00
0.5	1,601		0.0000	1.0000	100.00
1.5	1,601		0.0000	1.0000	100.00
2.5	1,601		0.0000	1.0000	100.00
3.5	1,601		0.0000	1.0000	100.00
4.5	1,601		0.0000	1.0000	100.00
5.5	1,601		0.0000	1.0000	100.00
6.5					100.00

SUEZ WATER RHODE ISLAND
ACCOUNT 309 SUPPLY MAINS
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNT 309 SUPPLY MAINS

ORIGINAL LIFE TABLE

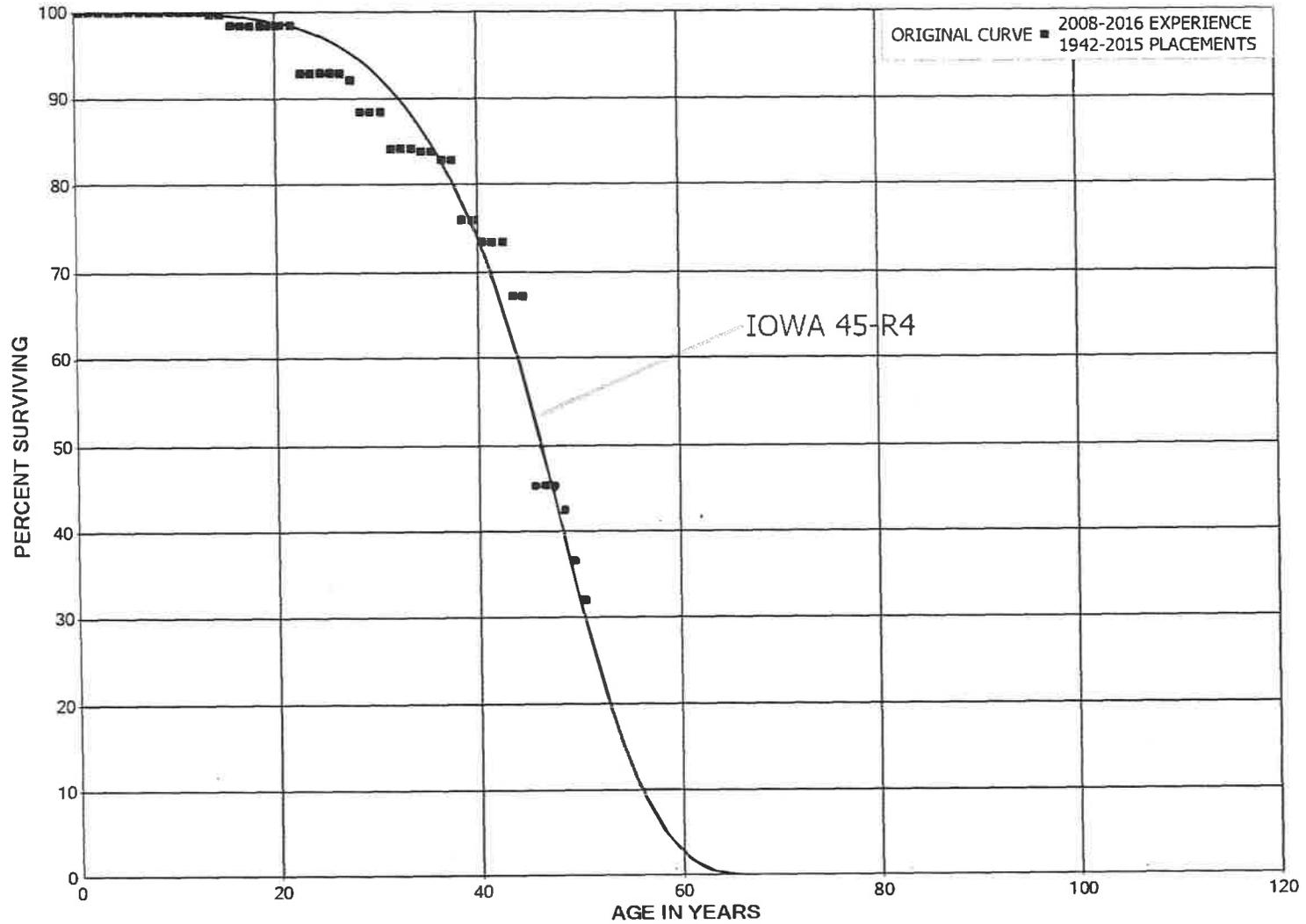
PLACEMENT BAND 1950-2014			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	11,144		0.0000	1.0000	100.00
0.5	11,144		0.0000	1.0000	100.00
1.5	11,144		0.0000	1.0000	100.00
2.5					100.00
3.5					
4.5					
5.5					
6.5					
7.5					
8.5					
9.5					
10.5					
11.5					
12.5					
13.5					
14.5					
15.5					
16.5					
17.5					
18.5					
19.5	19,050		0.0000		
20.5	20,606		0.0000		
21.5	20,606		0.0000		
22.5	20,606		0.0000		
23.5	20,606		0.0000		
24.5	20,606		0.0000		
25.5	23,146		0.0000		
26.5	25,178		0.0000		
27.5	26,956	1,114	0.0413		
28.5	7,906	778	0.0984		
29.5	6,350		0.0000		
30.5	6,350		0.0000		
31.5	6,350		0.0000		
32.5	6,350		0.0000		
33.5	6,350		0.0000		
34.5	3,810		0.0000		
35.5	1,778		0.0000		
36.5	10,447		0.0000		
37.5	10,447		0.0000		
38.5	10,447		0.0000		

SUEZ WATER RHODE ISLAND
ACCOUNT 309 SUPPLY MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1950-2014			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	10,447		0.0000		
40.5	10,447		0.0000		
41.5	17,604		0.0000		
42.5	17,604		0.0000		
43.5	17,604		0.0000		
44.5	17,604	5,779	0.3283		
45.5	7,157		0.0000		
46.5	7,157		0.0000		
47.5	7,157		0.0000		
48.5	7,157		0.0000		
49.5	7,157		0.0000		
50.5					
51.5					
52.5					
53.5					
54.5					
55.5					
56.5					
57.5	3,067		0.0000		
58.5	3,067		0.0000		
59.5	3,067		0.0000		
60.5	3,067		0.0000		
61.5	3,067		0.0000		
62.5	3,067		0.0000		
63.5	3,067		0.0000		
64.5	3,067		0.0000		
65.5	3,067		0.0000		
66.5					



SUEZ WATER RHODE ISLAND
ACCOUNT 311 PUMPING EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNT 311 PUMPING EQUIPMENT

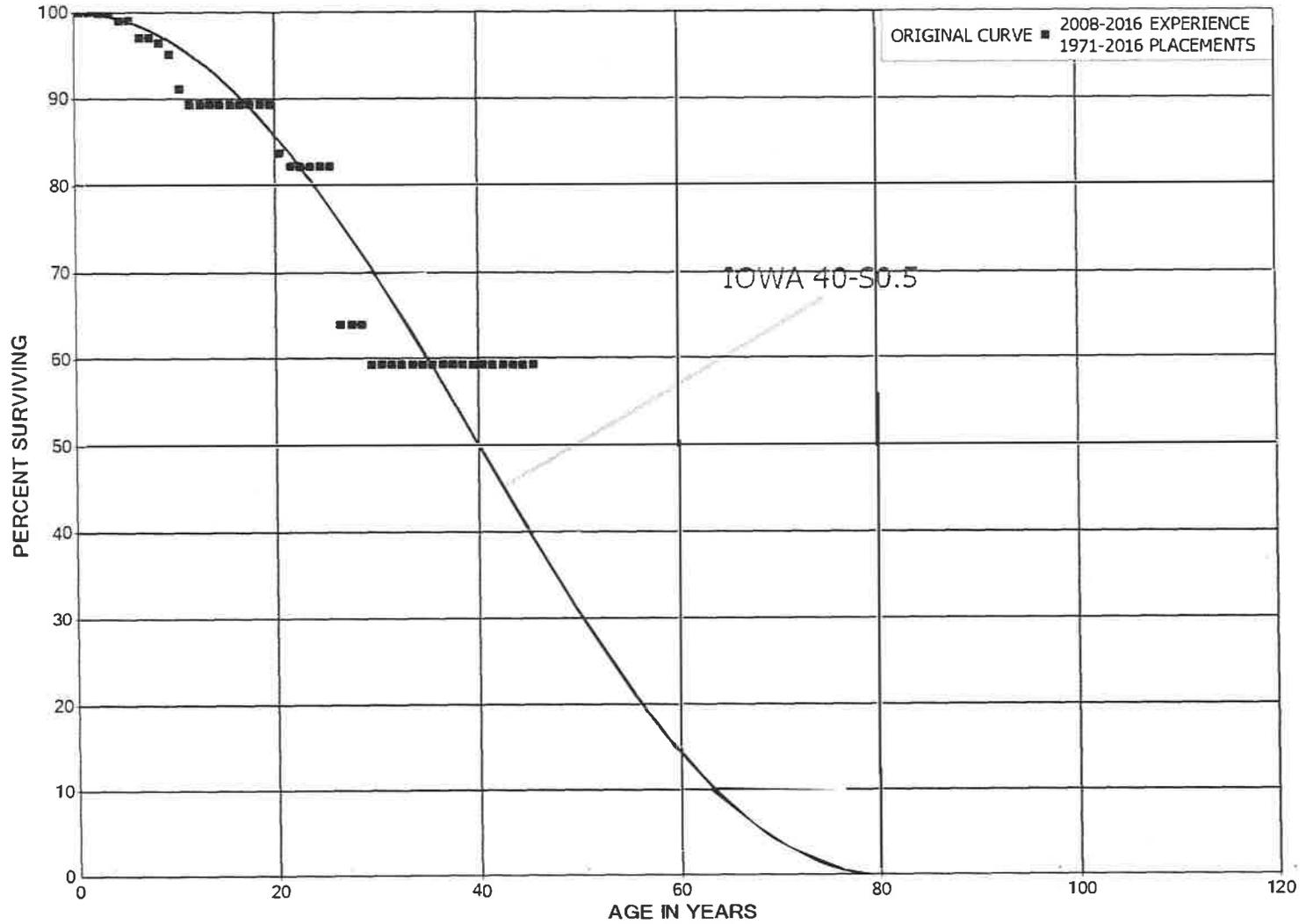
ORIGINAL LIFE TABLE

PLACEMENT BAND 1942-2015			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	253,047		0.0000	1.0000	100.00
0.5	253,047		0.0000	1.0000	100.00
1.5	108,701		0.0000	1.0000	100.00
2.5	98,241		0.0000	1.0000	100.00
3.5	79,720		0.0000	1.0000	100.00
4.5	125,526		0.0000	1.0000	100.00
5.5	225,741		0.0000	1.0000	100.00
6.5	262,716		0.0000	1.0000	100.00
7.5	237,849		0.0000	1.0000	100.00
8.5	237,849		0.0000	1.0000	100.00
9.5	890,888		0.0000	1.0000	100.00
10.5	868,184		0.0000	1.0000	100.00
11.5	999,372		0.0000	1.0000	100.00
12.5	999,372	4,250	0.0043	0.9957	100.00
13.5	953,630		0.0000	1.0000	99.57
14.5	848,671	10,307	0.0121	0.9879	99.57
15.5	801,388		0.0000	1.0000	98.37
16.5	801,388		0.0000	1.0000	98.37
17.5	888,518		0.0000	1.0000	98.37
18.5	235,479		0.0000	1.0000	98.37
19.5	272,843		0.0000	1.0000	98.37
20.5	141,655		0.0000	1.0000	98.37
21.5	141,655	8,000	0.0565	0.9435	98.37
22.5	144,726		0.0000	1.0000	92.81
23.5	144,726		0.0000	1.0000	92.81
24.5	144,726		0.0000	1.0000	92.81
25.5	146,133		0.0000	1.0000	92.81
26.5	67,347	563	0.0084	0.9916	92.81
27.5	92,332	3,680	0.0399	0.9601	92.03
28.5	55,531		0.0000	1.0000	88.37
29.5	59,940		0.0000	1.0000	88.37
30.5	59,940	2,839	0.0474	0.9526	88.37
31.5	84,922		0.0000	1.0000	84.18
32.5	84,922		0.0000	1.0000	84.18
33.5	84,922	344	0.0041	0.9959	84.18
34.5	83,171		0.0000	1.0000	83.84
35.5	83,171	1,000	0.0120	0.9880	83.84
36.5	99,243		0.0000	1.0000	82.83
37.5	99,243	8,183	0.0825	0.9175	82.83
38.5	86,651		0.0000	1.0000	76.00

SUEZ WATER RHODE ISLAND
ACCOUNT 311 PUMPING EQUIPMENT
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1942-2015			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	89,596	3,100	0.0346	0.9654	76.00
40.5	44,566		0.0000	1.0000	73.37
41.5	84,486		0.0000	1.0000	73.37
42.5	84,486	7,197	0.0852	0.9148	73.37
43.5	77,289		0.0000	1.0000	67.12
44.5	77,289	25,152	0.3254	0.6746	67.12
45.5	42,865		0.0000	1.0000	45.28
46.5	42,865	0	0.0000	1.0000	45.28
47.5	42,865	2,681	0.0626	0.9374	45.28
48.5	39,920	5,469	0.1370	0.8630	42.45
49.5	34,452	4,252	0.1234	0.8766	36.63
50.5					32.11
51.5					
52.5					
53.5					
54.5					
55.5					
56.5					
57.5	8,136		0.0000		
58.5	16,121		0.0000		
59.5	16,121		0.0000		
60.5	16,121		0.0000		
61.5	16,121		0.0000		
62.5	16,121	6,148	0.3813		
63.5	9,974	2,186	0.2192		
64.5	7,787		0.0000		
65.5	27,060	1,205	0.0445		
66.5	25,072	2,236	0.0892		
67.5	19,273		0.0000		
68.5	19,273		0.0000		
69.5	19,273		0.0000		
70.5	19,273	2,445	0.1268		
71.5	16,828		0.0000		
72.5	16,828		0.0000		
73.5	16,828	14,742	0.8760		
74.5					

SUEZ WATER RHODE ISLAND
 ACCOUNT 320 WATER TREATMENT EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNT 320 WATER TREATMENT EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1971-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	250,287		0.0000	1.0000	100.00
0.5	266,404		0.0000	1.0000	100.00
1.5	262,788	419	0.0016	0.9984	100.00
2.5	184,635		0.0000	1.0000	99.84
3.5	163,854	1,507	0.0092	0.9908	99.84
4.5	159,899		0.0000	1.0000	98.92
5.5	152,950	3,080	0.0201	0.9799	98.92
6.5	158,019		0.0000	1.0000	96.93
7.5	145,467	750	0.0052	0.9948	96.93
8.5	167,407	2,419	0.0144	0.9856	96.43
9.5	212,222	8,867	0.0418	0.9582	95.04
10.5	191,199	3,660	0.0191	0.9809	91.07
11.5	187,539		0.0000	1.0000	89.32
12.5	207,627		0.0000	1.0000	89.32
13.5	210,627		0.0000	1.0000	89.32
14.5	208,254		0.0000	1.0000	89.32
15.5	200,105		0.0000	1.0000	89.32
16.5	200,105		0.0000	1.0000	89.32
17.5	119,005		0.0000	1.0000	89.32
18.5	48,198		0.0000	1.0000	89.32
19.5	48,198	3,000	0.0622	0.9378	89.32
20.5	66,123	1,224	0.0185	0.9815	83.76
21.5	46,035		0.0000	1.0000	82.21
22.5	46,035		0.0000	1.0000	82.21
23.5	46,035		0.0000	1.0000	82.21
24.5	46,035		0.0000	1.0000	82.21
25.5	46,035	10,213	0.2218	0.7782	82.21
26.5	23,969		0.0000	1.0000	63.97
27.5	34,306		0.0000	1.0000	63.97
28.5	34,306	2,500	0.0729	0.9271	63.97
29.5	10,881		0.0000	1.0000	59.31
30.5	10,881		0.0000	1.0000	59.31
31.5	10,881		0.0000	1.0000	59.31
32.5	10,881		0.0000	1.0000	59.31
33.5	10,881		0.0000	1.0000	59.31
34.5	10,881		0.0000	1.0000	59.31
35.5	7,837		0.0000	1.0000	59.31
36.5	6,696		0.0000	1.0000	59.31
37.5	6,696		0.0000	1.0000	59.31
38.5	6,696		0.0000	1.0000	59.31

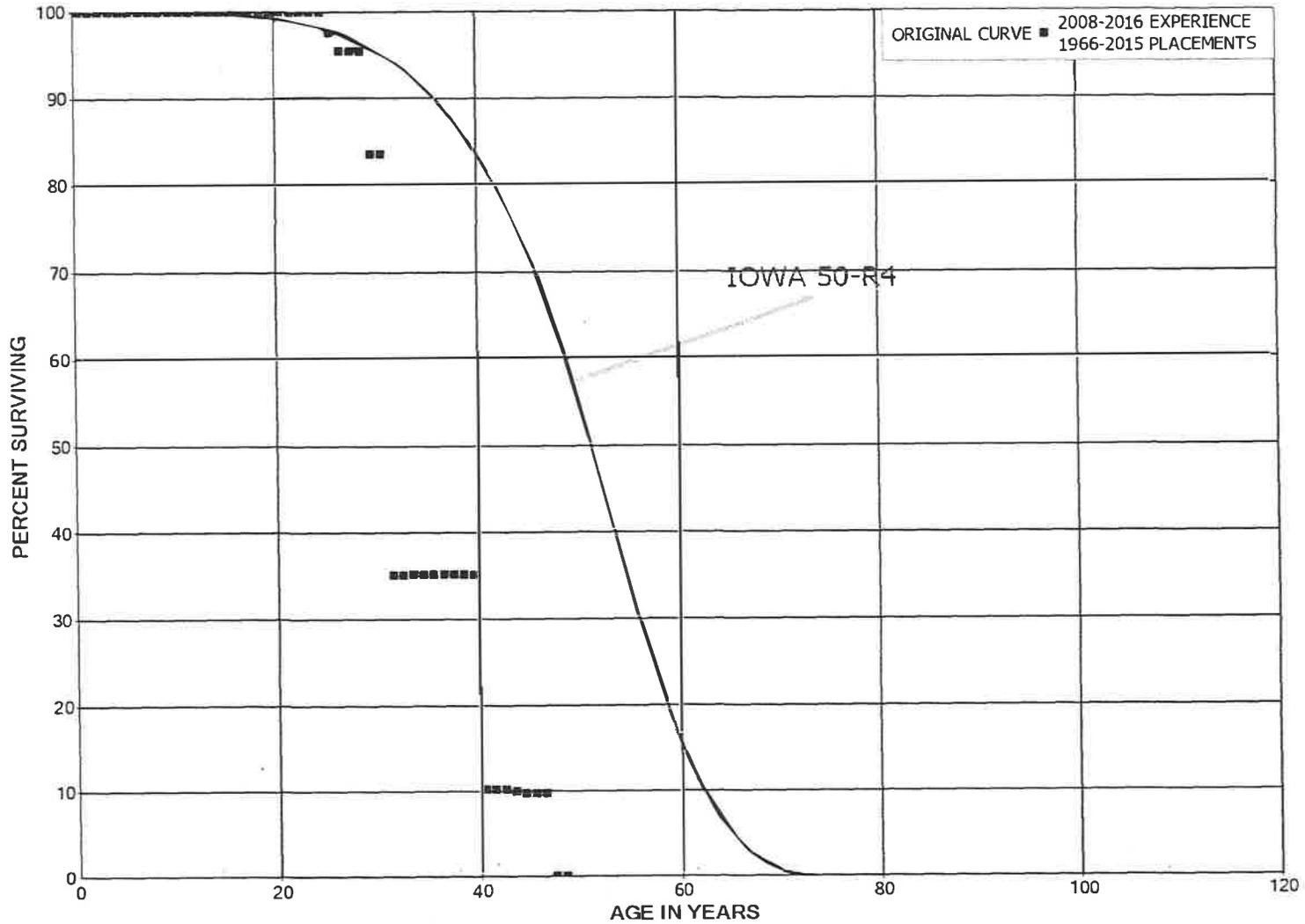
SUEZ WATER RHODE ISLAND

ACCOUNT 320 WATER TREATMENT EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1971-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	6,696		0.0000	1.0000	59.31
40.5	6,696		0.0000	1.0000	59.31
41.5	6,696		0.0000	1.0000	59.31
42.5	6,696		0.0000	1.0000	59.31
43.5	6,696		0.0000	1.0000	59.31
44.5	6,696		0.0000	1.0000	59.31
45.5					59.31

SUEZ WATER RHODE ISLAND
ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1966-2015			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	3,518,294		0.0000	1.0000	100.00
0.5	3,562,933		0.0000	1.0000	100.00
1.5	3,560,650		0.0000	1.0000	100.00
2.5	3,522,991		0.0000	1.0000	100.00
3.5	151,586		0.0000	1.0000	100.00
4.5	44,639		0.0000	1.0000	100.00
5.5	44,639		0.0000	1.0000	100.00
6.5	44,639		0.0000	1.0000	100.00
7.5	44,639		0.0000	1.0000	100.00
8.5	44,639		0.0000	1.0000	100.00
9.5	476,732		0.0000	1.0000	100.00
10.5	607,052		0.0000	1.0000	100.00
11.5	607,052		0.0000	1.0000	100.00
12.5	607,052		0.0000	1.0000	100.00
13.5	607,052		0.0000	1.0000	100.00
14.5	607,052		0.0000	1.0000	100.00
15.5	607,052		0.0000	1.0000	100.00
16.5	607,052		0.0000	1.0000	100.00
17.5	617,846		0.0000	1.0000	100.00
18.5	141,114		0.0000	1.0000	100.00
19.5	157,710		0.0000	1.0000	100.00
20.5	161,568		0.0000	1.0000	100.00
21.5	161,568		0.0000	1.0000	100.00
22.5	161,568		0.0000	1.0000	100.00
23.5	161,568		0.0000	1.0000	100.00
24.5	161,568	3,964	0.0245	0.9755	100.00
25.5	157,604	3,415	0.0217	0.9783	97.55
26.5	150,774		0.0000	1.0000	95.43
27.5	165,408		0.0000	1.0000	95.43
28.5	18,492	2,315	0.1252	0.8748	95.43
29.5	14,634		0.0000	1.0000	83.49
30.5	14,634	8,485	0.5798	0.4202	83.49
31.5	6,149		0.0000	1.0000	35.08
32.5	6,149		0.0000	1.0000	35.08
33.5	6,149		0.0000	1.0000	35.08
34.5	6,149		0.0000	1.0000	35.08
35.5	44,089		0.0000	1.0000	35.08
36.5	37,940		0.0000	1.0000	35.08
37.5	37,940		0.0000	1.0000	35.08
38.5	37,940		0.0000	1.0000	35.08

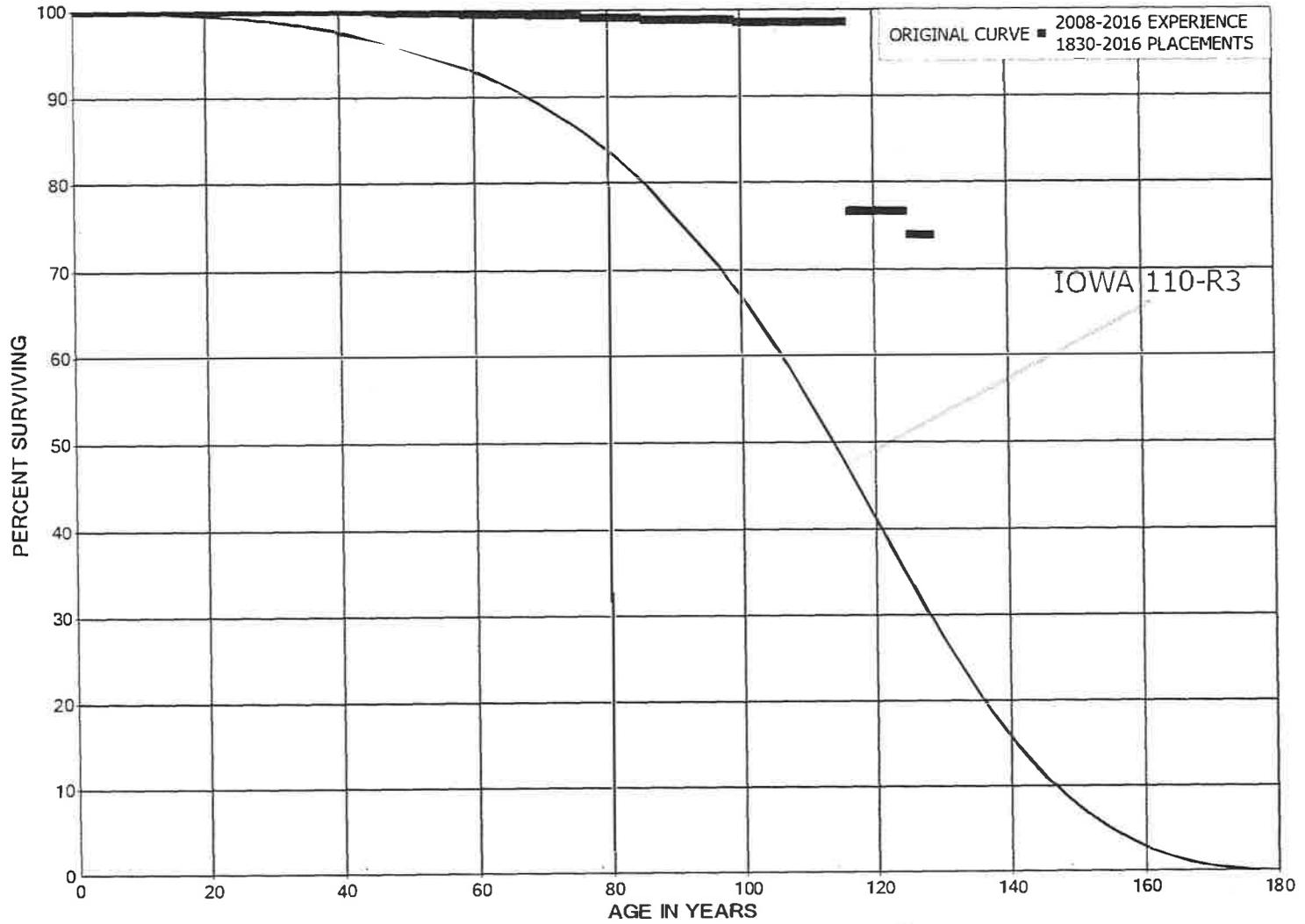
SUEZ WATER RHODE ISLAND

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1966-2015			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	38,818	27,535	0.7093	0.2907	35.08
40.5	11,283		0.0000	1.0000	10.20
41.5	114,088		0.0000	1.0000	10.20
42.5	114,088	3,197	0.0280	0.9720	10.20
43.5	110,891	1,742	0.0157	0.9843	9.91
44.5	102,183		0.0000	1.0000	9.75
45.5	102,183		0.0000	1.0000	9.75
46.5	102,183	101,605	0.9943	0.0057	9.75
47.5	578		0.0000	1.0000	0.06
48.5					0.06

SUEZ WATER RHODE ISLAND
ACCOUNT 331 MAINS
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNT 331 MAINS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1830-2016

EXPERIENCE BAND 2008-2016

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	4,450,746		0.0000	1.0000	100.00
0.5	4,545,365		0.0000	1.0000	100.00
1.5	5,556,233		0.0000	1.0000	100.00
2.5	4,895,030		0.0000	1.0000	100.00
3.5	3,152,832		0.0000	1.0000	100.00
4.5	3,151,989		0.0000	1.0000	100.00
5.5	2,911,582		0.0000	1.0000	100.00
6.5	3,004,442		0.0000	1.0000	100.00
7.5	3,068,819		0.0000	1.0000	100.00
8.5	2,570,503		0.0000	1.0000	100.00
9.5	2,363,494		0.0000	1.0000	100.00
10.5	1,051,203		0.0000	1.0000	100.00
11.5	1,261,627		0.0000	1.0000	100.00
12.5	1,216,767		0.0000	1.0000	100.00
13.5	1,078,745		0.0000	1.0000	100.00
14.5	903,938		0.0000	1.0000	100.00
15.5	705,651		0.0000	1.0000	100.00
16.5	629,293		0.0000	1.0000	100.00
17.5	622,707		0.0000	1.0000	100.00
18.5	652,742		0.0000	1.0000	100.00
19.5	741,944		0.0000	1.0000	100.00
20.5	519,455		0.0000	1.0000	100.00
21.5	577,926		0.0000	1.0000	100.00
22.5	696,367		0.0000	1.0000	100.00
23.5	726,652		0.0000	1.0000	100.00
24.5	833,399		0.0000	1.0000	100.00
25.5	783,024		0.0000	1.0000	100.00
26.5	1,047,792		0.0000	1.0000	100.00
27.5	1,004,434		0.0000	1.0000	100.00
28.5	765,003		0.0000	1.0000	100.00
29.5	805,902		0.0000	1.0000	100.00
30.5	747,431		0.0000	1.0000	100.00
31.5	642,933		0.0000	1.0000	100.00
32.5	612,648		0.0000	1.0000	100.00
33.5	601,638		0.0000	1.0000	100.00
34.5	765,267		0.0000	1.0000	100.00
35.5	761,362		0.0000	1.0000	100.00
36.5	902,279		0.0000	1.0000	100.00
37.5	930,897		0.0000	1.0000	100.00
38.5	889,326	266	0.0003	0.9997	100.00

SUEZ WATER RHODE ISLAND

ACCOUNT 331 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1830-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	939,677		0.0000	1.0000	99.97
40.5	948,965		0.0000	1.0000	99.97
41.5	1,128,498		0.0000	1.0000	99.97
42.5	1,100,279		0.0000	1.0000	99.97
43.5	961,102		0.0000	1.0000	99.97
44.5	745,522	700	0.0009	0.9991	99.97
45.5	663,468		0.0000	1.0000	99.88
46.5	697,686	1,134	0.0016	0.9984	99.88
47.5	724,211		0.0000	1.0000	99.71
48.5	721,133		0.0000	1.0000	99.71
49.5	787,711		0.0000	1.0000	99.71
50.5	629,292	200	0.0003	0.9997	99.71
51.5	560,828		0.0000	1.0000	99.68
52.5	511,612		0.0000	1.0000	99.68
53.5	460,097		0.0000	1.0000	99.68
54.5	385,809		0.0000	1.0000	99.68
55.5	294,445		0.0000	1.0000	99.68
56.5	224,611		0.0000	1.0000	99.68
57.5	350,601	500	0.0014	0.9986	99.68
58.5	523,775	93	0.0002	0.9998	99.54
59.5	756,815	148	0.0002	0.9998	99.52
60.5	1,094,328		0.0000	1.0000	99.50
61.5	1,092,357		0.0000	1.0000	99.50
62.5	1,110,981		0.0000	1.0000	99.50
63.5	1,196,697		0.0000	1.0000	99.50
64.5	1,189,947		0.0000	1.0000	99.50
65.5	1,182,908		0.0000	1.0000	99.50
66.5	1,000,153		0.0000	1.0000	99.50
67.5	736,464	500	0.0007	0.9993	99.50
68.5	478,241		0.0000	1.0000	99.44
69.5	136,364		0.0000	1.0000	99.44
70.5	166,515		0.0000	1.0000	99.44
71.5	147,774		0.0000	1.0000	99.44
72.5	55,374		0.0000	1.0000	99.44
73.5	61,286		0.0000	1.0000	99.44
74.5	73,074		0.0000	1.0000	99.44
75.5	78,204	300	0.0038	0.9962	99.44
76.5	72,081		0.0000	1.0000	99.05
77.5	78,161		0.0000	1.0000	99.05
78.5	113,101		0.0000	1.0000	99.05

SUEZ WATER RHODE ISLAND

ACCOUNT 331 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1830-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	104,161		0.0000	1.0000	99.05
80.5	119,486		0.0000	1.0000	99.05
81.5	119,334		0.0000	1.0000	99.05
82.5	139,606	38	0.0003	0.9997	99.05
83.5	141,427		0.0000	1.0000	99.03
84.5	142,944	289	0.0020	0.9980	99.03
85.5	140,064	63	0.0004	0.9996	98.83
86.5	133,954		0.0000	1.0000	98.78
87.5	102,599		0.0000	1.0000	98.78
88.5	86,359		0.0000	1.0000	98.78
89.5	70,413		0.0000	1.0000	98.78
90.5	74,466		0.0000	1.0000	98.78
91.5	51,716		0.0000	1.0000	98.78
92.5	48,291		0.0000	1.0000	98.78
93.5	43,723		0.0000	1.0000	98.78
94.5	45,185		0.0000	1.0000	98.78
95.5	41,030		0.0000	1.0000	98.78
96.5	42,003		0.0000	1.0000	98.78
97.5	44,076		0.0000	1.0000	98.78
98.5	41,904	101	0.0024	0.9976	98.78
99.5	41,926		0.0000	1.0000	98.54
100.5	38,594	3	0.0001	0.9999	98.54
101.5	31,370		0.0000	1.0000	98.54
102.5	29,063	5	0.0002	0.9998	98.54
103.5	27,526		0.0000	1.0000	98.52
104.5	25,636		0.0000	1.0000	98.52
105.5	17,671		0.0000	1.0000	98.52
106.5	10,731		0.0000	1.0000	98.52
107.5	10,731		0.0000	1.0000	98.52
108.5	5,510		0.0000	1.0000	98.52
109.5	11,399		0.0000	1.0000	98.52
110.5	6,450		0.0000	1.0000	98.52
111.5	9,522		0.0000	1.0000	98.52
112.5	9,522		0.0000	1.0000	98.52
113.5	10,522		0.0000	1.0000	98.52
114.5	10,522		0.0000	1.0000	98.52
115.5	12,852	2,843	0.2212	0.7788	98.52
116.5	11,274		0.0000	1.0000	76.73
117.5	11,714		0.0000	1.0000	76.73
118.5	10,969		0.0000	1.0000	76.73

SUEZ WATER RHODE ISLAND
 ACCOUNT 331 MAINS
 ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1830-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
119.5	226,835		0.0000	1.0000	76.73
120.5	223,763		0.0000	1.0000	76.73
121.5	223,763		0.0000	1.0000	76.73
122.5	222,764		0.0000	1.0000	76.73
123.5	222,764		0.0000	1.0000	76.73
124.5	219,872	7,969	0.0362	0.9638	76.73
125.5	210,638		0.0000	1.0000	73.95
126.5	210,198		0.0000	1.0000	73.95
127.5	207,898		0.0000	1.0000	73.95
128.5					73.95
129.5					
130.5					
131.5					
132.5					
133.5					
134.5					
135.5					
136.5					
137.5					
138.5					
139.5					
140.5					
141.5					
142.5					
143.5					
144.5					
145.5					
146.5					
147.5					
148.5					
149.5					
150.5					
151.5					
152.5					
153.5					
154.5					
155.5					
156.5					
157.5					
158.5					

SUEZ WATER RHODE ISLAND

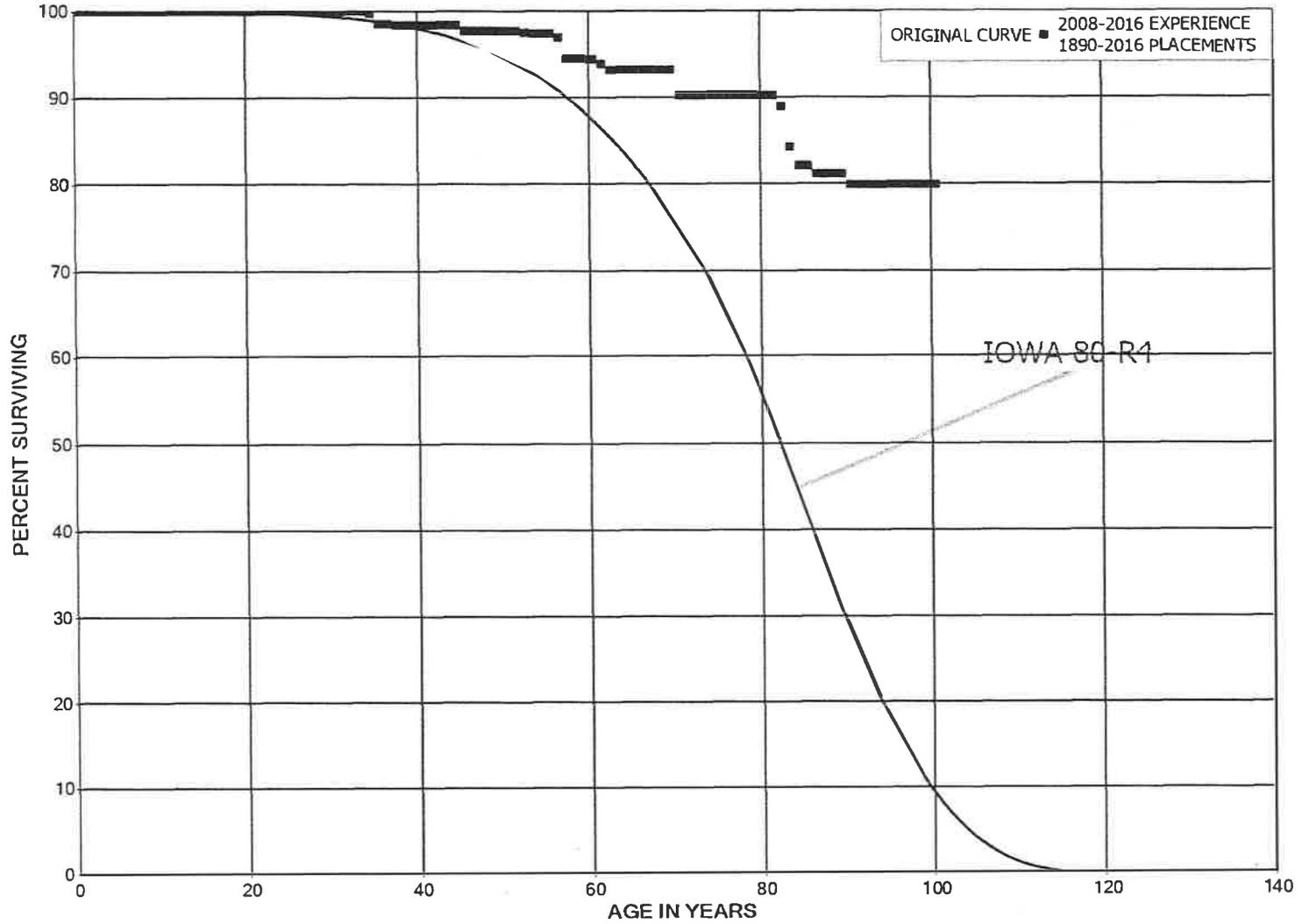
ACCOUNT 331 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1830-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
159.5					
160.5					
161.5					
162.5					
163.5					
164.5					
165.5					
166.5					
167.5					
168.5					
169.5					
170.5					
171.5					
172.5					
173.5					
174.5					
175.5					
176.5					
177.5	1,830		0.0000		
178.5	1,830		0.0000		
179.5	1,830		0.0000		
180.5	1,830		0.0000		
181.5	1,830		0.0000		
182.5	1,830		0.0000		
183.5	1,830		0.0000		
184.5	1,830		0.0000		
185.5	1,830		0.0000		
186.5					



SUEZ WATER RHODE ISLAND
ACCOUNT 333 SERVICES
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1890-2016

EXPERIENCE BAND 2008-2016

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,344,123		0.0000	1.0000	100.00
0.5	1,234,958		0.0000	1.0000	100.00
1.5	1,253,793		0.0000	1.0000	100.00
2.5	1,163,486		0.0000	1.0000	100.00
3.5	1,088,760		0.0000	1.0000	100.00
4.5	1,102,667		0.0000	1.0000	100.00
5.5	1,156,125		0.0000	1.0000	100.00
6.5	1,153,769		0.0000	1.0000	100.00
7.5	1,193,837	100	0.0001	0.9999	100.00
8.5	1,129,173		0.0000	1.0000	99.99
9.5	973,372		0.0000	1.0000	99.99
10.5	886,697		0.0000	1.0000	99.99
11.5	939,001		0.0000	1.0000	99.99
12.5	852,953	150	0.0002	0.9998	99.99
13.5	727,531		0.0000	1.0000	99.97
14.5	553,354	300	0.0005	0.9995	99.97
15.5	469,727		0.0000	1.0000	99.92
16.5	400,128		0.0000	1.0000	99.92
17.5	339,208		0.0000	1.0000	99.92
18.5	334,517		0.0000	1.0000	99.92
19.5	468,974		0.0000	1.0000	99.92
20.5	310,044		0.0000	1.0000	99.92
21.5	351,811		0.0000	1.0000	99.92
22.5	436,417		0.0000	1.0000	99.92
23.5	458,051		0.0000	1.0000	99.92
24.5	534,303		0.0000	1.0000	99.92
25.5	498,319		0.0000	1.0000	99.92
26.5	691,501		0.0000	1.0000	99.92
27.5	660,529		0.0000	1.0000	99.92
28.5	489,496		0.0000	1.0000	99.92
29.5	518,712		0.0000	1.0000	99.92
30.5	476,944		0.0000	1.0000	99.92
31.5	402,298		0.0000	1.0000	99.92
32.5	380,665		0.0000	1.0000	99.92
33.5	317,745	625	0.0020	0.9980	99.92
34.5	325,808	4,050	0.0124	0.9876	99.72
35.5	143,887		0.0000	1.0000	98.48
36.5	148,462	75	0.0005	0.9995	98.48
37.5	136,604		0.0000	1.0000	98.43
38.5	85,442		0.0000	1.0000	98.43

SUEZ WATER RHODE ISLAND

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1890-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	93,959		0.0000	1.0000	98.43
40.5	91,301		0.0000	1.0000	98.43
41.5	100,068		0.0000	1.0000	98.43
42.5	94,827		0.0000	1.0000	98.43
43.5	79,878		0.0000	1.0000	98.43
44.5	80,347	550	0.0068	0.9932	98.43
45.5	73,690		0.0000	1.0000	97.76
46.5	74,560		0.0000	1.0000	97.76
47.5	74,972		0.0000	1.0000	97.76
48.5	71,522	50	0.0007	0.9993	97.76
49.5	69,348		0.0000	1.0000	97.69
50.5	62,773		0.0000	1.0000	97.69
51.5	58,716	100	0.0017	0.9983	97.69
52.5	53,915	100	0.0019	0.9981	97.53
53.5	44,793		0.0000	1.0000	97.34
54.5	39,721		0.0000	1.0000	97.34
55.5	35,570	125	0.0035	0.9965	97.34
56.5	28,381	750	0.0264	0.9736	97.00
57.5	32,861		0.0000	1.0000	94.44
58.5	32,737		0.0000	1.0000	94.44
59.5	33,241		0.0000	1.0000	94.44
60.5	32,766	200	0.0061	0.9939	94.44
61.5	32,206	250	0.0078	0.9922	93.86
62.5	29,598		0.0000	1.0000	93.13
63.5	27,320		0.0000	1.0000	93.13
64.5	24,389		0.0000	1.0000	93.13
65.5	21,947		0.0000	1.0000	93.13
66.5	12,923		0.0000	1.0000	93.13
67.5	8,386		0.0000	1.0000	93.13
68.5	6,576		0.0000	1.0000	93.13
69.5	3,963	125	0.0315	0.9685	93.13
70.5	3,475		0.0000	1.0000	90.20
71.5	3,871		0.0000	1.0000	90.20
72.5	3,692		0.0000	1.0000	90.20
73.5	3,743		0.0000	1.0000	90.20
74.5	4,273		0.0000	1.0000	90.20
75.5	4,406		0.0000	1.0000	90.20
76.5	4,998		0.0000	1.0000	90.20
77.5	5,190		0.0000	1.0000	90.20
78.5	6,318		0.0000	1.0000	90.20

SUEZ WATER RHODE ISLAND

ACCOUNT 333 SERVICES

ORIGINAL LIFE TABLE, CONT.

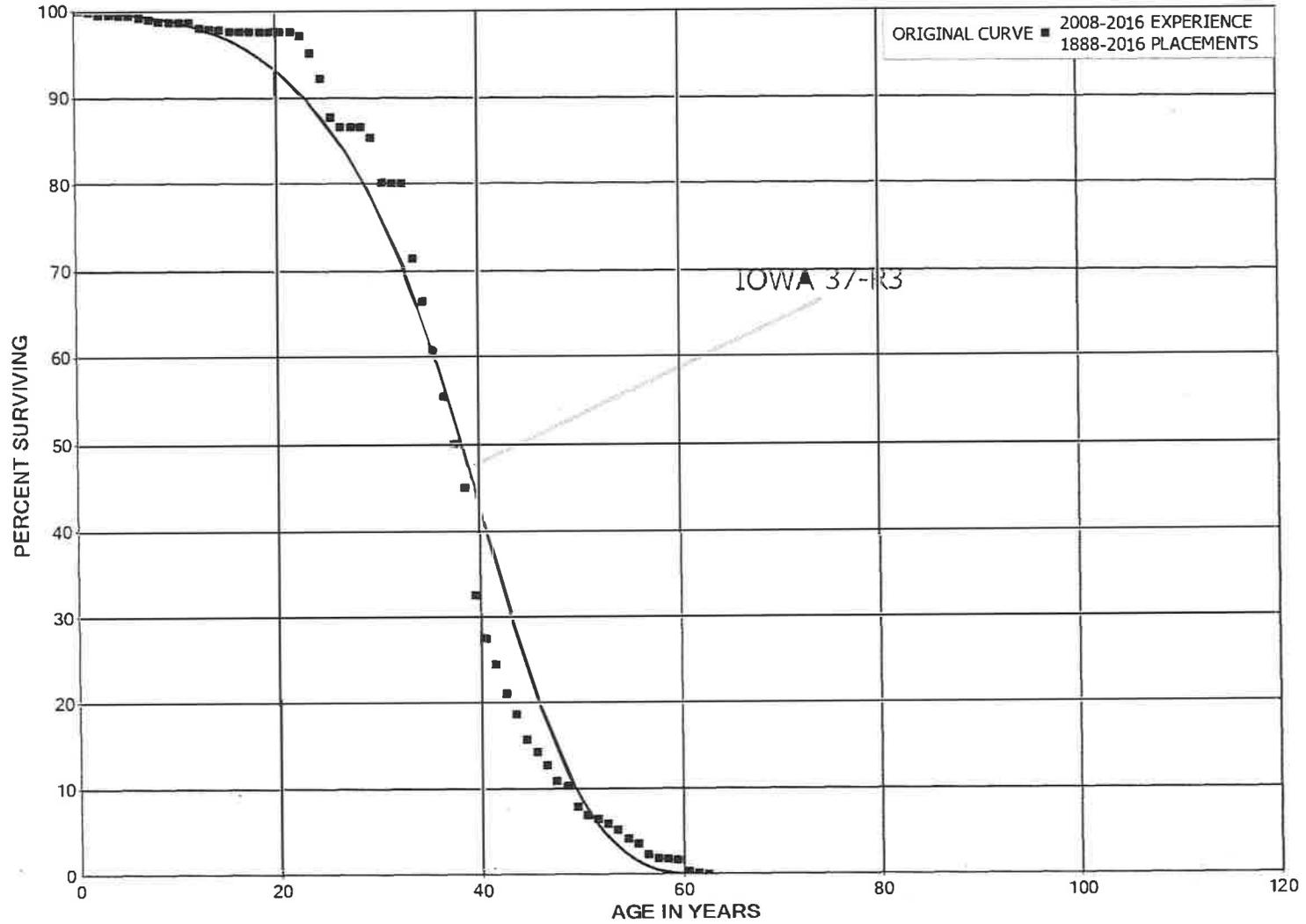
PLACEMENT BAND 1890-2016

EXPERIENCE BAND 2008-2016

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	7,130		0.0000	1.0000	90.20
80.5	9,069		0.0000	1.0000	90.20
81.5	9,651	150	0.0155	0.9845	90.20
82.5	10,727	549	0.0512	0.9488	88.79
83.5	11,718	300	0.0256	0.9744	84.25
84.5	11,746		0.0000	1.0000	82.09
85.5	11,223	130	0.0116	0.9884	82.09
86.5	11,043		0.0000	1.0000	81.14
87.5	10,576		0.0000	1.0000	81.14
88.5	9,305		0.0000	1.0000	81.14
89.5	6,742	100	0.0148	0.9852	81.14
90.5	6,263		0.0000	1.0000	79.94
91.5	5,419		0.0000	1.0000	79.94
92.5	4,179		0.0000	1.0000	79.94
93.5	3,197		0.0000	1.0000	79.94
94.5	2,709		0.0000	1.0000	79.94
95.5	1,982		0.0000	1.0000	79.94
96.5	1,403		0.0000	1.0000	79.94
97.5	1,072		0.0000	1.0000	79.94
98.5	951		0.0000	1.0000	79.94
99.5	683		0.0000	1.0000	79.94
100.5					79.94
101.5					
102.5					
103.5					
104.5					
105.5					
106.5					
107.5	50		0.0000		
108.5	50		0.0000		
109.5	50	50	1.0000		
110.5					
111.5					
112.5					
113.5					
114.5					
115.5					
116.5					
117.5	50		0.0000		
118.5	50		0.0000		
119.5	50	50	1.0000		
120.5					



SUEZ WATER RHODE ISLAND
ACCOUNT 334 METER AND METER INSTALLATIONS
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNT 334 METER AND METER INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1888-2016

EXPERIENCE BAND 2008-2016

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,439,174	416	0.0003	0.9997	100.00
0.5	1,458,181	2,160	0.0015	0.9985	99.97
1.5	1,351,050	3,704	0.0027	0.9973	99.82
2.5	1,335,984	396	0.0003	0.9997	99.55
3.5	1,371,422	1,536	0.0011	0.9989	99.52
4.5	1,268,119	766	0.0006	0.9994	99.41
5.5	1,233,659	1,965	0.0016	0.9984	99.35
6.5	1,169,627	3,420	0.0029	0.9971	99.19
7.5	1,166,832	2,430	0.0021	0.9979	98.90
8.5	880,892	1,075	0.0012	0.9988	98.69
9.5	695,473	20	0.0000	1.0000	98.57
10.5	617,332	20	0.0000	1.0000	98.57
11.5	577,184	3,312	0.0057	0.9943	98.57
12.5	497,916	618	0.0012	0.9988	98.00
13.5	495,379	1,025	0.0021	0.9979	97.88
14.5	506,529	990	0.0020	0.9980	97.68
15.5	513,451		0.0000	1.0000	97.49
16.5	484,256		0.0000	1.0000	97.49
17.5	480,514		0.0000	1.0000	97.49
18.5	487,582	140	0.0003	0.9997	97.49
19.5	484,988		0.0000	1.0000	97.46
20.5	417,008		0.0000	1.0000	97.46
21.5	382,600	1,389	0.0036	0.9964	97.46
22.5	351,582	7,392	0.0210	0.9790	97.10
23.5	294,721	8,842	0.0300	0.9700	95.06
24.5	252,488	12,404	0.0491	0.9509	92.21
25.5	202,632	2,437	0.0120	0.9880	87.68
26.5	193,627		0.0000	1.0000	86.63
27.5	185,855	114	0.0006	0.9994	86.63
28.5	176,967	2,380	0.0134	0.9866	86.57
29.5	170,421	10,506	0.0616	0.9384	85.41
30.5	149,139	60	0.0004	0.9996	80.14
31.5	144,792	80	0.0006	0.9994	80.11
32.5	166,560	17,993	0.1080	0.8920	80.07
33.5	139,650	9,698	0.0694	0.9306	71.42
34.5	125,118	10,494	0.0839	0.9161	66.46
35.5	108,139	9,512	0.0880	0.9120	60.88
36.5	94,745	9,299	0.0981	0.9019	55.53
37.5	81,453	8,412	0.1033	0.8967	50.08
38.5	70,445	19,371	0.2750	0.7250	44.91

SUEZ WATER RHODE ISLAND

ACCOUNT 334 METER AND METER INSTALLATIONS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1888-2016			EXPERIENCE BAND 2008-2016			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL	
39.5	50,834	7,910	0.1556	0.8444	32.56	
40.5	39,536	4,281	0.1083	0.8917	27.49	
41.5	38,248	5,360	0.1401	0.8599	24.52	
42.5	38,250	4,489	0.1174	0.8826	21.08	
43.5	36,302	5,623	0.1549	0.8451	18.61	
44.5	33,830	2,978	0.0880	0.9120	15.72	
45.5	35,056	3,893	0.1111	0.8889	14.34	
46.5	35,264	5,285	0.1499	0.8501	12.75	
47.5	34,681	1,659	0.0478	0.9522	10.84	
48.5	37,484	8,981	0.2396	0.7604	10.32	
49.5	41,049	5,362	0.1306	0.8694	7.85	
50.5	36,365	2,541	0.0699	0.9301	6.82	
51.5	35,199	3,131	0.0890	0.9110	6.34	
52.5	32,749	4,204	0.1284	0.8716	5.78	
53.5	39,106	7,784	0.1991	0.8009	5.04	
54.5	33,572	4,253	0.1267	0.8733	4.04	
55.5	29,319	10,098	0.3444	0.6556	3.52	
56.5	19,220	3,754	0.1953	0.8047	2.31	
57.5	15,466	1,453	0.0940	0.9060	1.86	
58.5	14,013	582	0.0415	0.9585	1.68	
59.5	13,431	11,036	0.8217	0.1783	1.61	
60.5	2,395	2,297	0.9592	0.0408	0.29	
61.5	98	98	1.0000		0.01	
62.5	13,376		0.0000	1.0000		
63.5	13,376		0.0000			
64.5	13,376		0.0000			
65.5	13,376		0.0000			
66.5	13,376		0.0000			
67.5	13,376		0.0000			
68.5	13,376	13,376	1.0000			
69.5						
70.5	2,927		0.0000			
71.5	2,927		0.0000			
72.5	2,927		0.0000			
73.5	2,927		0.0000			
74.5	2,927		0.0000			
75.5	2,927		0.0000			
76.5	2,927	2,927	1.0000			
77.5						
78.5						

SUEZ WATER RHODE ISLAND

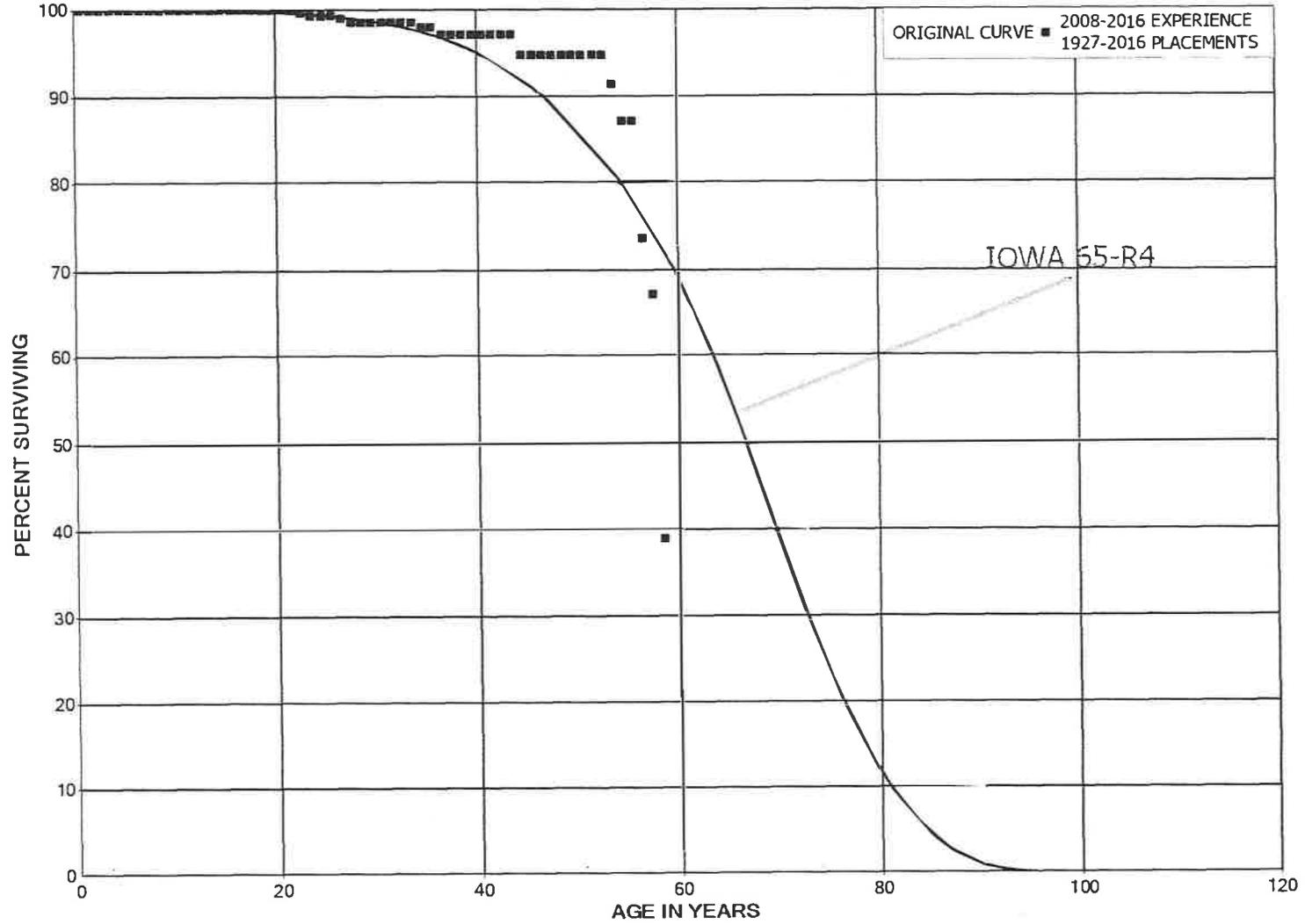
ACCOUNT 334 METER AND METER INSTALLATIONS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1888-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5	5,233		0.0000		
80.5	5,233		0.0000		
81.5	5,233		0.0000		
82.5	5,233		0.0000		
83.5	5,233		0.0000		
84.5	5,233		0.0000		
85.5	5,233	5,233	1.0000		
86.5					
87.5					
88.5					
89.5					
90.5					
91.5					
92.5					
93.5					
94.5					
95.5					
96.5					
97.5	782		0.0000		
98.5	782		0.0000		
99.5	782		0.0000		
100.5	782		0.0000		
101.5	782		0.0000		
102.5	782		0.0000		
103.5	782	782	1.0000		
104.5					



SUEZ WATER RHODE ISLAND
ACCOUNT 335 HYDRANTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNT 335 HYDRANTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1927-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	327,459		0.0000	1.0000	100.00
0.5	325,687		0.0000	1.0000	100.00
1.5	258,437		0.0000	1.0000	100.00
2.5	254,893		0.0000	1.0000	100.00
3.5	214,729		0.0000	1.0000	100.00
4.5	188,701		0.0000	1.0000	100.00
5.5	191,689		0.0000	1.0000	100.00
6.5	190,635		0.0000	1.0000	100.00
7.5	181,236		0.0000	1.0000	100.00
8.5	173,317		0.0000	1.0000	100.00
9.5	149,830		0.0000	1.0000	100.00
10.5	149,154		0.0000	1.0000	100.00
11.5	142,377		0.0000	1.0000	100.00
12.5	143,698		0.0000	1.0000	100.00
13.5	134,045		0.0000	1.0000	100.00
14.5	112,352		0.0000	1.0000	100.00
15.5	99,444		0.0000	1.0000	100.00
16.5	111,234		0.0000	1.0000	100.00
17.5	130,186		0.0000	1.0000	100.00
18.5	135,476		0.0000	1.0000	100.00
19.5	161,809		0.0000	1.0000	100.00
20.5	153,547		0.0000	1.0000	100.00
21.5	183,554	785	0.0043	0.9957	100.00
22.5	244,921	800	0.0033	0.9967	99.57
23.5	286,826		0.0000	1.0000	99.25
24.5	302,878		0.0000	1.0000	99.25
25.5	306,499	780	0.0025	0.9975	99.25
26.5	300,253	1,434	0.0048	0.9952	98.99
27.5	307,585		0.0000	1.0000	98.52
28.5	275,796		0.0000	1.0000	98.52
29.5	280,158		0.0000	1.0000	98.52
30.5	256,290		0.0000	1.0000	98.52
31.5	187,594		0.0000	1.0000	98.52
32.5	142,782		0.0000	1.0000	98.52
33.5	119,461	740	0.0062	0.9938	98.52
34.5	100,350		0.0000	1.0000	97.91
35.5	84,490	740	0.0088	0.9912	97.91
36.5	69,201		0.0000	1.0000	97.05
37.5	64,736		0.0000	1.0000	97.05
38.5	44,420		0.0000	1.0000	97.05

SUEZ WATER RHODE ISLAND

ACCOUNT 335 HYDRANTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1927-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5	30,662		0.0000	1.0000	97.05
40.5	31,931		0.0000	1.0000	97.05
41.5	32,389		0.0000	1.0000	97.05
42.5	38,120		0.0000	1.0000	97.05
43.5	31,749	750	0.0236	0.9764	97.05
44.5	27,670		0.0000	1.0000	94.76
45.5	30,233		0.0000	1.0000	94.76
46.5	34,886		0.0000	1.0000	94.76
47.5	34,655		0.0000	1.0000	94.76
48.5	33,711		0.0000	1.0000	94.76
49.5	34,097		0.0000	1.0000	94.76
50.5	29,896		0.0000	1.0000	94.76
51.5	26,565		0.0000	1.0000	94.76
52.5	23,326	851	0.0365	0.9635	94.76
53.5	21,560	1,000	0.0464	0.9536	91.30
54.5	16,516		0.0000	1.0000	87.07
55.5	10,656	1,649	0.1547	0.8453	87.07
56.5	5,763	500	0.0868	0.9132	73.60
57.5	3,446	1,446	0.4197	0.5803	67.21
58.5					39.00
59.5					
60.5					
61.5					
62.5					
63.5					
64.5					
65.5					
66.5					
67.5					
68.5					
69.5					
70.5					
71.5					
72.5					
73.5					
74.5					
75.5					
76.5					
77.5					
78.5					

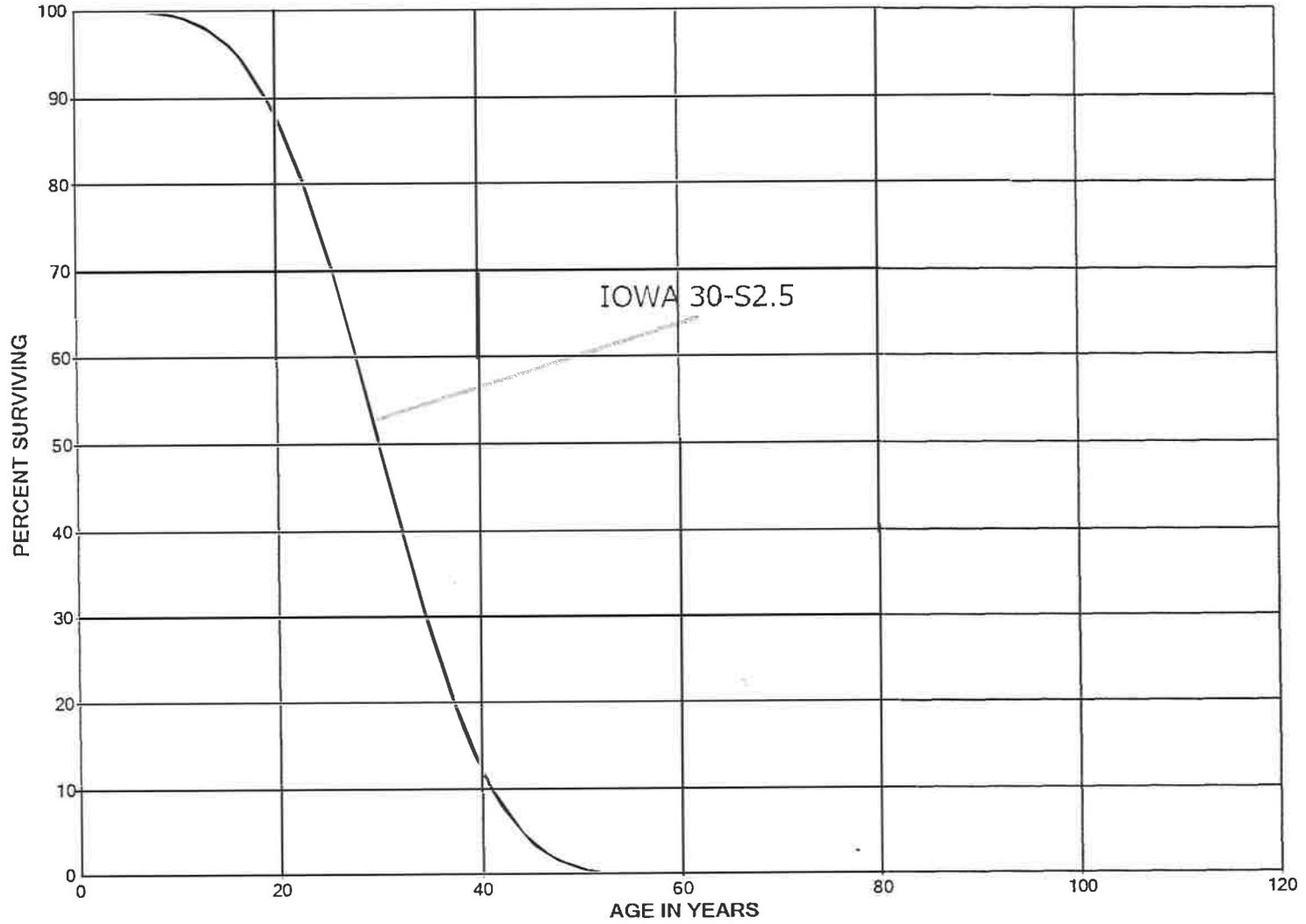
SUEZ WATER RHODE ISLAND

ACCOUNT 335 HYDRANTS

ORIGINAL LIFE TABLE, CONT.

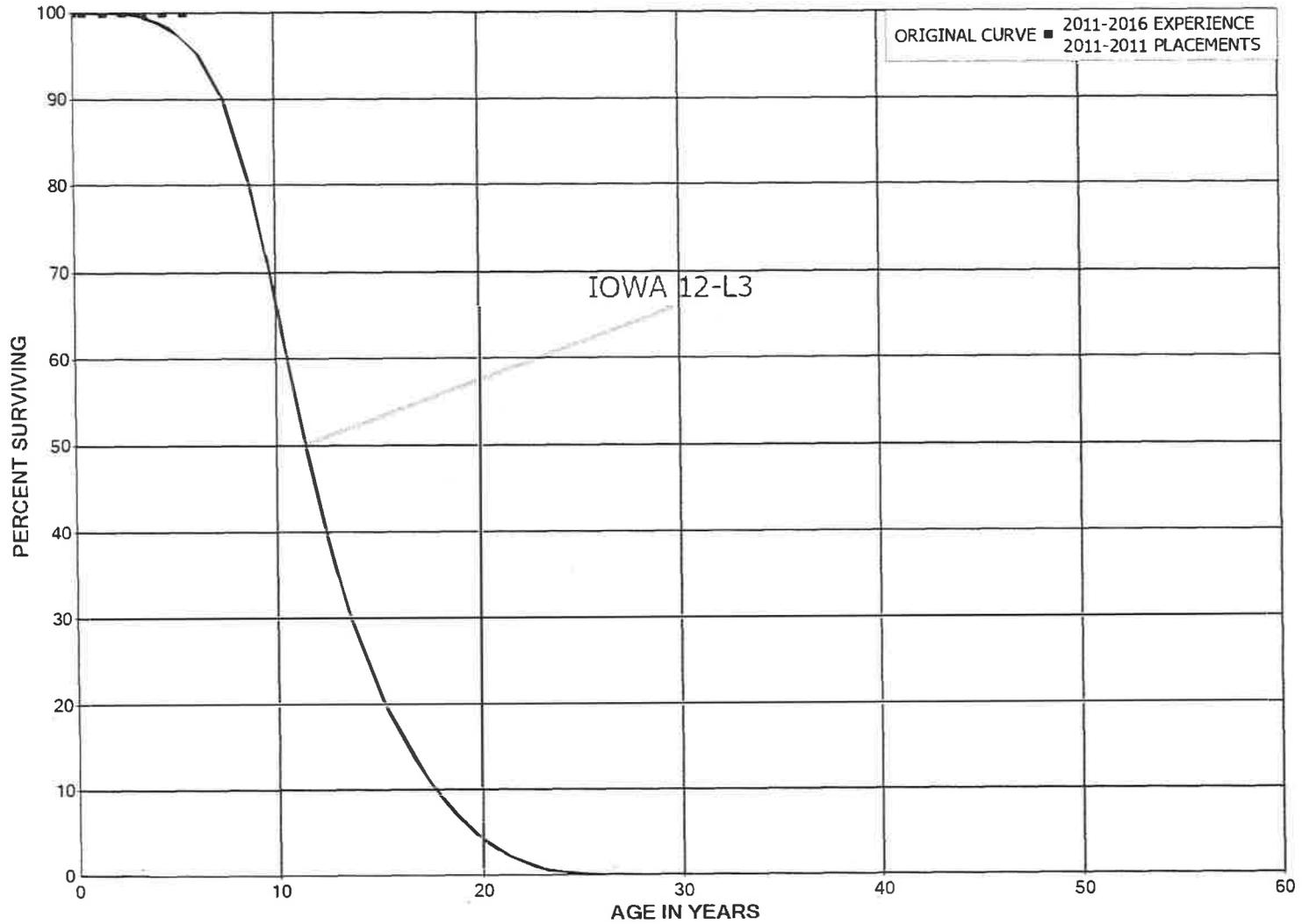
PLACEMENT BAND 1927-2016			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5					
80.5	1,535		0.0000		
81.5	1,535		0.0000		
82.5	1,535		0.0000		
83.5	1,535		0.0000		
84.5	1,535	1,535	1.0000		
85.5					

SUEZ WATER RHODE ISLAND
ACCOUNT 339.2 MISCELLANEOUS INTANGIBLE PLANT - OTHER EQUIPMENT
SMOOTH SURVIVOR CURVE





SUEZ WATER RHODE ISLAND
ACCOUNT 341 TRANSPORTATION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



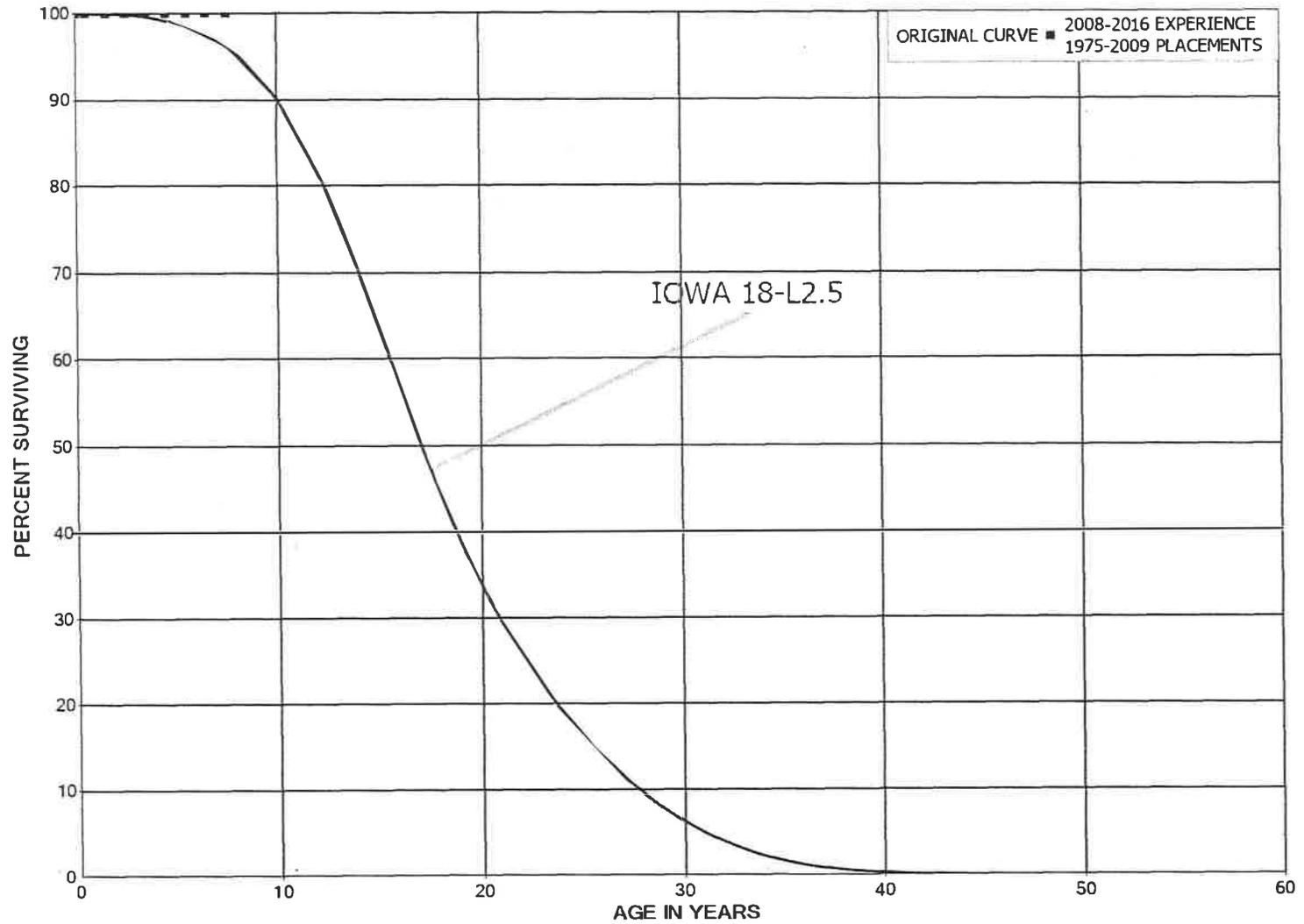
SUEZ WATER RHODE ISLAND

ACCOUNT 341 TRANSPORTATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 2011-2011			EXPERIENCE BAND 2011-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	3,451		0.0000	1.0000	100.00
0.5	3,451		0.0000	1.0000	100.00
1.5	3,451		0.0000	1.0000	100.00
2.5	3,451		0.0000	1.0000	100.00
3.5	3,451		0.0000	1.0000	100.00
4.5	3,451		0.0000	1.0000	100.00
5.5					100.00

SUEZ WATER RHODE ISLAND
ACCOUNT 345 POWER OPERATED EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



SUEZ WATER RHODE ISLAND

ACCOUNT 345 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1975-2009			EXPERIENCE BAND 2008-2016		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	15,685		0.0000	1.0000	100.00
0.5	15,685		0.0000	1.0000	100.00
1.5	15,685		0.0000	1.0000	100.00
2.5	15,685		0.0000	1.0000	100.00
3.5	15,685		0.0000	1.0000	100.00
4.5	15,685		0.0000	1.0000	100.00
5.5	15,685		0.0000	1.0000	100.00
6.5	15,685		0.0000	1.0000	100.00
7.5					100.00
8.5					
9.5					
10.5					
11.5					
12.5					
13.5					
14.5					
15.5					
16.5					
17.5					
18.5					
19.5					
20.5					
21.5					
22.5	11,450		0.0000		
23.5	11,450	11,450	1.0000		
24.5					
25.5					
26.5					
27.5	13,400		0.0000		
28.5	13,400	13,400	1.0000		
29.5					
30.5					
31.5					
32.5	10,650		0.0000		
33.5	10,650	10,650	1.0000		
34.5					

PART VIII. NET SALVAGE STATISTICS

SUEZ WATER RHODE ISLAND

ACCOUNTS 304.1 THROUGH 304.5 STRUCTURES AND IMPROVEMENTS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2009	5,837		0		0		0
2010							
2011							
2012							
2013							
2014	3,967		0		0		0
2015	4,068		0		0		0
2016							
TOTAL	13,871		0		0		0
THREE-YEAR MOVING AVERAGES							
09-11	1,946		0		0		0
10-12							
11-13							
12-14	1,322		0		0		0
13-15	2,678		0		0		0
14-16	2,678		0		0		0
FIVE-YEAR AVERAGE							
12-16	1,607		0		0		0

SUEZ WATER RHODE ISLAND
ACCOUNT 307 WELLS AND SPRINGS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2013	4,250		0		0		0
2014	10,000		0		0		0
2015	57,577		0		0		0
2016							
TOTAL	71,827		0		0		0
THREE-YEAR MOVING AVERAGES							
13-15	23,942		0		0		0
14-16	22,526		0		0		0

SUEZ WATER RHODE ISLAND
ACCOUNT 311 PUMPING EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2012	8,000		0		0		0
2013	15,029		0		0		0
2014	15,380	3,244	21		0	3,244-	21-
2015	16,683		0		0		0
2016	21,465	1,124	5		0	1,124-	5-
TOTAL	76,557	4,368	6		0	4,368-	6-
THREE-YEAR MOVING AVERAGES							
12-14	12,803	1,081	8		0	1,081-	8-
13-15	15,697	1,081	7		0	1,081-	7-
14-16	17,843	1,456	8		0	1,456-	8-
FIVE-YEAR AVERAGE							
12-16	15,311	874	6		0	874-	6-

SUEZ WATER RHODE ISLAND

ACCOUNT 320 WATER TREATMENT EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2009	2,500		0		0		0
2010							
2011	2,838		0		0		0
2012	8,867		0		0		0
2013	5,167		0		0		0
2014	3,000		0		0		0
2015	3,080		0		0		0
2016	750	1	0		0	1-	0
TOTAL	26,202	1	0		0	1-	0

THREE-YEAR MOVING AVERAGES

09-11	1,779		0		0		0
10-12	3,901		0		0		0
11-13	5,624		0		0		0
12-14	5,678		0		0		0
13-15	3,749		0		0		0
14-16	2,277		0		0		0

FIVE-YEAR AVERAGE

12-16	4,173		0		0		0
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SUEZ WATER RHODE ISLAND

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2009	1,500		0		0		0
2010							
2011	8,485		0		0		0
2012	27,535		0		0		0
2013	101,305	19,500	19		0	19,500-	19-
2014		75,000				75,000-	
2015	5,961		0		0		0
2016							
TOTAL	144,786	94,500	65		0	94,500-	65-

THREE-YEAR MOVING AVERAGES

09-11	3,328		0		0		0
10-12	12,007		0		0		0
11-13	45,775	6,500	14		0	6,500-	14-
12-14	42,947	31,500	73		0	31,500-	73-
13-15	35,755	31,500	88		0	31,500-	88-
14-16	1,987	25,000			0	25,000-	

FIVE-YEAR AVERAGE

12-16	26,960	18,900	70		0	18,900-	70-
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SUEZ WATER RHODE ISLAND

ACCOUNT 331 MAINS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2007	250		0		0		0
2008	200		0		0		0
2009							
2010							
2011							
2012							
2013	8,524		0		0		0
2014	2,991		0		0		0
2015	800	2,980	372		0	2,980-	372-
2016	2,637	4,406	167		0	4,406-	167-
TOTAL	15,402	7,386	48		0	7,386-	48-

THREE-YEAR MOVING AVERAGES

07-09	150		0		0		0
08-10	67		0		0		0
09-11							
10-12							
11-13	2,841		0		0		0
12-14	3,838		0		0		0
13-15	4,105	993	24		0	993-	24-
14-16	2,143	2,462	115		0	2,462-	115-

FIVE-YEAR AVERAGE

12-16	2,990	1,477	49		0	1,477-	49-
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SUEZ WATER RHODE ISLAND

ACCOUNT 333 SERVICES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2005	2,400		0		0		0
2006							
2007	3,220		0		0		0
2008	1,625		0		0		0
2009	200		0		0		0
2010	775		0		0		0
2011							
2012							
2013							
2014							
2015	130		707- 544-		0	707	544
2016	6,149		7,002 114		0	7,002-	114-
TOTAL	14,499		6,294 43		0	6,294-	43-

THREE-YEAR MOVING AVERAGES

05-07	1,873		0		0		0
06-08	1,615		0		0		0
07-09	1,682		0		0		0
08-10	867		0		0		0
09-11	325		0		0		0
10-12	258		0		0		0
11-13							
12-14							
13-15	43		236- 544-		0	236	544
14-16	2,093		2,098 100		0	2,098-	100-

FIVE-YEAR AVERAGE

12-16	1,256		1,259 100		0	1,259-	100-
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SUEZ WATER RHODE ISLAND

ACCOUNT 334 METER AND METER INSTALLATIONS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2005	3,177	46	1		0	46-	1-
2006							
2007	28,151		0		0		0
2008	7,065		0		0		0
2009	6,160		0		0		0
2010	6,240	46-	1-	1,638	26	1,684	27
2011							
2012							
2013				3,246		3,246	
2014	98,408		0		0		0
2015	69,787	8	0		0	8-	0
2016	96,052	1,441	2		0	1,441-	2-
TOTAL	315,040	1,449	0	4,884	2	3,435	1

THREE-YEAR MOVING AVERAGES

05-07	10,443	15	0		0	15-	0
06-08	11,739		0		0		0
07-09	13,792		0		0		0
08-10	6,488	15-	0	546	8	561	9
09-11	4,133	15-	0	546	13	561	14
10-12	2,080	15-	1-	546	26	561	27
11-13				1,082		1,082	
12-14	32,803		0	1,082	3	1,082	3
13-15	56,065	3	0	1,082	2	1,079	2
14-16	88,082	483	1		0	483-	1-

FIVE-YEAR AVERAGE

12-16	52,849	290	1	649	1	359	1
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SUEZ WATER RHODE ISLAND

ACCOUNT 335 HYDRANTS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2007	1,050		0		0		0
2008	3,115		0		0		0
2009	750		0		0		0
2010	1,350		0		0		0
2011	2,275		0		0		0
2012	3,925		0		0		0
2013				4,534		4,534	
2014							
2015	500		0		0		0
2016	2,446	7,060	289		0	7,060-	289-
TOTAL	15,411	7,060	46	4,534	29	2,526-	16-

THREE-YEAR MOVING AVERAGES

07-09	1,638		0		0		0
08-10	1,738		0		0		0
09-11	1,458		0		0		0
10-12	2,517		0		0		0
11-13	2,067		0	1,511	73	1,511	73
12-14	1,308		0	1,511	116	1,511	116
13-15	167		0	1,511	907	1,511	907
14-16	982	2,353	240		0	2,353-	240-

FIVE-YEAR AVERAGE

12-16	1,374	1,412	103	907	66	505-	37-
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SUEZ WATER RHODE ISLAND

ACCOUNT 339.2 MISCELLANEOUS INTANGIBLE PLANT - OTHER EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2013	4,250		0		0		0
2014							
2015							
2016							
TOTAL	4,250		0		0		0
THREE-YEAR MOVING AVERAGES							
13-15	1,417		0		0		0
14-16							

SUEZ WATER RHODE ISLAND

ACCOUNT 341 TRANSPORTATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2009	24,910		0		0		0
2010							
2011							
2012							
2013							
2014							
2015							
2016							
TOTAL	24,910		0		0		0

THREE-YEAR MOVING AVERAGES

09-11	8,303		0		0		0
10-12							
11-13							
12-14							
13-15							
14-16							

FIVE-YEAR AVERAGE

12-16

SUEZ WATER RHODE ISLAND
ACCOUNT 345 POWER OPERATED EQUIPMENT
SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2009	51,951		0		0		0
2010							
2011							
2012							
2013							
2014							
2015							
2016							
TOTAL	51,951		0		0		0
THREE-YEAR MOVING AVERAGES							
09-11	17,317		0		0		0
10-12							
11-13							
12-14							
13-15							
14-16							
FIVE-YEAR AVERAGE							
12-16							

**PART IX. DETAILED DEPRECIATION
CALCULATIONS**

SUEZ WATER RHODE ISLAND

ACCOUNT 304.1 STRUCTURES AND IMPROVEMENTS - SOURCE OF SUPPLY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. -5						
1942	16,569.93	16,556	15,793	1,605	2.42	663
1949	10,260.80	9,865	9,410	1,364	4.22	323
1950	9,259.01	8,851	8,443	1,279	4.48	285
1966	12,513.84	10,551	10,065	3,075	9.85	312
1971	6,528.97	5,157	4,919	1,936	12.39	156
1990	8,616.39	4,404	4,201	4,846	25.66	189
1996	27,235.00	11,021	10,513	18,084	30.73	588
2000	8,352.77	2,757	2,630	6,140	34.28	179
2001	11,412.96	3,550	3,386	8,598	35.19	244
2003	34,106.64	9,290	8,862	26,950	37.03	728
2006	17,885.92	3,816	3,640	15,140	39.84	380
2008	53,267.51	9,240	8,814	47,117	41.74	1,129
2009	526,301.32	80,793	77,072	475,544	42.69	11,139
2013	4,105.09	296	282	4,028	46.57	86
	746,416.15	176,147	168,030	615,707		16,401

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 37.5 2.20

SUEZ WATER RHODE ISLAND

ACCOUNT 304.3 STRUCTURES AND IMPROVEMENTS - TREATMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)	
SURVIVOR CURVE.. IOWA 50-R3							
NET SALVAGE PERCENT.. -5							
1942	2,443.45	2,441	2,401	165	2.42	68	
1949	2,986.44	2,871	2,824	312	4.22	74	
1950	297.00	284	279	33	4.48	7	
1966	878.00	740	728	194	9.85	20	
1971	2,168.18	1,712	1,684	593	12.39	48	
1985	1,615.00	959	944	752	21.72	35	
2008	6,717.91	1,165	1,146	5,908	41.74	142	
	17,105.98	10,172	10,006	7,955		394	
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT						20.2	2.30

SUEZ WATER RHODE ISLAND

ACCOUNT 304.4 STRUCTURES AND IMPROVEMENTS - TRANSMISSION AND DISTRIBUTION

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. -5						
1990	10,308.80	5,269	10,650	174	25.66	7
1995	15,463.20	6,540	13,219	3,017	29.86	101
2013	114,212.82	8,227	16,629	103,294	46.57	2,218
	139,984.82	20,036	40,498	106,486		2,326
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 45.8						1.66

SUEZ WATER RHODE ISLAND

ACCOUNT 304.5 STRUCTURES AND IMPROVEMENTS - GENERAL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R3						
NET SALVAGE PERCENT.. -5						
2000	44,166.13	14,580	34,530	11,844	34.28	346
2008	71,066.84	12,327	29,194	45,426	41.74	1,088
2009	425.24	65	154	293	42.69	7
2010	70,569.80	9,396	22,252	51,846	43.66	1,187
2011	14,154.62	1,599	3,787	11,075	44.62	248
2014	2,696.95	139	329	2,503	47.54	53
2016	1,941.41	20	47	1,991	49.51	40
	205,020.99	38,126	90,293	124,979		2,969
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						42.1 1.45

SUEZ WATER RHODE ISLAND

ACCOUNT 307 WELLS AND SPRINGS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 35-S1						
NET SALVAGE PERCENT.. -5						
1942	6,651.23	6,984	6,984			
1949	4,704.99	4,846	3,796	1,144	0.67	1,144
1950	5,320.98	5,437	4,259	1,328	0.94	1,328
1966	27,795.59	24,516	19,206	9,979	5.60	1,782
1971	9,017.55	7,502	5,877	3,591	7.27	494
1983	18,584.00	12,895	10,102	9,411	11.87	793
1998	16,070.00	7,395	5,793	11,080	19.66	564
1999	2,971.00	1,310	1,026	2,094	20.30	103
2001	193,993.21	77,752	60,910	142,783	21.64	6,598
2007	19,140.35	5,065	3,968	16,129	26.18	616
2008	14,402.63	3,452	2,704	12,419	27.01	460
2009	13,429.02	2,868	2,247	11,853	27.88	425
2012	81,620.33	10,774	8,440	77,261	30.60	2,525
2013	38,759.96	4,012	3,143	37,555	31.55	1,190
	452,460.84	174,808	138,455	336,629		18,022

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 18.7 3.98

SUEZ WATER RHODE ISLAND

ACCOUNT 308 INFILTRATION GALLERIES AND TUNNELS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 55-R2.5						
NET SALVAGE PERCENT.. 0						
2010	1,601.00	177	88	1,513	48.93	31
	1,601.00	177	88	1,513		31
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					48.8	1.94

SUEZ WATER RHODE ISLAND

ACCOUNT 309 SUPPLY MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31,2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 55-S2						
NET SALVAGE PERCENT.. 0						
1950	3,067.20	2,515	1,406	1,661	9.90	168
1966	7,156.80	5,098	2,851	4,306	15.82	272
1971	4,667.80	3,127	1,749	2,919	18.16	161
1980	1,777.90	1,029	575	1,203	23.17	52
1981	2,032.00	1,153	645	1,387	23.80	58
1982	2,540.00	1,411	789	1,751	24.44	72
1987	778.00	383	214	564	27.91	20
1988	17,935.74	8,593	4,805	13,131	28.65	458
2014	11,143.64	506	283	10,860	52.50	207
	51,099.08	23,815	13,317	37,782		1,468

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 25.7 2.87

SUEZ WATER RHODE ISLAND

ACCOUNT 311 PUMPING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R4						
NET SALVAGE PERCENT.. -10						
1942	2,086.36	2,295	2,295			
1949	3,562.90	3,893	3,919			
1950	784.00	854	862			
1966	30,199.63	29,912	33,220			
1968	263.76	257	290			
1971	9,271.77	8,758	10,199			
1976	41,931.00	36,858	46,124			
1978	4,409.00	3,737	4,716	134	10.33	13
1980	24,547.58	19,982	25,215	1,787	11.70	153
1982	1,406.94	1,096	1,383	165	13.13	13
1985	25,393.08	18,380	23,193	4,739	15.39	308
1988	33,120.90	22,014	27,779	8,654	17.81	486
1990	79,130.00	49,344	62,266	24,777	19.49	1,271
1994	17,161.11	9,212	11,624	7,253	23.04	315
1996	131,188.00	64,489	81,377	62,930	24.89	2,528
1998	653,038.68	291,008	367,214	351,129	26.77	13,117
2001	36,975.83	13,874	17,507	23,166	29.65	781
2002	104,958.92	36,895	46,557	68,898	30.62	2,250
2003	58,652.97	19,226	24,261	40,257	31.59	1,274
2006	22,704.22	5,800	7,319	17,656	34.55	511
2009	39,424.40	7,208	9,095	34,272	37.52	913
2011	4,744.11	637	804	4,415	39.51	112
2012	12,847.35	1,410	1,779	12,353	40.51	305
2013	18,520.61	1,585	2,000	18,373	41.50	443
2014	10,460.22	639	806	10,700	42.50	252
2015	167,050.38	6,125	7,730	176,026	43.50	4,047
	1,533,833.72	655,488	819,534	867,684		29,092

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 29.8 1.90

SUEZ WATER RHODE ISLAND

ACCOUNT 320 WATER TREATMENT EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 40-S0.5						
NET SALVAGE PERCENT.. -10						
1971	6,696.01	5,132	7,366			
1980	7,837.12	5,194	8,280	341	15.90	21
1981	3,043.87	1,980	3,157	191	16.35	12
1987	20,924.98	11,963	19,072	3,945	19.21	205
1990	14,897.46	7,878	12,559	3,828	20.77	184
1995	18,864.26	8,523	13,588	7,163	23.57	304
1998	70,806.90	28,448	45,352	32,536	25.39	1,281
1999	106,210.36	40,803	65,049	51,782	26.03	1,989
2001	8,149.10	2,837	4,523	4,441	27.34	162
2002	2,372.44	781	1,245	1,365	28.03	49
2006	12,156.78	3,039	4,845	8,527	30.91	276
2007	23,573.42	5,394	8,599	17,332	31.68	547
2008	83,519.60	17,295	27,572	64,300	32.47	1,980
2009	12,552.64	2,323	3,703	10,105	33.27	304
2011	24,266.25	3,377	5,384	21,309	34.94	610
2012	2,447.44	282	450	2,242	35.81	63
2013	20,780.85	1,886	3,007	19,852	36.70	541
2014	77,734.15	5,109	8,145	77,363	37.61	2,057
2015	15,772.85	633	1,009	16,341	38.54	424
2016	7,456.68	100	159	8,043	39.51	204
	540,063.16	152,977	243,064	351,005		11,213

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 31.3 2.08

SUEZ WATER RHODE ISLAND

ACCOUNT 330 DISTRIBUTION RESERVOIRS AND STANDPIPES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 50-R4						
NET SALVAGE PERCENT.. -30						
1968	578.00	630	223	528	8.05	66
1972	6,966.30	7,180	2,538	6,518	10.36	629
1980	6,149.00	5,444	1,924	6,070	15.95	381
1987	1,543.20	1,139	403	1,603	21.61	74
1988	146,916.00	105,121	37,156	153,835	22.48	6,843
1990	3,415.00	2,286	808	3,632	24.25	150
1997	130,320.00	65,225	23,054	146,362	30.75	4,760
1998	476,731.61	226,705	80,131	539,620	31.71	17,017
2007	44,639.34	10,991	3,885	54,146	40.53	1,336
2012	106,947.03	12,485	4,413	134,618	45.51	2,958
2013	3,371,404.26	306,798	108,441	4,274,385	46.50	91,922
2014	37,659.35	2,448	865	48,092	47.50	1,012
2015	2,282.94	89	32	2,936	48.50	61
	4,335,552.03	746,541	263,873	5,372,345		127,209
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 42.2						2.93

SUEZ WATER RHODE ISLAND

ACCOUNT 331 MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 110-R3						
NET SALVAGE PERCENT.. -25						
1830	1,830.00	2,288	2,288			
1888	207,897.54	224,646	160,617	99,255	14.91	6,657
1889	2,300.32	2,477	1,771	1,104	15.24	72
1890	440.31	472	337	213	15.57	14
1891	1,264.34	1,352	967	613	15.91	39
1892	2,892.22	3,081	2,203	1,412	16.26	87
1894	999.44	1,056	755	494	16.98	29
1896	3,071.92	3,221	2,303	1,537	17.73	87
1898	3,045.94	3,167	2,264	1,543	18.51	83
1901	561.84	576	412	290	19.74	15
1906	4,948.48	4,951	3,540	2,646	21.96	120
1908	5,220.22	5,166	3,694	2,831	22.91	124
1910	7,502.33	7,341	5,249	4,129	23.89	173
1911	7,964.98	7,749	5,540	4,416	24.39	181
1912	1,890.42	1,828	1,307	1,056	24.91	42
1913	1,530.77	1,471	1,052	861	25.43	34
1914	2,307.24	2,203	1,575	1,309	25.96	50
1915	12,169.83	11,547	8,256	6,956	26.50	262
1916	3,332.36	3,141	2,246	1,919	27.05	71
1917	5,097.06	4,773	3,413	2,958	27.60	107
1918	2,171.64	2,019	1,444	1,271	28.17	45
1919	5,429.68	5,014	3,585	3,202	28.74	111
1920	6,992.42	6,411	4,584	4,157	29.32	142
1921	6,050.28	5,507	3,937	3,626	29.90	121
1922	68.52	62	44	42	30.50	1
1923	6,875.74	6,165	4,408	4,187	31.10	135
1924	15,597.22	13,875	9,920	9,577	31.72	302
1925	26,183.82	23,107	16,521	16,209	32.34	501
1926	1,043.97	914	653	652	32.96	20
1927	18,117.30	15,729	11,246	11,401	33.60	339
1928	21,669.42	18,655	13,338	13,749	34.24	402
1929	38,347.98	32,735	23,405	24,530	34.88	703
1930	12,096.54	10,235	7,318	7,803	35.54	220
1931	2,660.20	2,231	1,595	1,730	36.20	48
1932	5,359.04	4,453	3,184	3,515	36.87	95
1933	13,737.68	11,312	8,088	9,084	37.54	242
1934	5,912.10	4,822	3,448	3,942	38.23	103
1935	1,195.66	966	691	804	38.91	21
1936	2,792.96	2,234	1,597	1,894	39.61	48
1937	30,898.44	24,470	17,495	21,128	40.31	524
1938	3,471.04	2,721	1,945	2,394	41.02	58
1939	6,015.92	4,667	3,337	4,183	41.73	100
1940	8,483.96	6,512	4,656	5,949	42.45	140

SUEZ WATER RHODE ISLAND

ACCOUNT 331 MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 110-R3						
NET SALVAGE PERCENT.. -25						
1941	266.70	203	145	188	43.17	4
1942	1,949.18	1,464	1,047	1,389	43.90	32
1944	93,595.88	68,729	49,140	67,855	45.38	1,495
1945	21,534.06	15,632	11,177	15,741	46.12	341
1946	747.50	536	383	551	46.88	12
1947	345,347.81	244,765	175,001	256,684	47.63	5,389
1948	263,738.72	184,617	131,997	197,676	48.40	4,084
1949	272,473.08	188,378	134,686	205,905	49.16	4,188
1950	183,021.40	124,912	89,309	139,468	49.94	2,793
1951	8,988.58	6,056	4,330	6,906	50.71	136
1952	6,749.66	4,487	3,208	5,229	51.50	102
1953	7,880.19	5,168	3,695	6,155	52.29	118
1954	2,910.17	1,882	1,346	2,292	53.08	43
1955	2,718.52	1,734	1,240	2,158	53.87	40
1956	8,186.23	5,146	3,679	6,554	54.68	120
1957	30,605.90	18,962	13,557	24,700	55.48	445
1958	98,798.48	60,289	43,105	80,393	56.30	1,428
1959	57,031.60	34,277	24,507	46,782	57.11	819
1960	78,823.12	46,640	33,347	65,182	57.93	1,125
1961	98,113.36	57,129	40,846	81,796	58.76	1,392
1962	82,168.08	47,069	33,653	69,057	59.59	1,159
1963	54,573.80	30,748	21,984	46,233	60.42	765
1964	51,934.71	28,765	20,566	44,352	61.26	724
1965	76,542.70	41,663	29,788	65,890	62.10	1,061
1966	189,024.73	101,064	72,258	164,023	62.95	2,606
1967	32,721.34	17,179	12,283	28,619	63.80	449
1968	60,109.00	30,970	22,143	52,993	64.66	820
1969	51,164.00	25,861	18,490	45,465	65.52	694
1970	63,896.00	31,672	22,645	57,225	66.38	862
1971	163,522.00	79,439	56,797	147,606	67.25	2,195
1972	270,354.00	128,665	91,993	245,950	68.12	3,611
1973	191,111.00	89,041	63,662	175,227	69.00	2,540
1974	104,962.00	47,853	34,214	96,988	69.88	1,388
1975	9,491.16	4,232	3,026	8,838	70.76	125
1976	23,434.29	10,213	7,302	21,991	71.65	307
1977	9,491.22	4,040	2,889	8,975	72.54	124
1978	93,869.22	38,998	27,883	89,454	73.44	1,218
1979	35,278.38	14,296	10,221	33,877	74.34	456
1980	23,104.44	9,126	6,525	22,356	75.24	297
1981	274,259.43	105,528	75,450	267,374	76.14	3,512
1982	27,482.26	10,290	7,357	26,996	77.05	350
1983	116,238.09	42,308	30,249	115,049	77.97	1,476
1984	39,776.14	14,066	10,057	39,663	78.88	503

SUEZ WATER RHODE ISLAND

ACCOUNT 331 MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31,2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 110-R3						
NET SALVAGE PERCENT.. -25						
1985	127,932.26	43,905	31,391	128,524	79.80	1,611
1986	67,962.12	22,613	16,168	68,785	80.72	852
1987	52,969.58	17,065	12,201	54,011	81.65	661
1988	274,709.21	85,596	61,199	282,188	82.58	3,417
1989	66,462.86	20,007	14,305	68,774	83.51	824
1990	9,491.22	2,757	1,971	9,893	84.44	117
1991	77,857.19	21,782	15,574	81,747	85.38	957
1992	9,491.22	2,554	1,826	10,038	86.32	116
1993	9,491.22	2,453	1,754	10,110	87.26	116
1994	9,491.22	2,350	1,680	10,184	88.21	115
1995	9,491.22	2,248	1,607	10,257	89.16	115
1996	275,458.83	62,261	44,515	299,809	90.11	3,327
1997	185,507.42	39,926	28,546	203,338	91.06	2,233
1998	36,427.55	7,447	5,324	40,210	92.01	437
1999	16,076.94	3,111	2,224	17,872	92.97	192
2000	154,215.48	28,162	20,135	172,634	93.93	1,838
2001	207,777.98	35,675	25,507	234,215	94.89	2,468
2002	184,298.72	29,635	21,188	209,185	95.85	2,182
2003	147,512.45	22,094	15,797	168,594	96.82	1,741
2004	54,351.29	7,547	5,396	62,543	97.78	640
2005	65,035.18	8,314	5,944	75,350	98.75	763
2006	1,497,798.71	174,962	125,094	1,747,154	99.72	17,521
2007	243,436.71	25,728	18,395	285,901	100.70	2,839
2008	514,392.83	48,694	34,815	608,176	101.67	5,982
2009	89,838.55	7,514	5,372	106,926	102.64	1,042
2010	114,917.55	8,332	5,957	137,690	103.62	1,329
2011	424,705.41	26,061	18,633	512,249	104.60	4,897
2012	148,355.84	7,451	5,327	180,118	105.58	1,706
2013	1,796,549.00	70,223	50,209	2,195,477	106.56	20,603
2014	726,238.87	20,298	14,512	893,287	107.54	8,307
2015	486,930.12	8,187	5,854	602,809	108.52	5,555
2016	148,817.75	828	592	185,430	109.51	1,693
	12,379,419.72	3,387,194	2,422,420	13,051,855		160,212

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 81.5 1.29

SUEZ WATER RHODE ISLAND

ACCOUNT 333 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 80-R4						
NET SALVAGE PERCENT.. -45						
1916	683.07	930	990			
1917	268.25	364	389			
1918	121.16	164	176			
1919	330.70	445	477	3	5.72	1
1920	578.46	776	832	7	5.99	1
1921	727.74	973	1,044	11	6.27	2
1922	487.45	649	696	11	6.55	2
1923	982.17	1,302	1,396	28	6.84	4
1924	1,240.40	1,638	1,757	42	7.13	6
1925	1,526.85	2,008	2,154	60	7.43	8
1926	646.65	847	908	30	7.74	4
1927	2,684.87	3,501	3,755	138	8.05	17
1928	1,601.51	2,079	2,230	92	8.38	11
1929	1,145.18	1,480	1,587	74	8.71	8
1930	778.23	1,001	1,074	54	9.06	6
1931	1,009.87	1,292	1,386	78	9.43	8
1932	654.70	833	893	56	9.80	6
1934	301.54	379	406	31	10.60	3
1935	164.26	205	220	18	11.03	2
1936	745.84	926	993	88	11.48	8
1937	839.13	1,035	1,110	107	11.94	9
1938	147.81	181	194	20	12.43	2
1939	585.81	712	764	85	12.93	7
1940	418.27	504	541	65	13.46	5
1941	521.83	624	669	88	14.01	6
1942	18.59	22	24	3	14.58	
1943	250.40	294	315	48	15.16	3
1944	342.97	399	428	69	15.77	4
1945	350.10	404	433	75	16.39	5
1946	1,202.41	1,373	1,472	271	17.02	16
1947	2,885.73	3,260	3,496	688	17.67	39
1948	2,396.01	2,678	2,872	602	18.33	33
1949	4,955.06	5,478	5,875	1,310	19.01	69
1950	9,545.40	10,436	11,192	2,649	19.68	135
1951	2,460.71	2,660	2,853	715	20.37	35
1952	3,181.54	3,398	3,644	969	21.07	46
1953	2,620.74	2,766	2,966	834	21.78	38
1954	2,708.10	2,823	3,028	899	22.49	40
1955	1,813.09	1,866	2,001	628	23.21	27
1956	3,360.66	3,414	3,661	1,212	23.95	51
1957	2,091.79	2,097	2,249	784	24.69	32
1958	5,078.62	5,022	5,386	1,978	25.44	78
1959	4,316.11	4,209	4,514	1,744	26.20	67

SUEZ WATER RHODE ISLAND

ACCOUNT 333 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 80-R4						
NET SALVAGE PERCENT.. -45						
1960	9,524.00	9,154	9,817	3,993	26.97	148
1961	7,457.88	7,063	7,575	3,239	27.75	117
1962	7,692.60	7,175	7,695	3,459	28.54	121
1963	11,730.37	10,771	11,551	5,458	29.34	186
1964	6,514.33	5,886	6,313	3,133	30.15	104
1965	7,417.27	6,592	7,070	3,685	30.97	119
1966	8,767.21	7,661	8,216	4,496	31.79	141
1967	7,301.81	6,269	6,723	3,865	32.63	118
1968	8,517.00	7,183	7,704	4,646	33.47	139
1969	9,112.00	7,544	8,091	5,121	34.32	149
1970	6,637.00	5,392	5,783	3,841	35.18	109
1971	13,800.00	10,993	11,790	8,220	36.05	228
1972	11,261.00	8,791	9,428	6,900	36.93	187
1973	21,464.00	16,414	17,603	13,520	37.81	358
1974	12,708.00	9,513	10,202	8,225	38.70	213
1976	9,959.96	7,129	7,646	6,796	40.51	168
1978	60,273.76	41,142	44,123	43,274	42.34	1,022
1979	18,420.55	12,266	13,155	13,555	43.26	313
1980	9,724.34	6,312	6,769	7,331	44.19	166
1981	189,131.97	119,569	128,233	146,008	45.12	3,236
1982	12,851.55	7,906	8,479	10,156	46.06	220
1983	76,252.52	45,595	48,899	61,667	47.01	1,312
1984	21,633.44	12,563	13,473	17,895	47.96	373
1985	84,606.03	47,675	51,130	71,549	48.91	1,463
1986	41,767.53	22,809	24,462	36,101	49.87	724
1987	31,057.91	16,420	17,610	27,424	50.83	540
1988	189,453.25	96,867	103,886	170,821	51.79	3,298
1989	40,696.57	20,093	21,549	37,461	52.76	710
1991	48,835.89	22,394	24,017	46,795	54.70	855
1996	189,988.73	70,215	75,303	200,181	59.61	3,358
1997	54,995.35	19,347	20,749	58,994	60.59	974
1998	45,387.70	15,153	16,251	49,561	61.58	805
1999	60,920.35	19,246	20,641	67,694	62.57	1,082
2000	118,434.67	35,291	37,848	133,882	63.56	2,106
2001	83,327.33	23,334	25,025	95,800	64.55	1,484
2002	174,176.64	45,650	48,958	203,598	65.54	3,106
2003	125,272.07	30,562	32,776	148,869	66.54	2,237
2004	86,048.33	19,449	20,858	103,912	67.53	1,539
2005	137,684.71	28,625	30,699	168,944	68.53	2,465
2006	141,820.55	26,939	28,891	176,749	69.52	2,542
2007	201,188.81	34,569	37,074	254,650	70.52	3,611
2008	125,483.90	19,309	20,708	161,244	71.51	2,255
2009	78,466.56	10,652	11,424	102,353	72.51	1,412

SUEZ WATER RHODE ISLAND

ACCOUNT 333 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 80-R4						
NET SALVAGE PERCENT.. -45						
2010	85,982.97	10,114	10,847	113,828	73.51	1,548
2011	120,718.77	12,011	12,881	162,161	74.51	2,176
2012	111,365.69	9,062	9,719	151,761	75.51	2,010
2013	160,773.79	10,199	10,938	222,184	76.50	2,904
2014	227,992.14	10,331	11,080	319,509	77.50	4,123
2015	122,985.07	3,344	3,586	174,742	78.50	2,226
2016	310,354.06	2,813	3,017	446,997	79.50	5,623
	3,816,707.71	1,138,803	1,221,315	4,312,911		67,267
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						64.1 1.76

SUEZ WATER RHODE ISLAND

ACCOUNT 334 METER AND METER INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 37-R3						
NET SALVAGE PERCENT.. 0						
1975	6,008.17	5,099	5,540	468	5.60	84
1976	5,046.90	4,231	4,597	450	5.98	75
1977	5,525.56	4,574	4,970	556	6.37	87
1978	6,488.88	5,298	5,756	733	6.79	108
1979	6,971.54	5,609	6,094	878	7.23	121
1980	9,613.15	7,613	8,271	1,342	7.70	174
1981	11,415.62	8,886	9,655	1,761	8.20	215
1982	10,213.98	7,807	8,482	1,732	8.72	199
1983	13,218.08	9,906	10,763	2,455	9.27	265
1984	15,621.37	11,467	12,459	3,162	9.84	321
1985	17,303.67	12,426	13,501	3,803	10.43	365
1986	18,745.65	13,147	14,284	4,462	11.05	404
1987	19,226.30	13,152	14,290	4,936	11.69	422
1988	22,110.25	14,730	16,004	6,106	12.35	494
1989	26,916.82	17,438	18,946	7,971	13.03	612
1990	27,878.13	17,533	19,049	8,829	13.73	643
1991	54,073.97	32,956	35,806	18,268	14.45	1,264
1992	61,082.19	36,022	39,138	21,944	15.18	1,446
1993	65,090.41	37,066	40,272	24,818	15.93	1,558
1994	47,585.10	26,120	28,379	19,206	16.69	1,151
1995	63,446.79	33,473	36,368	27,079	17.48	1,549
1996	87,239.34	44,162	47,982	39,257	18.27	2,149
1997	24,761.58	11,993	13,030	11,732	19.08	615
1998	21,424.02	9,901	10,757	10,667	19.90	536
1999	32,006.08	14,065	15,282	16,724	20.74	806
2000	93,071.60	38,763	42,116	50,956	21.59	2,360
2001	61,993.04	24,378	26,487	35,506	22.45	1,582
2002	60,306.31	22,297	24,225	36,081	23.32	1,547
2003	50,894.02	17,593	19,115	31,779	24.21	1,313
2004	139,403.20	44,797	48,672	90,731	25.11	3,613
2005	127,366.58	37,832	41,104	86,263	26.01	3,317
2006	103,023.54	28,039	30,464	72,560	26.93	2,694
2007	205,767.40	50,831	55,227	150,540	27.86	5,403
2008	316,586.59	70,247	76,323	240,264	28.79	8,345
2009	93,551.30	18,382	19,972	73,579	29.73	2,475
2010	124,698.36	21,300	23,142	101,556	30.68	3,310
2011	97,411.98	14,111	15,332	82,080	31.64	2,594
2012	152,701.29	18,118	19,685	133,016	32.61	4,079
2013	103,608.78	9,605	10,436	93,173	33.57	2,775

SUEZ WATER RHODE ISLAND

ACCOUNT 334 METER AND METER INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 37-R3						
NET SALVAGE PERCENT.. 0						
2014	139,783.65	9,256	10,056	129,728	34.55	3,755
2015	210,644.35	8,369	9,093	201,551	35.53	5,673
2016	190,004.40	2,516	2,734	187,271	36.51	5,129
	2,949,829.94	841,108	913,858	2,035,972		75,627

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 26.9 2.56

SUEZ WATER RHODE ISLAND

ACCOUNT 335 HYDRANTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R4						
NET SALVAGE PERCENT.. -20						
1958	2,000.00	1,918	2,111	289	13.06	22
1959	1,816.93	1,721	1,894	286	13.69	21
1960	3,243.87	3,034	3,339	554	14.34	39
1961	5,859.83	5,409	5,952	1,080	15.00	72
1962	4,044.04	3,683	4,053	800	15.67	51
1963	914.67	821	903	195	16.36	12
1964	3,239.03	2,867	3,155	732	17.05	43
1965	4,980.57	4,344	4,780	1,197	17.76	67
1966	4,201.11	3,608	3,970	1,071	18.48	58
1967	4,410.96	3,730	4,105	1,188	19.20	62
1968	2,761.00	2,297	2,528	785	19.94	39
1969	3,475.00	2,843	3,129	1,041	20.69	50
1970	1,207.00	970	1,067	381	21.46	18
1971	2,480.20	1,958	2,155	821	22.23	37
1972	4,244.00	3,289	3,619	1,474	23.02	64
1973	9,610.00	7,308	8,042	3,490	23.81	147
1975	3,743.00	2,734	3,009	1,483	25.44	58
1976	3,142.00	2,247	2,473	1,297	26.27	49
1977	16,519.00	11,552	12,713	7,110	27.12	262
1978	23,791.00	16,264	17,898	10,651	27.97	381
1979	5,672.00	3,787	4,167	2,639	28.83	92
1980	17,029.00	11,098	12,213	8,222	29.70	277
1981	20,103.20	12,775	14,058	10,066	30.58	329
1982	27,981.00	17,321	19,061	14,516	31.47	461
1983	23,321.00	14,049	15,461	12,524	32.37	387
1984	48,555.00	28,434	31,291	26,975	33.28	811
1985	72,579.00	41,270	45,416	41,679	34.20	1,219
1986	41,127.00	22,687	24,966	24,386	35.12	694
1987	19,429.00	10,384	11,427	11,888	36.05	330
1988	37,461.00	19,371	21,317	23,636	36.99	639
1989	8,263.00	4,129	4,544	5,372	37.93	142
1990	26,319.00	12,692	13,967	17,616	38.88	453
1991	25,140.00	11,682	12,856	17,312	39.83	435
1992	7,269.00	3,249	3,575	5,148	40.79	126
1993	6,534.00	2,805	3,087	4,754	41.75	114
1994	11,227.00	4,618	5,082	8,390	42.72	196
1995	11,905.00	4,684	5,155	9,131	43.69	209
1996	27,691.00	10,398	11,443	21,786	44.66	488
1997	11,128.15	3,977	4,377	8,977	45.64	197
1998	2,973.18	1,009	1,110	2,458	46.62	53
1999	7,366.41	2,366	2,604	6,236	47.60	131
2000	13,350.25	4,047	4,454	11,566	48.58	238
2001	20,177.06	5,748	6,325	17,887	49.57	361

SUEZ WATER RHODE ISLAND

ACCOUNT 335 HYDRANTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 65-R4						
NET SALVAGE PERCENT.. -20						
2002	28,226.61	7,525	8,281	25,591	50.56	506
2003	20,880.09	5,185	5,706	19,350	51.55	375
2004	10,584.15	2,435	2,680	10,021	52.54	191
2005	34,467.66	7,299	8,032	33,329	53.53	623
2006	11,804.20	2,282	2,511	11,654	54.53	214
2007	26,461.03	4,631	5,096	26,657	55.52	480
2008	15,285.25	2,393	2,633	15,709	56.52	278
2009	22,748.83	3,146	3,462	23,837	57.51	414
2010	21,231.21	2,544	2,800	22,677	58.51	388
2011	25,238.88	2,558	2,815	27,472	59.51	462
2012	46,908.21	3,889	4,280	52,010	60.51	860
2013	50,748.06	3,279	3,609	57,289	61.50	932
2014	38,010.89	1,754	1,930	43,683	62.50	699
2015	79,054.61	2,189	2,409	92,457	63.50	1,456
2016	28,233.15	261	287	33,593	64.50	521
	1,058,166.29	386,547	425,382	844,417		18,333
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						46.1 1.73

SUEZ WATER RHODE ISLAND

ACCOUNT 339.1 MISCELLANEOUS INTANGIBLE PLANT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
2008	216,940.06	92,200		216,940	11.50	18,864
2009	7,447.68	2,793		7,448	12.50	596
2010	7,056.00	2,293		7,056	13.50	523
	231,443.74	97,286		231,444		19,983
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						11.6 8.63

SUEZ WATER RHODE ISLAND

ACCOUNT 339.2 MISCELLANEOUS INTANGIBLE PLANT - OTHER EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 30-S2.5						
NET SALVAGE PERCENT.. 0						
1985	2,946.00	2,335	2,946			
1988	7,290.00	5,502	7,290			
1990	7,364.00	5,341	7,364			
1992	9,354.00	6,476	9,201	153	9.23	17
1995	3,254.00	2,067	2,937	317	10.94	29
2008	77,858.72	21,878	31,085	46,774	21.57	2,168
	108,066.72	43,599	60,823	47,244		2,214
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						21.3 2.05

SUEZ WATER RHODE ISLAND

ACCOUNT 340.1 OFFICE FURNITURE AND EQUIPMENT - HARDWARE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31,2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 5-SQUARE						
NET SALVAGE PERCENT.. 0						
2006	2,146.25	2,146	2,146			
2008	4,301.46	4,301	4,301			
2009	1,441.34	1,441	1,441			
2010	28,042.74	28,043	28,043			
2011	28,116.60	28,117	28,117			
2012	20,107.84	18,097	5,218	14,890	0.50	14,890
2013	2,502.00	1,751	505	1,997	1.50	1,331
2014	5,246.31	2,623	756	4,490	2.50	1,796
2015	4,506.99	1,352	390	4,117	3.50	1,176
2016	6,973.21	697	201	6,772	4.50	1,505
	103,384.74	88,568	71,118	32,267		20,698

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 1.6 20.02

SUEZ WATER RHODE ISLAND

ACCOUNT 340.2 OFFICE FURNITURE AND EQUIPMENT - SOFTWARE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 5-SQUARE						
NET SALVAGE PERCENT.. 0						
2006	12,743.23	12,743	12,743			
2008	55,980.73	55,981	55,981			
2009	35,270.47	35,270	35,270			
2010	11,674.70	11,675	11,675			
2011	17,650.30	17,650	17,650			
2012	19,410.25	17,469	2,559	16,851	0.50	16,851
2013	65,410.00	45,787	6,707	58,703	1.50	39,135
2014	1,273.00	636	93	1,180	2.50	472
2016	4,433.00	443	65	4,368	4.50	971
	223,845.68	197,654	142,743	81,103		57,429
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 1.4						25.66

SUEZ WATER RHODE ISLAND

ACCOUNT 340.21 OFFICE FURNITURE AND EQUIPMENT - CC & B - LIGHTHOUSE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 8-SQUARE						
NET SALVAGE PERCENT.. 0						
2011	552,855.90	380,088	395,586	157,270	2.50	62,908
	552,855.90	380,088	395,586	157,270		62,908
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 2.5						11.38

SUEZ WATER RHODE ISLAND

ACCOUNT 340.3 OFFICE FURNITURE AND EQUIPMENT - FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2000	10,639.40	10,639	10,639			
2006	1,957.73	1,370	198-	2,156	4.50	479
2007	29,022.75	18,381	2,652-	31,675	5.50	5,759
2011	2,612.45	958	138-	2,750	9.50	289
2014	6,275.61	1,046	151-	6,427	12.50	514
2016	12,124.53	404	59-	12,183	14.50	840
	62,632.47	32,798	7,441	55,191		7,881
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						7.0 12.58

SUEZ WATER RHODE ISLAND

ACCOUNT 341 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 12-L3						
NET SALVAGE PERCENT.. 0						
2011	3,451.18	1,516	460	2,991	6.73	444
	3,451.18	1,516	460	2,991		444
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					6.7	12.87

SUEZ WATER RHODE ISLAND

ACCOUNT 343 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 25-SQUARE						
NET SALVAGE PERCENT.. 0						
1982	2,062.00	2,062	2,062			
1991	7,994.00	7,994	7,994			
1993	3,803.00	3,575	3,803			
2000	8,589.64	5,669	8,542	48	8.50	6
2003	700.97	379	571	130	11.50	11
2004	2,677.06	1,339	2,017	660	12.50	53
2006	5,940.87	2,495	3,759	2,182	14.50	150
2007	1,559.04	592	892	667	15.50	43
2008	2,553.52	868	1,308	1,246	16.50	76
2009	1,260.30	378	570	690	17.50	39
2010	3,069.34	798	1,202	1,867	18.50	101
2011	71.38	16	24	47	19.50	2
2012	6,033.35	1,086	1,636	4,397	20.50	214
2013	18,918.92	2,649	3,992	14,927	21.50	694
2014	3,760.32	376	567	3,193	22.50	142
2015	1,041.51	62	93	949	23.50	40
2016	3,971.42	79	119	3,852	24.50	157
	74,006.64	30,417	39,151	34,856		1,728

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 20.2 2.33

SUEZ WATER RHODE ISLAND

ACCOUNT 345 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 18-L2.5						
NET SALVAGE PERCENT.. 0						
2009	15,685.42	6,091	8,210	7,475	11.01	679
	15,685.42	6,091	8,210	7,475		679
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					11.0	4.33

SUEZ WATER RHODE ISLAND

ACCOUNT 346 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2002	6,758.51	6,533	3,187	3,572	0.50	3,572
2006	1,435.98	1,005	490	946	4.50	210
2008	8,489.97	4,811	2,347	6,143	6.50	945
2009	95,722.68	47,861	23,352	72,371	7.50	9,649
2010	55,991.82	24,263	11,838	44,154	8.50	5,195
2011	34,305.02	12,579	6,137	28,168	9.50	2,965
2012	52,769.80	15,831	7,724	45,046	10.50	4,290
2015	4,504.93	450	220	4,285	13.50	317
2016	30,993.52	1,033	504	30,490	14.50	2,103
	290,972.23	114,366	55,799	235,174		29,246
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						8.0 10.05

SUEZ WATER RHODE ISLAND

ACCOUNT 347 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2016

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 25-SQUARE						
NET SALVAGE PERCENT.. 0						
2005	77,078.62	35,456	16,470	60,609	13.50	4,490
2008	2,598.74	884	411	2,188	16.50	133
	79,677.36	36,340	16,881	62,797		4,623
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					13.6	5.80