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December 20, 2016

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Attention: Filing Center
201 High Street SE, Suite 100
Post Office Box 1088
Salem, OR 97308-1088

Re: UM____: NW Natural's Updated Depreciation Study

Attention Filing Center:

Northwest Natural Gas Company, dba NW Natural ("NW Natural" or "Company") hereby files an updated depreciation study with the Public Utility Commission of Oregon (the "Commission") pursuant to OAR 860-027-0350, which requires each energy utility to file with the Commission an updated depreciation study at least once every five years.¹

NW Natural hired Gannett Fleming, Inc. to conduct the depreciation study of its gas plant in service as of December 31, 2015. The purpose of the depreciation study is to determine the annual depreciation accrual rates and amounts for accounting and ratemaking purposes. The depreciation study includes descriptions 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.

The study sets forth an annual system depreciation expense of \$76.4 million when applied to depreciable plant balances as of December 31, 2015. Using the depreciation rates currently in effect for NW Natural, NW Natural's annual system depreciation expense would be \$76.2 million. Thus, the difference in depreciation expense under the depreciation rates currently in effect for NW Natural and the depreciation expense under the depreciation rates set forth in the study is relatively small (around \$200 thousand). For this reason, NW Natural is not seeking to change the company's depreciation rates with this filing. Rather, NW Natural makes this filing in accordance with the Commission's rules, and proposes that the study be reviewed and used as the basis for its depreciation rates in the Company's next general rate proceeding.

¹ NW Natural agreed with OPUC Staff to file this study in December of 2016, and this agreement was noted in the rulemaking for OAR 860-027-0350, and Commission Order No. 15-232 (see page 1, fn 2).

Public Utility Commission of Oregon
December 20, 2016
Page 2

Please address correspondence on this matter to me with copies to the following:

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NW Natural looks forward to engaging with Staff in its review of the study. Please do not hesitate to contact me if you have any questions about this filing.

Very truly yours,

NW NATURAL GAS COMPANY

/s/ Mark R. Thompson

Mark R. Thompson
Director of Regulatory Affairs

Attachment

NORTHWEST NATURAL GAS COMPANY
PORTLAND, OREGON

2015 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION
ACCRUALS RELATED TO GAS PLANT
AS OF DECEMBER 31, 2015

Prepared by:



Gannett Fleming

*Excellence Delivered **As Promised***

NORTHWEST NATURAL GAS COMPANY
Portland, Oregon

2015 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION
ACCRUALS RELATED TO GAS PLANT
AS OF DECEMBER 31, 2015

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



Excellence Delivered **As Promised**

November 29, 2016

Northwest Natural Gas Company
220 NW Second Avenue
Portland, OR 97209

Attention Mr. Mark Thompson
Manager, Rates and Regulatory Affairs

Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the gas plant of Northwest Natural Gas Company as of December 31, 2015. 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 blue ink that reads "John J. Spanos".

JOHN J. SPANOS
Sr. Vice President

JJS:mlw

061280.200

Gannett Fleming Valuation and Rate Consultants, LLC

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	iii
PART I. INTRODUCTION	I-1
Scope	I-2
Plan of Report	I-2
Basis of the Study	I-3
Depreciation	I-3
Service Life and Net Salvage Estimates.....	I-4
PART II. ESTIMATION OF SURVIVOR CURVES	II-1
Survivor Curves.....	II-2
Iowa Type Curves.....	II-3
Retirement Rate Method of Analysis	II-9
Schedules of Annual Transactions in Plant Records	II-10
Schedule of Plant Exposed to Retirement.....	II-13
Original Life Table	II-15
Smoothing the Original Survivor Curve.....	II-17
PART III. SERVICE LIFE CONSIDERATIONS.....	III-1
Service Life Analysis	III-2
Life Span Estimates.....	III-4
PART IV. NET SALVAGE CONSIDERATIONS	IV-1
Salvage Analysis	IV-2
Net Salvage Considerations	IV-2
PART V. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION.....	V-1
Group Depreciation Procedures.....	V-2
Single Unit of Property.....	V-2
Remaining Life Annual Accruals.....	V-3
Average Service Life Procedure.....	V-3
Calculation of Annual and Accrued Amortization.....	V-4
PART VI. RESULTS OF STUDY	VI-1
Qualification of Results.....	VI-2
Description of Statistical Support.....	VI-2
Description of Detailed Tabulations.....	VI-3

TABLE OF CONTENTS, cont.

Table 1. Summary of Estimated Survivor Curves, Net Salvage, Original Cost, Book Depreciation Reserve and Calculated Annual Depreciation Accruals Related to Gas Plant as of December 31, 2015 VI-5

PART VII. SERVICE LIFE STATISTICS VII-1

PART VIII. NET SALVAGE STATISTICS VIII-1

PART IX. DETAILED DEPRECIATION CALCULATIONS IX-1

NORTHWEST NATURAL GAS COMPANY
DEPRECIATION STUDY

EXECUTIVE SUMMARY

Pursuant to Northwest Natural Gas Company's ("NWNat" or "Company") request, Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") conducted a depreciation study related to the gas plant of NWNat as of December 31, 2015. 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, and forecasted net salvage characteristics for each depreciable group of assets.

NWNat's accounting policy has not changed since the last depreciation study was prepared. However, there have been changes to the plant in service due to system improvements. These improvements have produced changes in the life and salvage estimates since the last depreciation study which creates new depreciation rates than what currently are utilized.

Gannett Fleming recommends the calculated annual depreciation accrual rates set forth herein apply specifically to gas plant in service as of December 31, 2015 as summarized by Table 1 of the study. Supporting analysis and calculations are provided within the study.

The study results set forth an annual depreciation expense of \$76.4 million when applied to depreciable plant balances as of December 31, 2015. The results are summarized at the functional level as follows:

SUMMARY OF ORIGINAL COST, ACCRUAL RATES AND AMOUNTS

<u>FUNCTION</u>	<u>ORIGINAL COST AS OF DECEMBER 31, 2015</u>	<u>PROPOSED RATE</u>	<u>PROPOSED EXPENSE</u>
Intangible Plant	\$ 940,564,739.51	4.18	\$ 39,280,454
Oil Gas Facilities	21,398.00	-	0
Other Production Facilities	628,802.00	-	0
Underground Storage Plant	135,844,294.45	1.86	2,531,124
Local Storage Plant	41,171,566.97	2.61	1,074,978
Transmission Plant	321,665,650.39	2.08	6,679,395
Distribution Plant	2,003,946,206.44	2.74	54,990,841
General Plant	173,494,761.88	4.83	8,377,902
General Plant Reserve Amortization	-	-	<u>(1,241,386)</u>
Total	<u>\$2,771,122,937.31</u>	<u>2.76</u>	<u>\$76,361,059</u>

PART I. INTRODUCTION

NORTHWEST NATURAL GAS COMPANY DEPRECIATION STUDY

PART I. INTRODUCTION

SCOPE

This report sets forth the results of the depreciation study for Northwest Natural Gas Company ("Company"), to determine the annual depreciation accrual rates and amounts for book purposes applicable to the original cost of gas plant as of December 31, 2015. The rates and amounts are based on the straight line remaining life method of depreciation. This report also describes the concepts, methods and judgments which underlie the recommended annual depreciation accrual rates related to gas plant in service as of December 31, 2015.

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 2015, a review of Company practice and outlook as they relate to plant operation and retirement, and consideration of current practice in the gas industry, including knowledge of service lives and net salvage estimates used for other gas companies.

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 methods used in the service life study. Part III, Service Life Considerations, presents the results of the average service life analysis. Part IV, Net Salvage Considerations, presents the results 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 gas 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. Gannett Fleming recommends its continued use. 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 gas utility industry, and comparisons of the service life and net salvage estimates from our studies of other gas utilities. The use of survivor curves to reflect the expected dispersion of retirement provides a consistent method of estimating depreciation for gas 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,

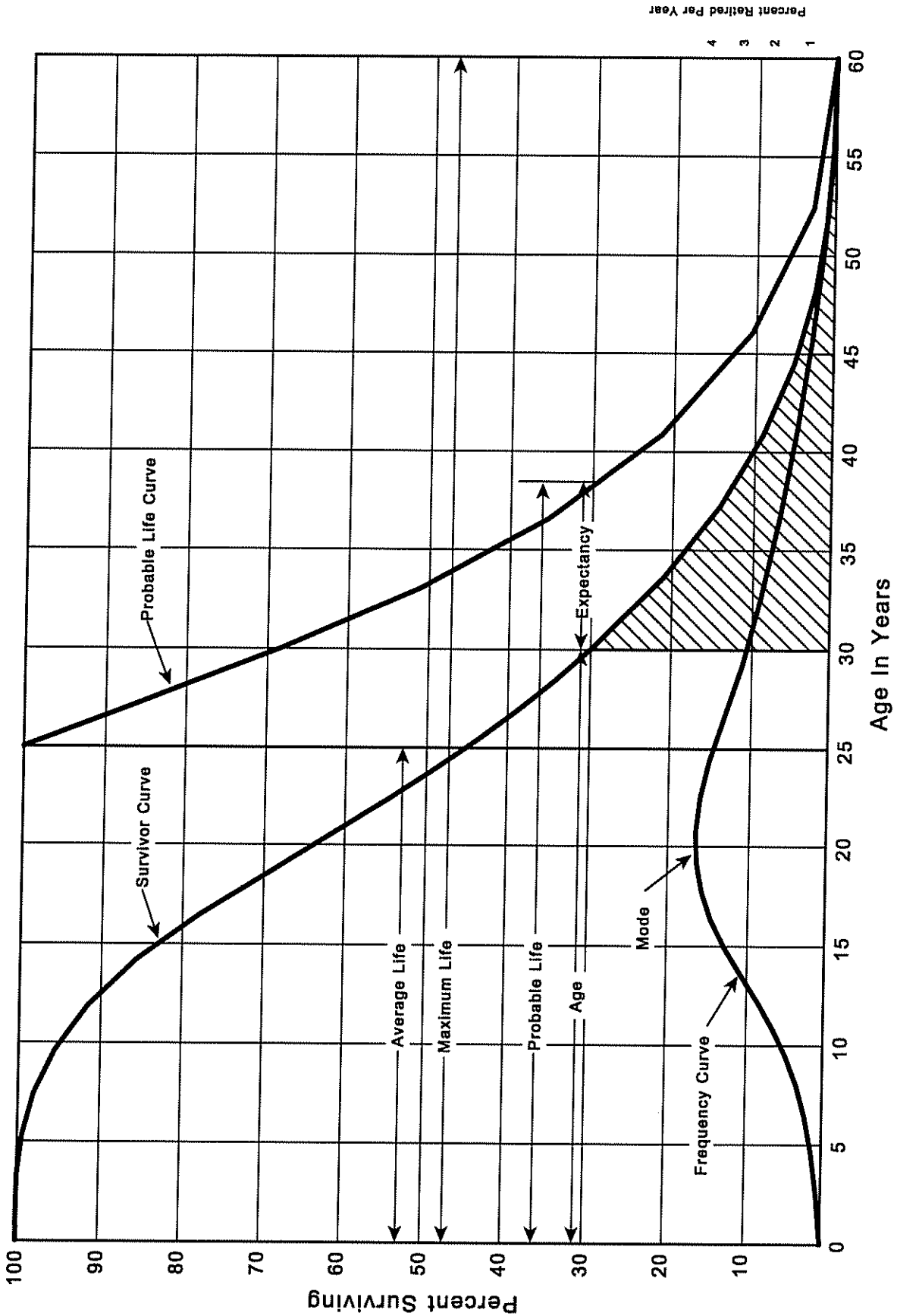


Figure 1. A Typical Survivor Curve and Derived Curves

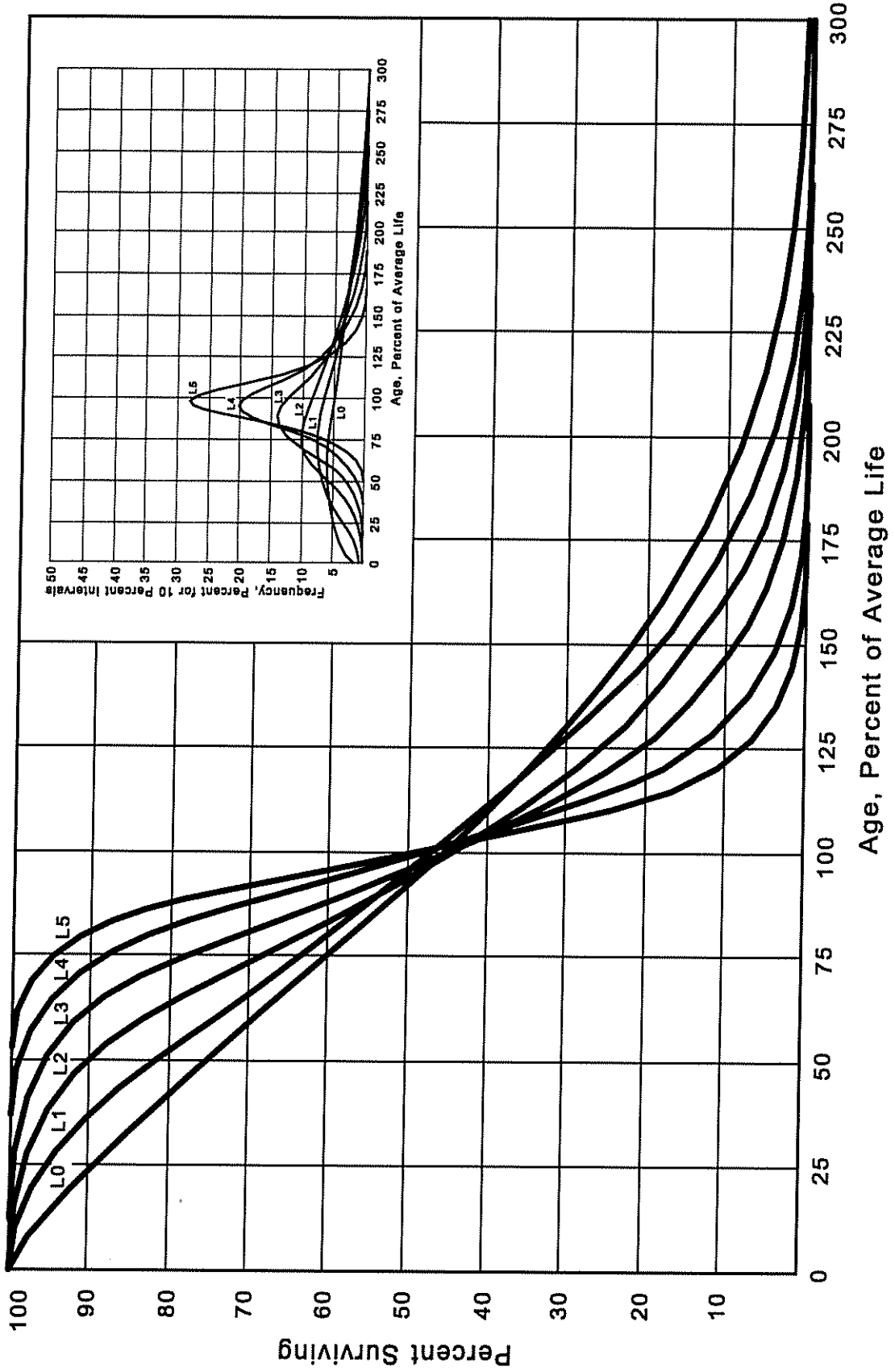


Figure 2. Left Modal or "L" Iowa Type Survivor Curves

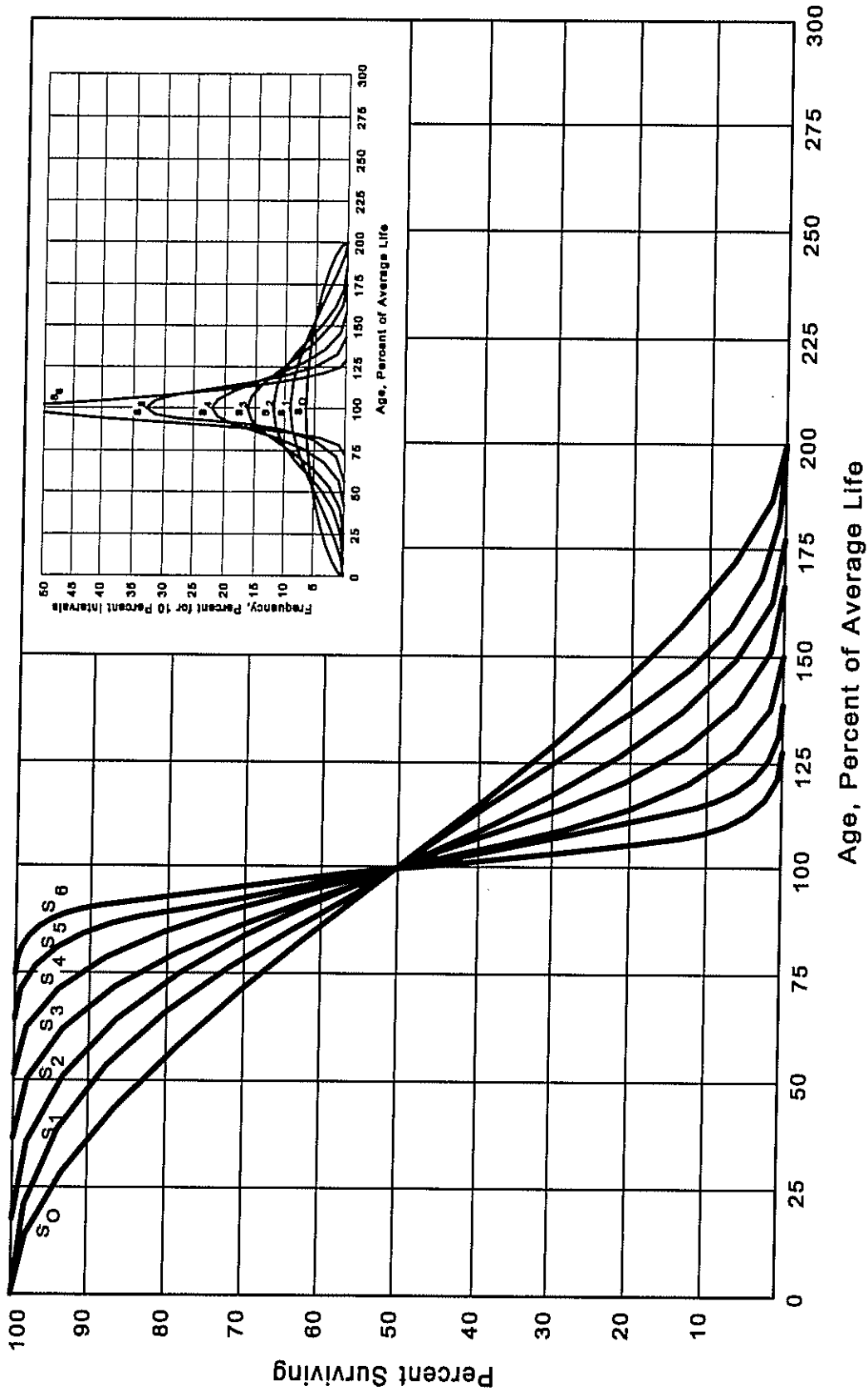


Figure 3. Symmetrical or "S" Iowa Type Survivor Curves

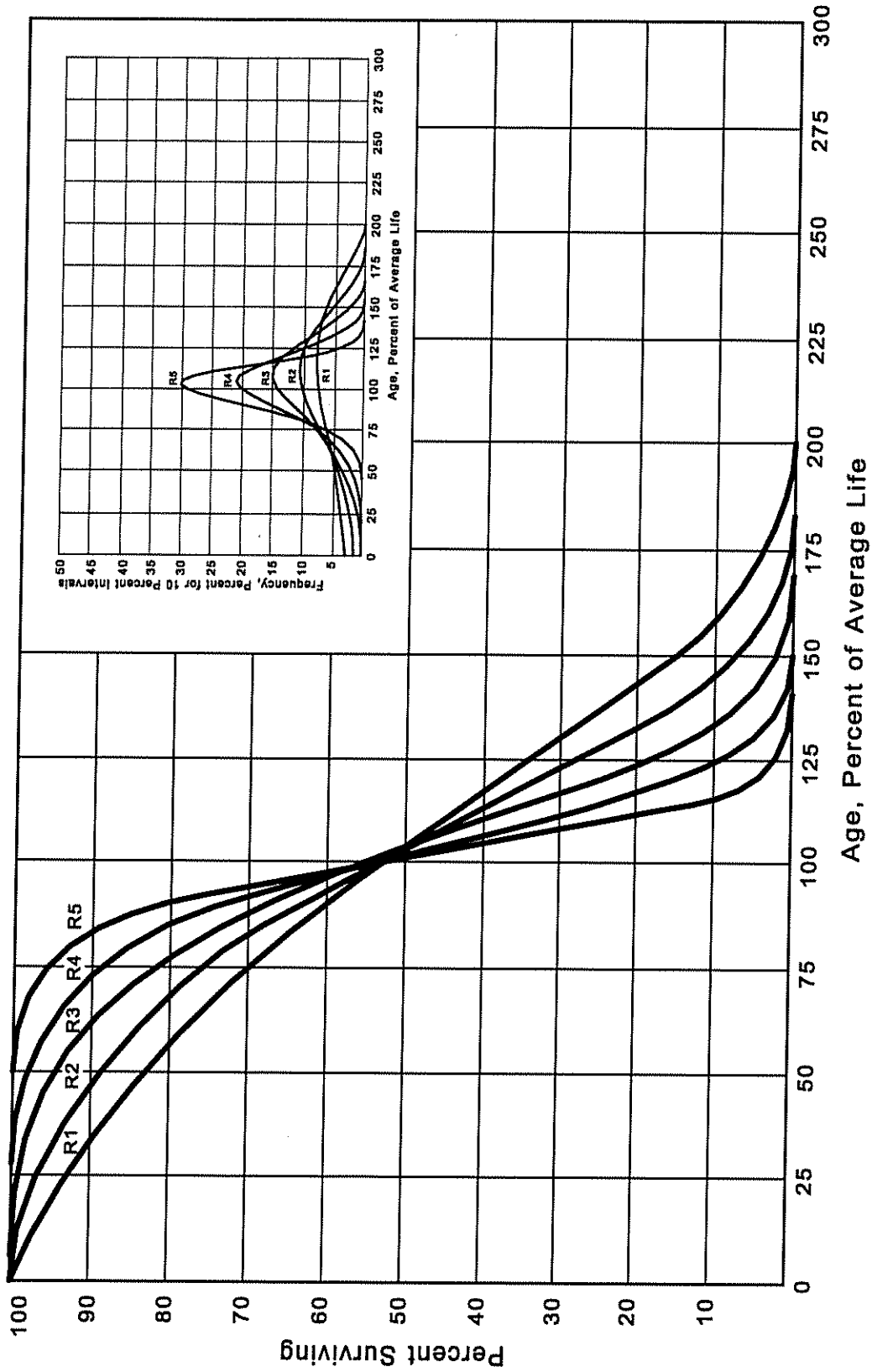


Figure 4. Right Modal or "R" Iowa Type Survivor Curves

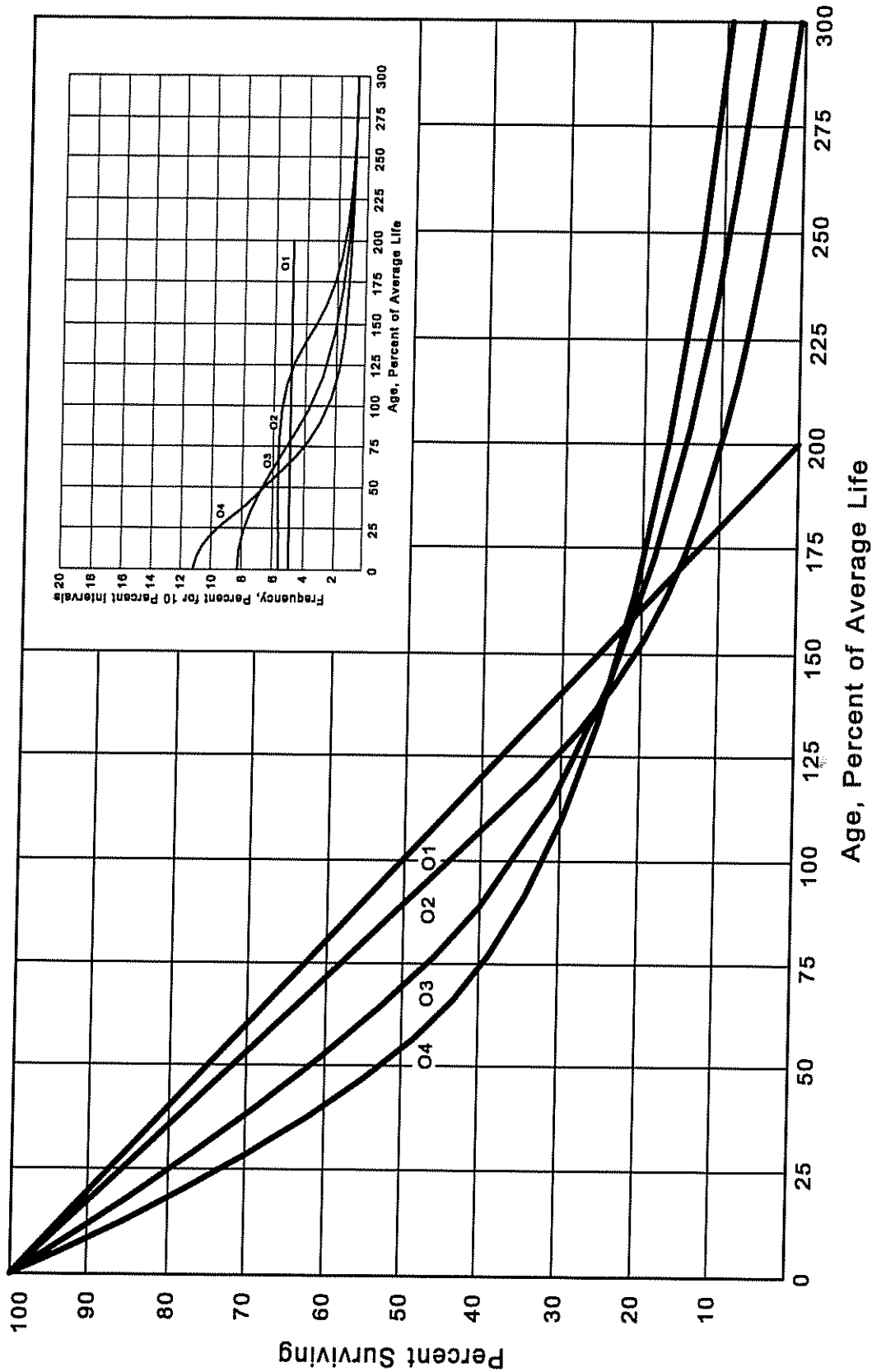


Figure 5. Origin Modal or "O" Iowa Type Survivor Curves

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 2006-2015 during which there were placements during the years 2001-2015. 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 2001 were retired in 2006. 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 2006 retirements of 2001 installations and ending with the 2015 retirements of the 2010 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 2006-2015
SUMMARIZED BY AGE INTERVAL

Year Placed (1)	Retirements, Thousands of Dollars										Total During Age Interval (12)	Age Interval (13)
	During Year											
	2006 (2)	2007 (3)	2008 (4)	2009 (5)	2010 (6)	2011 (7)	2012 (8)	2013 (9)	2014 (10)	2015 (11)		
2001	10	11	12	13	14	16	23	24	25	26	26	13½-14½
2002	11	12	13	15	16	18	20	21	22	19	44	12½-13½
2003	11	12	13	14	16	17	19	21	22	18	64	11½-12½
2004	8	9	10	11	11	13	14	15	16	17	83	10½-11½
2005	9	10	11	12	13	14	16	17	19	20	93	9½-10½
2006	4	9	10	11	12	13	14	15	16	20	105	8½-9½
2007	5	5	11	12	13	14	15	16	18	20	113	7½-8½
2008			6	12	13	15	16	17	19	19	124	6½-7½
2009				6	13	15	16	17	19	19	131	5½-6½
2010					13	15	16	17	19	19	143	4½-5½
2011					7	14	16	17	19	20	146	3½-4½
2012						8	18	20	22	23	150	2½-3½
2013							9	20	22	25	151	1½-2½
2014								11	23	25	153	½-1½
2015									11	24	80	0-½
Total	53	68	86	106	128	157	196	231	273	308	1,606	

Experience Band 2006-2015

Placement Band 2001-2015

SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2006-2015
SUMMARIZED BY AGE INTERVAL

Year Placed (1)	Acquisitions, Transfers and Sales, Thousands of Dollars										Total During Age Interval (12)	Age Interval (13)	
	2006 (2)	2007 (3)	2008 (4)	2009 (5)	2010 (6)	2011 (7)	2012 (8)	2013 (9)	2014 (10)	2015 (11)			
2001	-	-	-	-	-	-	60 ^a	-	-	-	-	-	13½-14½
2002	-	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2003	-	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2004	-	-	-	-	-	-	-	(5) ^b	-	-	60	-	10½-11½
2005	-	-	-	-	-	-	-	6 ^a	-	-	-	-	9½-10½
2006	-	-	-	-	-	-	-	-	-	-	(5)	-	8½-9½
2007	-	-	-	-	-	-	-	-	-	-	6	-	7½-8½
2008	-	-	-	-	-	-	-	-	-	-	-	-	6½-7½
2009	-	-	-	-	-	-	-	(12) ^b	-	-	-	-	5½-6½
2010	-	-	-	-	-	-	-	-	22 ^a	-	-	-	4½-5½
2011	-	-	-	-	-	-	-	(19) ^b	-	-	-	10	3½-4½
2012	-	-	-	-	-	-	-	-	-	-	-	-	2½-3½
2013	-	-	-	-	-	-	-	-	-	(102) ^c	(121)	-	1½-2½
2014	-	-	-	-	-	-	-	-	-	-	-	-	½-1½
2015	-	-	-	-	-	-	-	-	-	-	-	-	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 2006 through 2015 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 2011 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 2006-2015
SUMMARIZED BY AGE INTERVAL

Year Placed	Exposures, Thousands of Dollars											Total at Beginning of Age Interval (12)	Age Interval (13)
	Annual Survivors at the Beginning of the Year												
	2006 (2)	2007 (3)	2008 (4)	2009 (5)	2010 (6)	2011 (7)	2012 (8)	2013 (9)	2014 (10)	2015 (11)			
2001	255	245	234	222	209	195	239	216	192	167	167	13½-14½	
2002	279	268	256	243	228	212	194	174	153	131	323	12½-13½	
2003	307	296	284	271	257	241	224	205	184	162	531	11½-12½	
2004	338	330	321	311	300	289	276	262	242	226	823	10½-11½	
2005	376	367	357	346	334	321	307	297	280	261	1,097	9½-10½	
2006	420 ^a	416	407	397	386	374	361	347	332	316	1,503	8½-9½	
2007	460 ^a	460 ^a	455	444	432	419	405	390	374	356	1,952	7½-8½	
2008			510 ^a	504	492	479	464	448	431	412	2,463	6½-7½	
2009				580 ^a	574	561	546	530	501	482	3,057	5½-6½	
2010					660 ^a	653	639	623	628	609	3,789	4½-5½	
2011						750 ^a	742	724	685	663	4,332	3½-4½	
2012							850 ^a	841	821	799	4,955	2½-3½	
2013								960 ^a	949	926	5,719	1½-2½	
2014									1,080 ^a	1,069	6,579	½-1½	
2015										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		

Experience Band 2006-2015
Placement Band 2001-2015

^aAdditions during the year

For the entire experience band 2006-2015, 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 2006-2015

Placement Band 2001-2015

(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	167	26	0.1557	0.8443	42.24
14.5					35.66
Total	<u>44,780</u>	<u>1,606</u>			

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

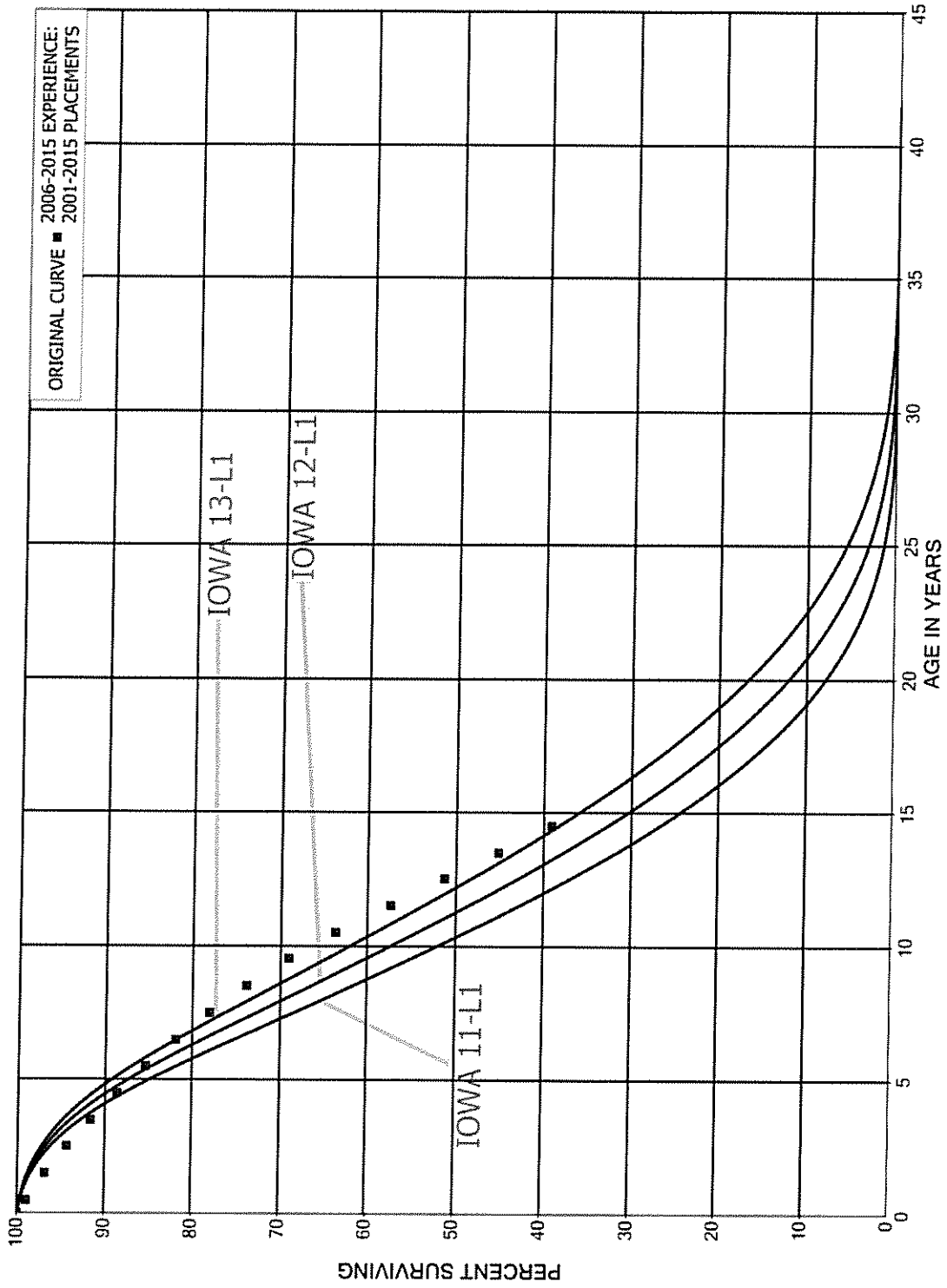


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN S0 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES

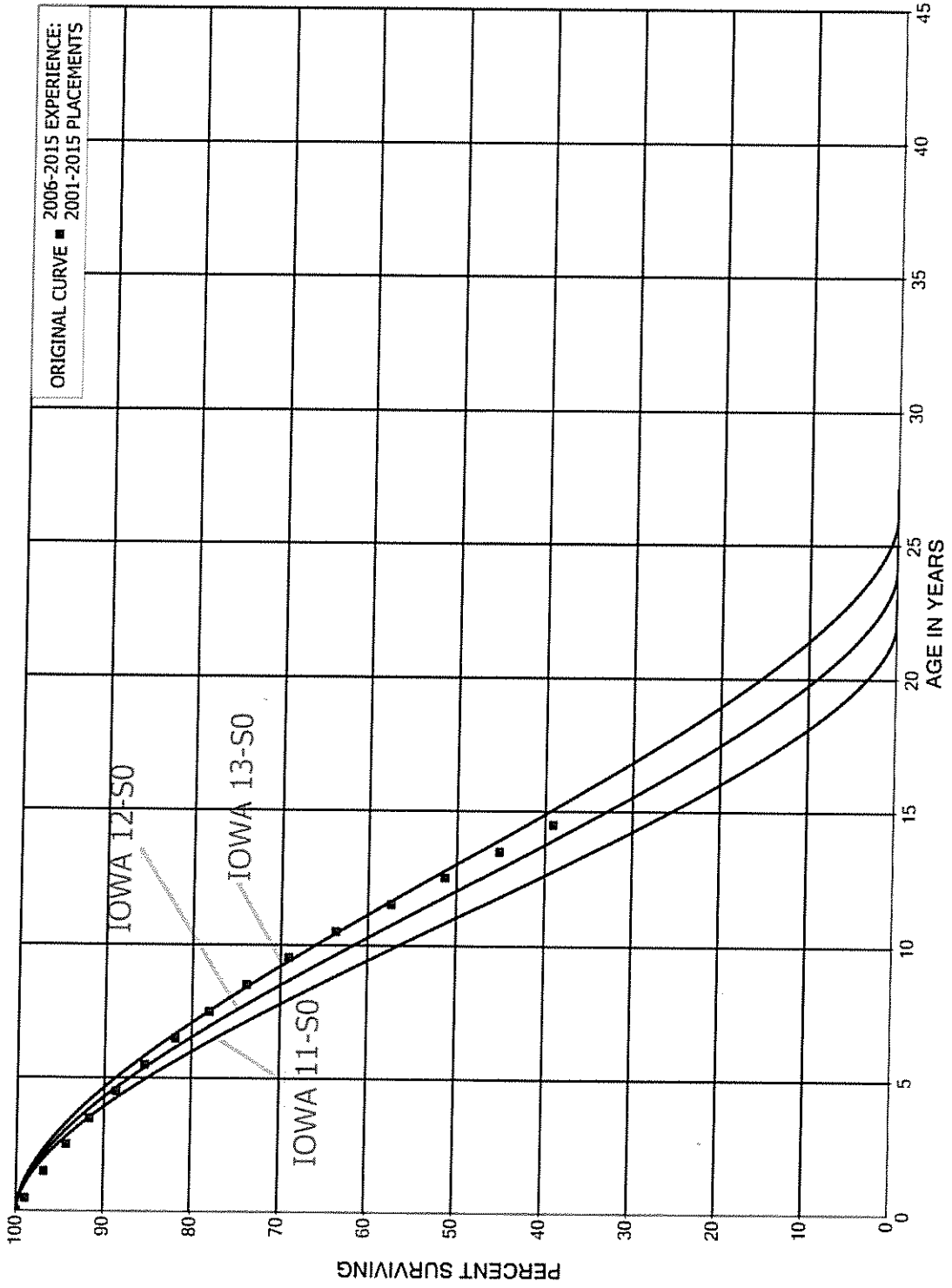


FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES

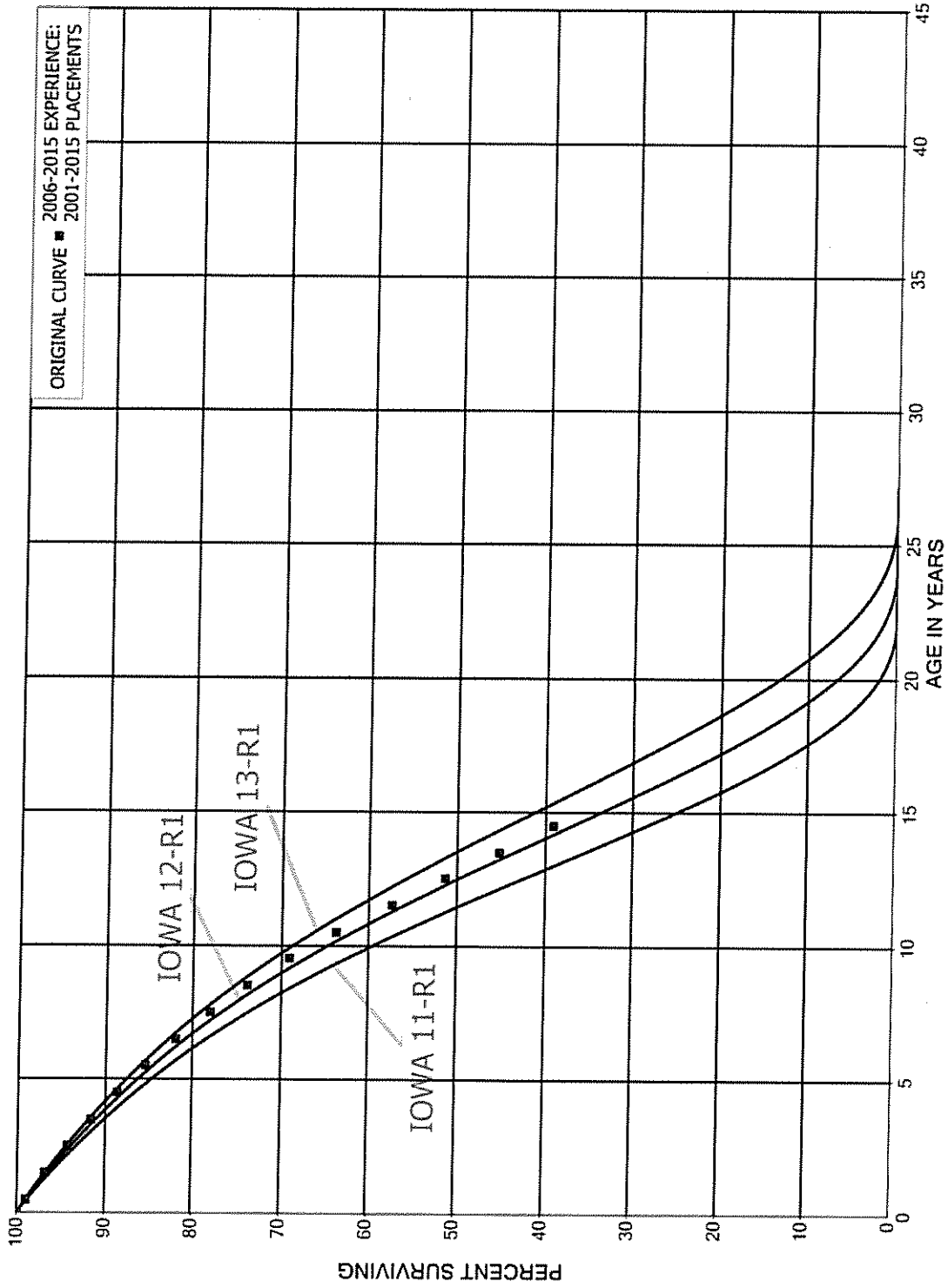
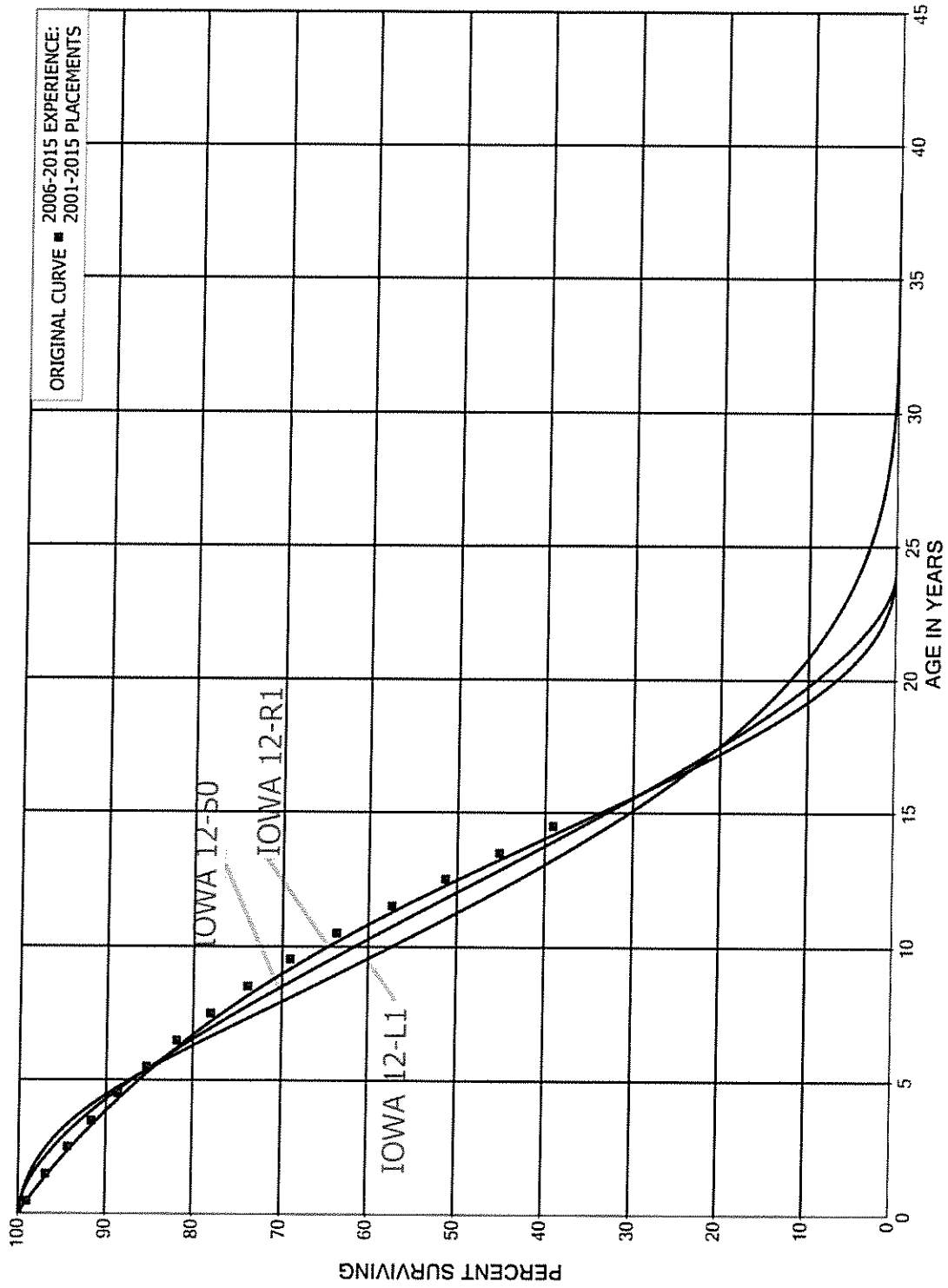


FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, S0 AND R1 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES



PART III. SERVICE LIFE CONSIDERATIONS

PART III. SERVICE LIFE CONSIDERATIONS

SERVICE LIFE ANALYSIS

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

For many of the plant accounts and subaccounts for which survivor curves were estimated, the statistical analyses using the retirement rate method resulted in good to excellent indications of the survivor patterns experienced. These accounts represent 70 percent of depreciable plant. Generally, the information external to the statistics led to no significant departure from the indicated survivor curves for the accounts listed below. The statistical support for the service life estimates is presented in the section beginning on page VII-2.

OIL GAS FACILITIES

305.50 Structures and Improvements - Other

OTHER PRODUCTION FACILITIES

305.11 Structures and Improvements – Gas Production

305.17 Structures and Improvements – Mixing Station

LOCAL STORAGE PLANT

363.50 CNG Refueling Facilities

DISTRIBUTION PLANT

375	Structures and Improvements
376.11	Mains – HP 4” and Less
376.12	Mains – HP 4” and Over
380	Services
381	Meters
381.10	Meters – Electric
381.20	Meters – ERT
382.10	Meter Installations – Electric
382.20	Meter Installations – ERT

GENERAL PLANT

392	Transportation Equipment
396	Power Operated Equipment

The combined analysis of Accounts 376.11 - Mains, HP 4” and Less; and 376.12, Mains – HP 4” and Over, is used to illustrate the manner in which the study was conducted for the groups in the preceding list. The combined Accounts 376.11 and 376.12 represent 40 percent of the total depreciable plant. Aged plant accounting data have been compiled for the years 1910 through 2015. These data have been coded in the course of the Company's normal record keeping according to account or property group, type of transaction, year in which the transaction took place, and year in which the gas plant was placed in service. The retirements, other plant transactions, and plant additions were analyzed by the retirement rate method.

The survivor curve estimate is based on the statistical indications for the period 1910 through 2015 and 1961 through 2015. The Iowa 65-R2.5 is an excellent fit of the original survivor curve. The 65-year service life is within the typical service life range of 55 to 70 years for mains. The 65-year life reflects the Company's plans and practices of the past and next few years. The previous estimate was the Iowa 60-R2.5.

The survivor curve estimate for Account 380, Services, is based on the statistical analyses of historical retirement experience for the periods 1919-2015 and 1976-2015.

The 58-R2 estimate for Account 380, Services, is an excellent fit of the original survivor curve developed from historical plant retirements for the period 1919 through 2015. The 58-R2 survivor curve sets forth the constant rates of retirement through approximately age 70. The 58-year average service life is above the upper end of the typical range of 40-55 years for services. The previous estimate was the Iowa 53-R1.5

The survivor curve estimates for the remaining accounts in the preceding list were based on similar statistical analyses and previous studies for this and other gas utilities. The remaining accounts were based primarily on judgment and estimates of other gas utilities.

Life Span Estimates

Inasmuch as production plant consists of large units, the life span technique was employed in conjunction with the use of interim survivor curves which reflect interim retirements that occur prior to the ultimate retirement of the major unit. An interim survivor curve was estimated for each plant account, inasmuch as the rate of interim retirements differs from account to account. The interim survivor curves estimated for local storage plant were based on the retirement rate method of life analysis which incorporated experienced aged retirements for the period 1961 through 2015.

The depreciable life span estimates for storage facilities were the result of considering experienced life spans of similar facilities, the age of surviving plants, general operating characteristics of the station, major refurbishing, and discussions with management personnel concerning the probable long-term outlook for the stations.

The estimated survivor curves for local storage plant reflect the life span or forecast concept of life estimation. In the life span concept, an interim survivor curve is selected

to describe the rates of retirement between installation and the final concurrent retirement of all facilities at a location. The forecast life span for the Linnton and Newport plants in the local storage plant accounts, is set forth in years from the date of their initial major installation. Although the Company has no plans to replace these plants in the foreseeable future, the forecast retirement dates represent the midpoint of a range of dates during which significant replacement of the facilities presently in service will be required due to their age and improvements in technology.

	Probable Retirement <u>Date</u>	Initial Major <u>Installation</u>	Life <u>Span</u>
Local Storage			
Linnton	2031	1969	62
Newport	2027	1977	50

Similar studies were performed for the remaining plant accounts. Each of the judgments represented a consideration of statistical analyses of aged plant activity, management's outlook for the future, and the typical range of lives used by other gas companies.

The selected amortization periods for other General Plant accounts are described in the section "Calculated Annual and Accrued Amortization."

PART IV. NET SALVAGE CONSIDERATIONS

4

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 1993 through 2015. 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 future net salvage are expressed as percentages of surviving plant in service, i.e., all future retirements. In cases in which removal costs are expected to exceed salvage receipts, a negative net salvage percentage is estimated. The net salvage estimates were based on judgment which incorporated analyses of historical cost of removal and salvage data, expectations with respect to future removal requirements and markets for retired equipment and materials.

The analyses of historical cost of removal and salvage data are presented in the section titled "Net Salvage Statistics" for the plant accounts for which the net salvage estimate relied partially on those analyses.

Statistical analyses of historical data for the period 1993 through 2015 contributed significantly toward the net salvage estimates for 10 plant accounts, representing 71 percent of the depreciable plant, as follows:

DISTRIBUTION PLANT

376.11	Mains – HP 4" and Less
376.12	Mains – HP 4" and Over
380	Services
381	Meters

381.20	Meters – ERT
382.20	Meter Installations – ERT

GENERAL PLANT

390	Structures and Improvements
390.1	Structures and Improvements – Source Control Plant
392	Transportation Equipment
396	Power Operated Equipment

Account 376.11, Mains – HP 4” and Less, is used to illustrate the manner in which the study was conducted for the groups in the preceding list. Net salvage data for the period 1993 through 2015 were analyzed for this account. The data include cost of removal, gross salvage and net salvage amounts and each of these amounts is expressed as a percent of the original cost of regular retirements. Three-year moving averages for the 1993-1995 through 2013-2015 periods were computed to smooth the annual amounts.

Cost of removal fluctuated considerably during the 23-year period, 1993-2015. The practices for applying labor costs to removing pipe versus installing new pipe has not changed. Cost of removal for the most recent five years averaged 382 percent.

Gross salvage has been minimal throughout the period. The most recent five-year average of 6 percent gross salvage reflects minimal salvage value for pipe.

The net salvage percent based on the overall period 1993 through 2015 is 92 percent negative net salvage. The range of estimates made by other gas companies for mains is negative 15 to negative 75 percent. Because the overall statistical indications are within the range and the most recent five-year period is above the upper end of the range, the statistical indication of negative 75 percent was selected for the Company’s mains.

*

The net salvage estimates for the remaining accounts were based on judgment incorporating estimates of previous studies of this and other gas utilities.

The net salvage estimates for the remaining plant accounts were estimated using the above-described process of historical indications, judgment and reviewing the typical range of estimates used by other gas companies. The results of the net salvage for each plant account are presented in account sequence beginning in the section titled "Net Salvage Statistics", page VIII-2.

Generally, the net salvage estimates for remaining general plant accounts were zero percent, consistent with amortization accounting.

**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 1476 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:

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

Remaining Life Annual Accruals

For the purpose of calculating remaining life accruals as of December 31, 2015, 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, 2015, 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:

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

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 a number of accounts that represent numerous units of property, but a very small portion of depreciable gas plant in service.

The accounts and their amortization periods are as follows:

<u>Account</u>	Amortization Period, <u>Years</u>
391.1 Office Furniture and Equipment	20
391.2 Office Furniture and Equipment – Computers	5
393.0 Stores Equipment	25
394.0 Tools, Shop and Garage Equipment - Non Specific	25
395.0 Laboratory Equipment	20
397.0 Communication Equipment	15
397.1 Communication Equipment – Mobile	10
397.2 Communication Equipment – Non Mobile and Telemeter	15
397.3 Communication Equipment – Telemeter Other	15
397.4 Communication Equipment – Telemeter Microwave	15
397.5 Communication Equipment – Telephone	10
398.1 Miscellaneous Equipment – Print Shop	15
398.2 Miscellaneous Equipment – Kitchen	15
398.3 Miscellaneous Equipment – Janitorial	20
398.4 Miscellaneous – Leased Buildings	20
398.5 Miscellaneous Equipment - Other	20

For the purpose of calculating annual amortization amounts as of December 31, 2015, the book depreciation reserve for each plant account or subaccount is assigned or allocated to vintages. The book reserve assigned to vintages with an age greater than the amortization period is equal to the vintage's original cost. The remaining book reserve is allocated among vintages with an age less than the amortization period in proportion to the calculated accrued amortization. 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 future amortizations (original cost less allocated book reserve) by the remaining period of amortization for the vintage.

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 gas plant in service as of December 31, 2015. For most plant accounts, the application of such rates to future balances that reflect additions subsequent to December 31, 2015, is reasonable for a period of three to five years.

DESCRIPTION OF STATISTICAL SUPPORT

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 gas 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.

DESCRIPTION OF DETAILED TABULATIONS

A summary of the results of the study, as applied to the original cost of gas plant at December 31, 2015, is presented on pages VI-5 through VI-9 of this report. The schedule 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 gas plant.

The tables of the calculated annual depreciation applicable to depreciable assets as of December 31, 2015 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.

NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2015

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST (4)	BOOK DEPRECIATION RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	ANNUAL ACCRUAL RATE (8)=(7)/(4)	COMPOSITE REMAINING LIFE (9)=(6)/(7)
DEPRECIABLE GAS PLANT								
INTANGIBLE PLANT								
303.1 MISCELLANEOUS INTANGIBLE PLANT - SOFTWARE	15-SQ	0	57,110,816.52	20,771,445	36,339,372	3,871,516	6.78	9.4
303.2 MISCELLANEOUS INTANGIBLE PLANT - CUSTOMER INFO. SYSTEM	15-SQ	0	32,409,597.11	32,386,120	23,477	1,878	0.01	12.5
303.3 MISCELLANEOUS INTANGIBLE PLANT - INDUSTRIAL AND COMMERCIAL	10-SQ	0	4,146,951.00	4,146,951	0	0	-	-
303.4 MISCELLANEOUS INTANGIBLE PLANT - CRMS	5-SQ	0	682,892.55	529,083	153,810	74,811	10.96	2.1
TOTAL INTANGIBLE PLANT			94,350,257.18	57,833,599	36,516,659	3,948,205	4.18	9.3
OIL GAS FACILITIES								
305.5 STRUCTURES AND IMPROVEMENTS - OTHER	FULLY ACCRUED		13,156.00	13,814	0	0	-	-
311.7 LIQUEFIED PETROLEUM GAS EQUIPMENT	FULLY ACCRUED		4,033.00	8,066	(4,033)	0	-	-
311.8 LIQUEFIED PETROLEUM GAS EQUIPMENT	FULLY ACCRUED		4,209.00	6,585	(2,376)	0	-	-
TOTAL OIL GAS FACILITIES			21,398.00	28,465	(6,409)	0	-	-
OTHER PRODUCTION FACILITIES								
305.11 STRUCTURES AND IMPROVEMENTS - GAS PRODUCTION	FULLY ACCRUED		8,320.00	8,736	0	0	-	-
305.17 STRUCTURES AND IMPROVEMENTS - MIXING STATION	FULLY ACCRUED		46,587.00	51,246	0	0	-	-
318.3 LIGHT OIL REFINING	FULLY ACCRUED		144,896.00	152,141	0	0	-	-
318.5 TAR PROCESSING	FULLY ACCRUED		243,551.00	255,729	0	0	-	-
319 GAS MIXING EQUIPMENT	FULLY ACCRUED		185,448.00	194,720	0	0	-	-
TOTAL OTHER PRODUCTION FACILITIES			628,802.00	662,672	0	0	-	-
UNDERGROUND STORAGE PLANT								
350.2 LAND RIGHTS	70-R4	0	109,624.94	25,143	84,482	1,567	1.43	53.9
351 STRUCTURES AND IMPROVEMENTS	60-R3	0	7,208,244.63	2,542,655	4,665,590	107,894	1.50	43.2
352 WELLS	50-S3	0	36,987,527.47	14,224,099	22,763,428	659,295	1.78	34.5
352.1 STORAGE LEASEHOLDS AND RIGHTS	55-S2	0	3,939,511.52	1,516,997	2,422,515	65,713	1.67	36.9
352.2 RESERVOIRS	50-S2.5	0	10,834,054.54	2,976,187	7,857,868	219,452	2.03	35.8
352.3 NONRECOVERABLE GAS	55-S2.5	0	6,440,889.82	3,198,707	3,242,183	101,043	1.57	32.1
353 LINES	55-S2.5	(15)	8,201,963.89	3,226,474	6,205,784	168,887	2.06	36.7
354.1 COMPRESSOR STATION EQUIPMENT - TURBINE 1	50-R3	(10)	4,154,699.66	2,919,205	1,650,965	62,642	1.51	26.4
354.2 COMPRESSOR STATION EQUIPMENT - TURBINE 2	50-R3	(10)	4,154,699.66	2,992,842	1,577,327	61,470	1.48	25.7
354.3 COMPRESSOR STATION EQUIPMENT - TURBINE 3	50-R3	(10)	19,640,514.36	8,920,990	12,683,576	364,670	1.86	34.8
354.4 COMPRESSOR STATION EQUIPMENT - TURBINE 4	50-R3	(10)	13,667,705.75	5,164,074	9,870,402	284,382	1.93	37.3
354.5 COMPRESSOR STATION EQUIPMENT - TURBINE 5	50-R3	(10)	2,587,036.93	733,310	2,112,431	51,933	2.01	40.7
354.6 COMPRESSOR STATION EQUIPMENT - TURBINE 6	50-R3	(10)	257,302.38	3,732	279,301	5,641	2.19	49.5
355 MEASURING AND REGULATING EQUIPMENT	45-S2	(10)	15,967,871.63	5,996,064	11,568,595	362,161	2.27	31.9
356 PURIFICATION EQUIPMENT	45-S2.5	(5)	297,363.00	217,696	94,535	4,086	1.37	23.1
357 OTHER EQUIPMENT	30-R4	0	1,395,284.93	805,728	589,557	30,288	2.17	19.5
TOTAL UNDERGROUND STORAGE PLANT			135,844,294.45	55,463,903	87,668,539	2,531,124	1.86	34.6

NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2015

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST (4)	BOOK DEPRECIATION RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	ANNUAL ACCRUAL RATE (8)=(7)/(4)	COMPOSITE REMAINING LIFE (9)=(6)/(7)
LOCAL STORAGE PLANT								
361	STRUCTURES AND IMPROVEMENTS							
	LINNTON							
	NEWPORT		4,594,791.02	1,929,918	2,894,613	189,063	4.11	15.3
	OTHER	(5)	4,656,739.38	2,393,826	2,495,750	222,637	4.78	11.2
	55-S2	(5)	26,757.00	10,494	17,601	520	1.94	33.8
	TOTAL STRUCTURES AND IMPROVEMENTS		9,278,287.40	4,334,238	5,407,964	412,220	4.44	13.1
362	GAS HOLDERS							
	LINNTON							
	NEWPORT	(20)	2,744,403.58	2,262,406	1,030,878	70,773	2.58	14.6
	OTHER	(20)	5,791,956.36	5,438,575	1,511,773	140,857	2.43	10.7
	60-R3	(20)	1,600.14	1,172	748	16	1.00	46.8
	TOTAL GAS HOLDERS		8,537,960.08	7,702,153	2,543,399	211,646	2.48	12.0
363.1	LIQUEFACTION EQUIPMENT							
	LINNTON							
	NEWPORT	(5)	2,975,510.33	2,549,869	574,417	39,027	1.31	14.7
	50-R1.5	(5)	7,308,110.69	7,127,677	545,839	49,060	0.67	11.1
	TOTAL LIQUEFACTION EQUIPMENT		10,283,621.02	9,677,546	1,120,256	88,087	0.86	12.7
363.2	VAPORIZING EQUIPMENT							
	LINNTON							
	NEWPORT	(5)	2,683,660.37	2,624,711	193,132	12,582	0.47	15.3
	50-S2.5	(5)	3,664,362.12	2,612,391	1,235,189	113,272	3.09	10.9
	TOTAL VAPORIZING EQUIPMENT		6,348,022.49	5,237,102	1,428,321	125,854	1.98	11.4
363.3	COMPRESSOR EQUIPMENT							
	LINNTON							
	NEWPORT	(5)	180,903.23	206,897	(16,949)	0	-	-
	30-R1.5	(5)	1,390,925.55	312,641	1,147,831	105,495	7.58	10.9
	TOTAL COMPRESSOR EQUIPMENT		1,571,828.78	519,538	1,130,882	105,495	6.71	10.7
363.4	MEASURING AND REGULATING EQUIPMENT							
	LINNTON							
	NEWPORT	(5)	1,247,664.71	604,263	705,785	49,779	3.99	14.2
	45-R2.5	(5)	113,414.00	117,469	1,616	151	0.13	10.7
	TOTAL MEASURING AND REGULATING EQUIPMENT		1,361,078.71	721,732	707,401	49,930	3.67	14.2
363.5	CNG REFUELING FACILITIES	(5)	3,051,295.49	1,328,797	1,875,063	80,014	2.62	23.4
363.6	LNG REFUELING FACILITIES	(5)	739,473.00	739,473	36,974	1,732	0.23	21.3
	TOTAL LOCAL STORAGE PLANT		41,171,566.97	30,260,579	14,250,260	1,074,978	2.61	13.3

NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2015

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST (4)	BOOK DEPRECIATION RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	ANNUAL ACCRA RATE (8)=(7)/(4)	COMPOSITE REMAINING LIFE (9)=(6)/(7)
TRANSMISSION PLANT								
365.2	LAND RIGHTS	0	6,455,176.86	1,764,329	4,690,848	98,229	1.52	47.8
366.3	STRUCTURES AND IMPROVEMENTS	0	1,041,984.12	276,967	765,017	18,234	1.75	42.0
367	MAINS	(40)	146,337,788.55	23,351,961	181,520,943	3,022,252	2.07	60.1
367.21	MAINS - NORTH MIST	(40)	1,994,582.39	1,029,831	1,762,584	38,829	1.95	45.4
367.22	MAINS - SOUTH MIST	(40)	14,949,264.00	9,933,703	10,995,267	274,288	1.83	40.1
367.23	MAINS - SOUTH MIST	(40)	34,881,341.36	11,826,299	37,007,579	748,049	2.14	49.5
367.24	MAINS - 11.7M S MIST	(40)	17,466,181.89	4,819,695	19,632,960	371,274	2.14	52.9
367.25	MAINS - 12M NORTH S MIST	(40)	18,613,651.15	4,821,672	21,237,440	398,330	2.14	53.3
367.26	MAINS - 38M NORTH S MIST	(40)	68,232,675.58	17,873,936	77,651,810	1,456,882	2.14	53.3
368	COMPRESSOR STATION EQUIPMENT	(5)	7,723,454.21	1,848,512	6,261,115	186,033	2.15	37.7
369	MEASURING AND REGULATING EQUIPMENT	(10)	3,969,550.28	1,338,603	3,027,902	86,995	2.19	34.8
	TOTAL TRANSMISSION PLANT		321,665,650.39	78,885,508	364,553,465	6,679,395	2.08	54.6
DISTRIBUTION PLANT								
374.2	LAND RIGHTS	0	1,883,762.30	1,279,056	604,706	10,532	0.56	57.4
375	STRUCTURES AND IMPROVEMENTS	0	80,217.00	80,217	0	0	-	-
376.11	MAINS - HP 4" AND LESS	(75)	550,688,047.46	299,268,830	664,437,003	13,961,139	2.54	47.6
376.12	MAINS - HP 4" AND OVER	(60)	505,679,049.03	200,807,579	608,278,899	12,145,768	2.40	50.1
377	COMPRESSOR STATION EQUIPMENT	(5)	818,380.00	611,329	247,970	10,843	1.32	22.9
378	MEASURING AND REGULATING STATION EQUIPMENT - GENERAL	(20)	31,676,138.08	10,827,326	27,184,040	691,959	2.18	39.3
379	MEASURING AND REGULATING STATION EQUIPMENT - CITY GATE	(20)	5,738,811.13	1,784,838	5,101,735	121,789	2.12	41.9
380	SERVICES	(80)	710,138,948.30	376,515,207	901,734,900	20,348,276	2.87	44.3
381	METERS	0	83,691,721.21	21,166,102	62,525,619	1,866,437	2.23	33.5
381.1	METERS - ELECTRIC	0	1,541,674.51	984,268	557,407	44,491	2.89	12.5
381.2	METERS - ERT	0	40,477,375.90	16,571,371	23,906,005	2,368,813	5.85	10.1
382	METER INSTALLATIONS	0	59,749,260.42	8,829,443	50,919,817	2,890,225	4.84	17.6
382.1	METER INSTALLATIONS - ELECTRIC	0	481,019.77	40,534	440,486	41,438	8.61	10.6
382.2	METER INSTALLATIONS - ERT	0	9,473,169.55	4,397,914	5,075,356	444,359	4.69	11.4
383	HOUSE REGULATORS	0	1,484,677.80	170,017	1,314,661	43,339	2.92	30.3
387.1	OTHER EQUIPMENT - CATHODIC PROTECTION TESTING	0	173,858.98	140,475	33,384	1,433	0.82	23.3
387.2	OTHER EQUIPMENT - CALORIMETERS AT GATE STATION	0	96,424.00	96,424	0	0	-	-
387.3	OTHER EQUIPMENT - METER TESTING EQUIPMENT	0	72,671.00	72,671	0	0	-	-
	TOTAL DISTRIBUTION PLANT		2,003,946,206.44	943,643,501	2,352,361,988	54,990,841	2.74	42.8
GENERAL PLANT								
390	STRUCTURES AND IMPROVEMENTS	(5)	58,597,461.86	8,332,868	53,194,467	1,348,624	2.30	39.4
390.1	STRUCTURES AND IMPROVEMENTS - SOURCE CONTROL PLANT	(5)	18,590,294.85	2,291,003	17,228,807	403,674	2.17	42.7
391.1	OFFICE FURNITURE AND EQUIPMENT	0	3,304,510.00	3,304,510	0	0	-	-
	FULLY ACCRUED		7,123,378.41	2,400,985	4,722,393	356,208	5.00	13.3
	AMORTIZED		10,427,888.41	5,705,495	4,722,393	356,208	3.42	13.3
	TOTAL ACCOUNT 391.1				4,722,393	356,208		



NORTHWEST NATURAL GAS COMPANY

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2015

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST (4)	BOOK DEPRECIATION RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	ANNUAL ACCRUAL RATE (8)=(7)/(4)	COMPOSITE REMAINING LIFE (9)=(6)/(7)
391.2	OFFICE FURNITURE AND EQUIPMENT - COMPUTERS FULLY ACCRUED AMORTIZED TOTAL ACCOUNT 391.2	0	2,730,228.76 13,288,888.59 16,019,117.35	2,730,229 5,599,340 8,329,569	0 7,689,549 7,689,549	0 2,657,726 2,657,726	- 20.00 16.59	- 2.9 2.9
392	TRANSPORTATION EQUIPMENT STORES EQUIPMENT	10	34,498,851.10	9,599,643	21,449,323	2,367,924	6.86	9.1
393	TOOLS, SHOP AND GARAGE EQUIPMENT FULLY ACCRUED		119,406.00	119,406	0	0	-	-
394	LABORATORY EQUIPMENT FULLY ACCRUED AMORTIZED TOTAL ACCOUNT 394	0	2,898,854.00 13,834,597.86 16,733,451.86	2,898,854 6,839,875 9,738,729	0 6,994,723 6,994,723	0 553,326 553,326	- 4.00 3.31	- 12.6 12.6
395	LABORATORY EQUIPMENT FULLY ACCRUED AMORTIZED TOTAL ACCOUNT 395	0	68,016.00 277.00 68,293.00	68,016 229 68,245	0 48 48	0 14 14	- 5.00 0.02	- 3.4 3.4
396	POWER OPERATED EQUIPMENT	20	9,170,317.89	3,277,525	4,058,729	312,193	3.40	13.0
397	COMMUNICATION EQUIPMENT	0	88,322.23	38,805	49,517	5,889	6.67	8.4
397.1	COMMUNICATION EQUIPMENT - MOBILE FULLY ACCRUED AMORTIZED TOTAL ACCOUNT 397.1	0	233,223.04 242,398.13 475,621.17	233,223 191,200 424,423	0 51,198 51,198	0 24,243 24,243	- 10.00 5.10	- 2.1 2.1
397.2	COMMUNICATION EQUIPMENT - NON-MOBILE AND TELEMETER FULLY ACCRUED AMORTIZED TOTAL ACCOUNT 397.2	0	497,358.00 1,193,495.65 1,690,853.65	497,358 1,106,150 1,603,508	0 87,346 87,346	0 79,659 79,659	- 6.67 4.71	- 1.1 1.1
397.3	COMMUNICATION EQUIPMENT - TELEMETER OTHER FULLY ACCRUED AMORTIZED TOTAL ACCOUNT 397.3	0	2,567,638.00 2,121,913.71 4,689,551.71	2,567,638 765,420 3,333,058	0 1,356,494 1,356,494	0 141,569 141,569	- 6.67 3.02	- 9.6 9.6
397.4	COMMUNICATION EQUIPMENT - TELEMETER MICROWAVE FULLY ACCRUED AMORTIZED TOTAL ACCOUNT 397.4	0	497,289.79 1,149,505.47 1,646,795.26	497,290 380,830 878,120	0 768,675 768,675	0 76,634 76,634	- 6.67 4.65	- 10.0 10.0
397.5	COMMUNICATION EQUIPMENT - TELEPHONE MISCELLANEOUS EQUIPMENT - PRINT SHOP FULLY ACCRUED AMORTIZED TOTAL ACCOUNT 398.1	0	490,741.79 78,890.00 4,359.31 83,249.31	94,545 78,890 1,889 80,779	396,197 0 2,470 2,470	49,074 0 291 291	10.00 - 6.67 0.35	8.1 - 8.5 8.5

NORTHWEST NATURAL GAS COMPANY

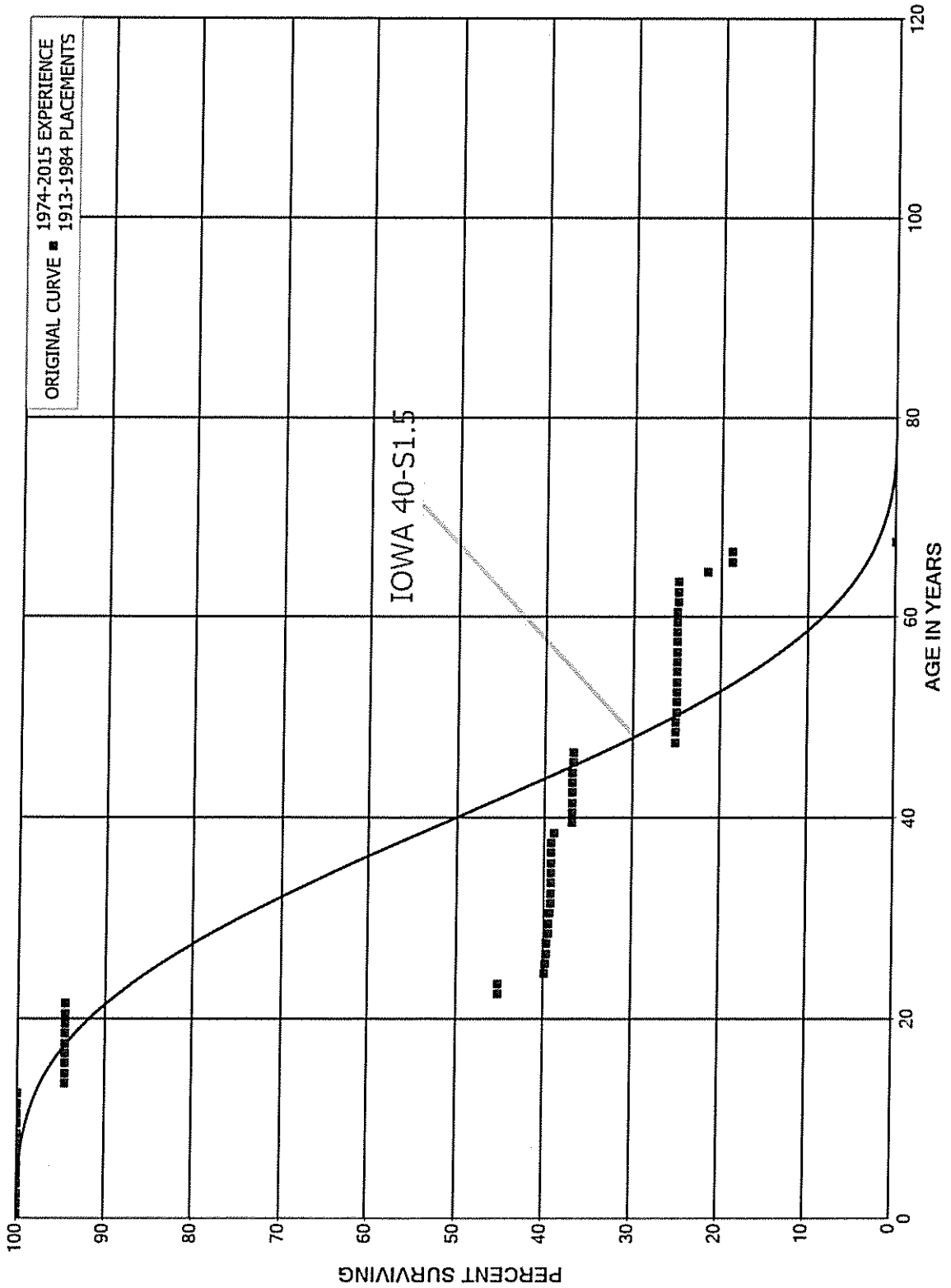
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2015

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST (4)	BOOK DEPRECIATION RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	ANNUAL ACCRUAL RATE (8)=(7)/(4)	COMPOSITE REMAINING LIFE (9)=(6)/(7)
398.2 MISCELLANEOUS EQUIPMENT - KITCHEN	15-SQ	0	12,812.44	4,700	8,112	854	6.67	9.5
398.3 MISCELLANEOUS EQUIPMENT - JANITORIAL	FULLY ACCRUED		14,873.00	14,873	0	0	-	-
398.4 MISCELLANEOUS EQUIPMENT - LEASED BUILDINGS	FULLY ACCRUED		10,120.00	10,120	0	0	-	-
398.5 MISCELLANEOUS EQUIPMENT - OTHER	FULLY ACCRUED		66,739.00	66,739	0	0	-	-
TOTAL GENERAL PLANT			173,494,761.88	54,012,153	118,058,048	8,377,902	4.83	14.1
RESERVE ADJUSTMENT FOR AMORTIZATION								
391.1 OFFICE FURNITURE AND EQUIPMENT				771,790		(154,358)	**	
391.2 OFFICE FURNITURE AND EQUIPMENT - COMPUTERS				5,011,650		(1,002,330)	**	
394.0 TOOLS, SHOP AND GARAGE EQUIPMENT				579,603		(115,121)	**	
395.0 LABORATORY EQUIPMENT				48		(10)	**	
397.0 COMMUNICATION EQUIPMENT				(11,695)		2,339	**	
397.1 COMMUNICATION EQUIPMENT - MOBILE				(20,033)		4,007	**	
397.2 COMMUNICATION EQUIPMENT - NON-MOBILE AND TELEMETER				87,346		(17,469)	**	
397.3 COMMUNICATION EQUIPMENT - TELEMETER OTHER				(341,606)		68,321	**	
397.4 COMMUNICATION EQUIPMENT - TELEPHONE				55,013		(11,003)	**	
397.5 COMMUNICATION EQUIPMENT - TELEPHONE				77,953		(15,591)	**	
398.1 MISCELLANEOUS EQUIPMENT - PRINT SHOP				2,470		(494)	**	
398.2 MISCELLANEOUS EQUIPMENT - KITCHEN				(1,614)		323	**	
TOTAL RESERVE ADJUSTMENT FOR AMORTIZATION				6,206,925		(1,241,386)		
TOTAL DEPRECIABLE GAS PLANT			2,771,122,937.31	1,226,997,205	2,973,402,550	76,361,059	2.76	38.9
NONDEPRECIABLE GAS PLANT								
301 ORGANIZATION			1,174.00					
302 FRANCHISES AND CONSENTS			83,621.00					
304.1 LAND			24,998.00					
350.1 LAND			106,549.00					
360.11 LAND - LNG LINNONTON			83,598.00					
360.12 LAND - LNG NEWPORT			536,675.00					
360.2 LAND - OTHER			106,557.00					
365.1 LAND			89,772.00					
374.1 LAND			86,775.00					
389 LAND			11,633,851.00	437,351				
TOTAL NONDEPRECIABLE GAS PLANT			12,753,570.00	437,351				
TOTAL GAS PLANT IN SERVICE			2,783,876,507.31	1,227,434,556	2,973,402,550	76,361,059		

* INDICATES INTERIM SURVIVOR CURVE. EACH UNIT HAS A UNIQUE TERMINAL DATE.
 ** 5 YEAR AMORTIZATION OF RESERVE RELATED TO AMORTIZATION ACCOUNTING.
 *** NEW ADDITIONS AS OF JANUARY 1, 2016 WILL UTILIZE AN ACCRUAL RATE CONSISTENT WITH THE AMORTIZATION PERIOD.

PART VII. SERVICE LIFE STATISTICS

NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 305.11, 305.17 AND 305.5 STRUCTURES AND IMPROVEMENTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 305.11, 305.17 AND 305.5 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1913-1984

EXPERIENCE BAND 1974-2015

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	13,156		0.0000	1.0000	100.00
0.5	13,156		0.0000	1.0000	100.00
1.5	13,156		0.0000	1.0000	100.00
2.5	13,156		0.0000	1.0000	100.00
3.5	13,156		0.0000	1.0000	100.00
4.5	13,156		0.0000	1.0000	100.00
5.5	13,156		0.0000	1.0000	100.00
6.5	14,409		0.0000	1.0000	100.00
7.5	16,221		0.0000	1.0000	100.00
8.5	16,221		0.0000	1.0000	100.00
9.5	16,221		0.0000	1.0000	100.00
10.5	24,541		0.0000	1.0000	100.00
11.5	22,729		0.0000	1.0000	100.00
12.5	22,729	1,253	0.0551	0.9449	100.00
13.5	21,476		0.0000	1.0000	94.49
14.5	21,476		0.0000	1.0000	94.49
15.5	34,048		0.0000	1.0000	94.49
16.5	34,048		0.0000	1.0000	94.49
17.5	87,775		0.0000	1.0000	94.49
18.5	88,093		0.0000	1.0000	94.49
19.5	88,420		0.0000	1.0000	94.49
20.5	163,371		0.0000	1.0000	94.49
21.5	163,715	85,500	0.5222	0.4778	94.49
22.5	78,108		0.0000	1.0000	45.14
23.5	78,545	9,163	0.1167	0.8833	45.14
24.5	69,586	211	0.0030	0.9970	39.88
25.5	69,375	327	0.0047	0.9953	39.75
26.5	94,601		0.0000	1.0000	39.57
27.5	94,601	344	0.0036	0.9964	39.57
28.5	94,257		0.0000	1.0000	39.42
29.5	94,257	437	0.0046	0.9954	39.42
30.5	93,820	204	0.0022	0.9978	39.24
31.5	81,100		0.0000	1.0000	39.15
32.5	85,425		0.0000	1.0000	39.15
33.5	85,425		0.0000	1.0000	39.15
34.5	85,425		0.0000	1.0000	39.15
35.5	85,515		0.0000	1.0000	39.15
36.5	85,515		0.0000	1.0000	39.15
37.5	85,564	640	0.0075	0.9925	39.15
38.5	85,197	4,325	0.0508	0.9492	38.86

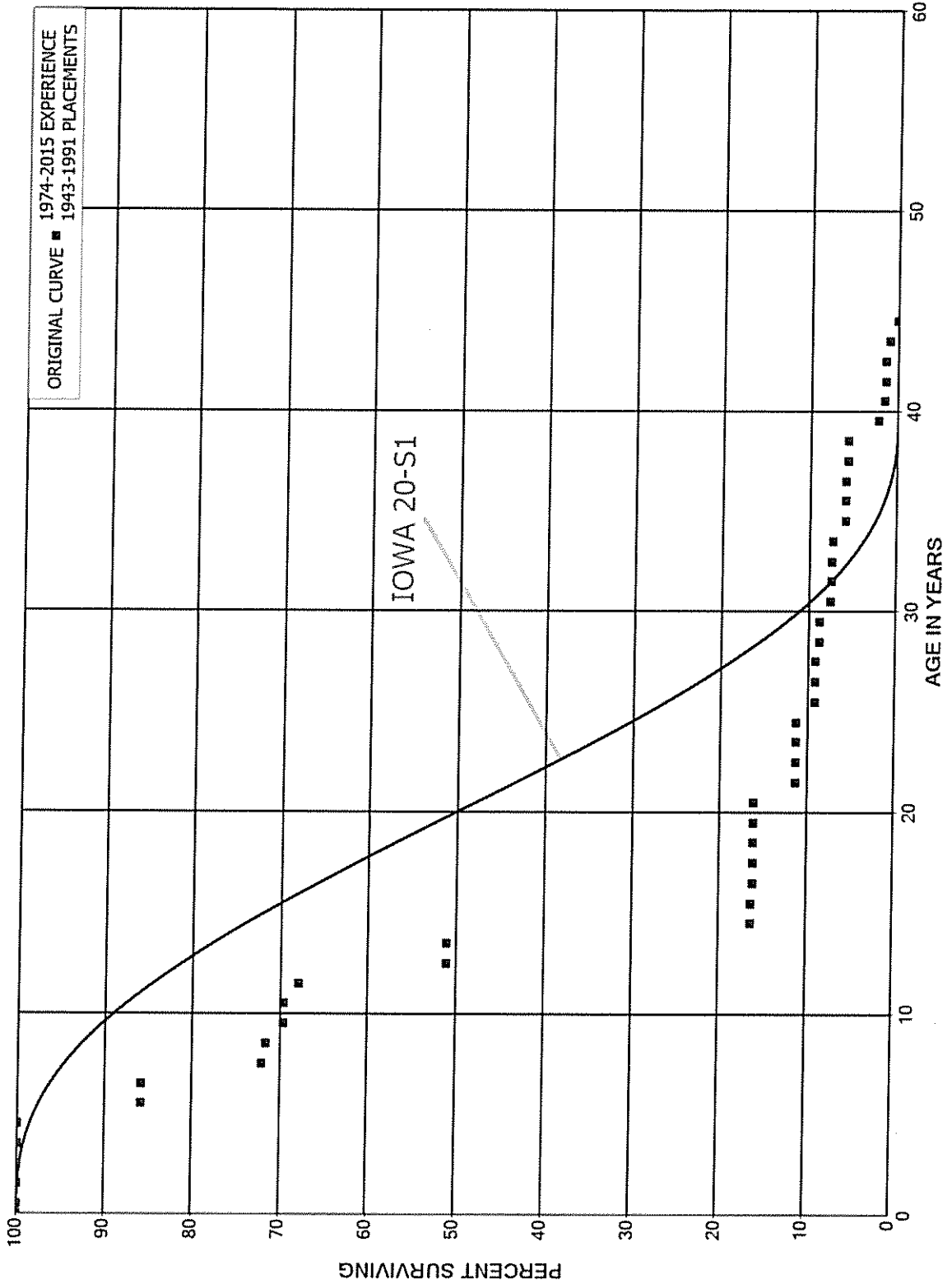
NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 305.11, 305.17 AND 305.5 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1913-1984			EXPERIENCE BAND 1974-2015		
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	80,872		0.0000	1.0000	36.89
40.5	80,872		0.0000	1.0000	36.89
41.5	80,872	90	0.0011	0.9989	36.89
42.5	83,479		0.0000	1.0000	36.85
43.5	83,749	49	0.0006	0.9994	36.85
44.5	83,700	273	0.0033	0.9967	36.83
45.5	83,427		0.0000	1.0000	36.71
46.5	80,730	25,553	0.3165	0.6835	36.71
47.5	55,177		0.0000	1.0000	25.09
48.5	55,239		0.0000	1.0000	25.09
49.5	55,239	270	0.0049	0.9951	25.09
50.5	54,969		0.0000	1.0000	24.97
51.5	54,969		0.0000	1.0000	24.97
52.5	46,649		0.0000	1.0000	24.97
53.5	46,649		0.0000	1.0000	24.97
54.5	46,666	62	0.0013	0.9987	24.97
55.5	46,604		0.0000	1.0000	24.93
56.5	46,604		0.0000	1.0000	24.93
57.5	45,598		0.0000	1.0000	24.93
58.5	46,448		0.0000	1.0000	24.93
59.5	1,884		0.0000	1.0000	24.93
60.5	7,523	17	0.0023	0.9977	24.93
61.5	7,506		0.0000	1.0000	24.88
62.5	7,506		0.0000	1.0000	24.88
63.5	7,506	1,017	0.1355	0.8645	24.88
64.5	6,489	850	0.1310	0.8690	21.51
65.5	5,639		0.0000	1.0000	18.69
66.5	5,639	5,639	1.0000		18.69
67.5					

NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 311.7 AND 311.8 LIQUEFIED PETROLEUM GAS EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 311.7 AND 311.8 LIQUEFIED PETROLEUM GAS EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1943-1991			EXPERIENCE BAND 1974-2015		
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	4,209		0.0000	1.0000	100.00
0.5	13,115		0.0000	1.0000	100.00
1.5	13,115		0.0000	1.0000	100.00
2.5	13,115		0.0000	1.0000	100.00
3.5	7,615		0.0000	1.0000	100.00
4.5	7,615	1,077	0.1414	0.8586	100.00
5.5	7,615		0.0000	1.0000	85.86
6.5	7,983	1,285	0.1610	0.8390	85.86
7.5	34,348	203	0.0059	0.9941	72.04
8.5	34,484	980	0.0284	0.9716	71.61
9.5	34,708		0.0000	1.0000	69.58
10.5	50,793	1,207	0.0238	0.9762	69.58
11.5	63,128	15,682	0.2484	0.7516	67.92
12.5	47,446		0.0000	1.0000	51.05
13.5	149,014	101,568	0.6816	0.3184	51.05
14.5	54,498		0.0000	1.0000	16.25
15.5	54,498	513	0.0094	0.9906	16.25
16.5	71,861	47	0.0007	0.9993	16.10
17.5	74,222		0.0000	1.0000	16.09
18.5	74,441		0.0000	1.0000	16.09
19.5	75,572	368	0.0049	0.9951	16.09
20.5	90,273	26,365	0.2921	0.7079	16.01
21.5	64,127	136	0.0021	0.9979	11.34
22.5	64,304		0.0000	1.0000	11.31
23.5	64,509		0.0000	1.0000	11.31
24.5	64,839	12,335	0.1902	0.8098	11.31
25.5	123,656		0.0000	1.0000	9.16
26.5	133,738		0.0000	1.0000	9.16
27.5	134,170	7,052	0.0526	0.9474	9.16
28.5	127,511		0.0000	1.0000	8.68
29.5	127,757	17,363	0.1359	0.8641	8.68
30.5	132,807	2,361	0.0178	0.9822	7.50
31.5	130,446	219	0.0017	0.9983	7.37
32.5	130,227	1,131	0.0087	0.9913	7.35
33.5	129,096	25,301	0.1960	0.8040	7.29
34.5	103,795	219	0.0021	0.9979	5.86
35.5	103,576	313	0.0030	0.9970	5.85
36.5	103,263	3,205	0.0310	0.9690	5.83
37.5	100,058	180	0.0018	0.9982	5.65
38.5	99,878	62,202	0.6228	0.3772	5.64

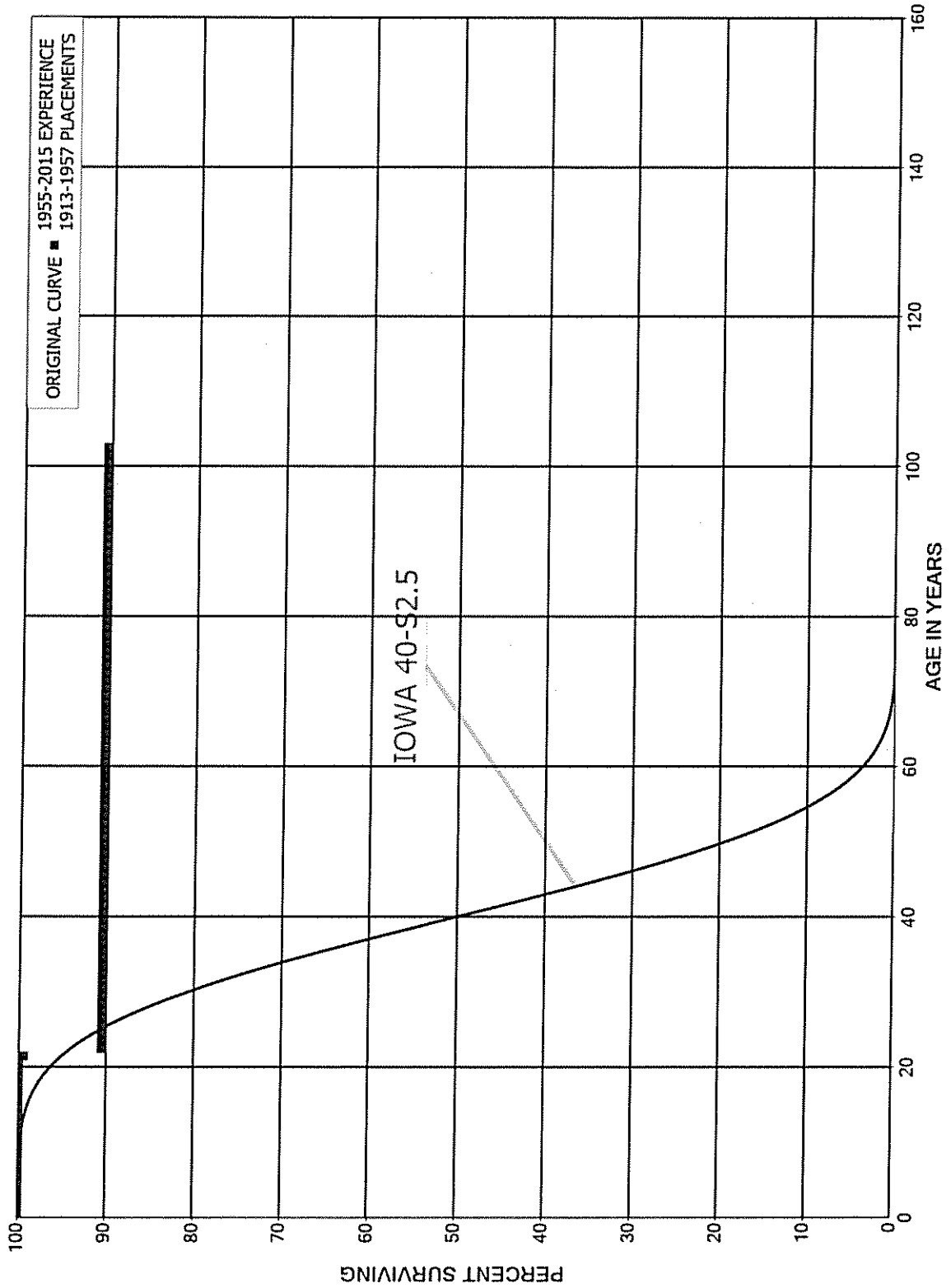
NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 311.7 AND 311.8 LIQUEFIED PETROLEUM GAS EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1943-1991			EXPERIENCE BAND 1974-2015			
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	37,676	11,900	0.3159	0.6841	2.13	
40.5	21,567	432	0.0200	0.9800	1.46	
41.5	21,135	393	0.0186	0.9814	1.43	
42.5	17,336	6,196	0.3574	0.6426	1.40	
43.5	11,140	10,513	0.9437	0.0563	0.90	
44.5	627		0.0000	1.0000	0.05	
45.5	627		0.0000	1.0000	0.05	
46.5	627		0.0000	1.0000	0.05	
47.5	627		0.0000	1.0000	0.05	
48.5	627		0.0000	1.0000	0.05	
49.5	627		0.0000	1.0000	0.05	
50.5	627		0.0000	1.0000	0.05	
51.5	403		0.0000	1.0000	0.05	
52.5					0.05	

NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 318.3 AND 318.5 RESIDUAL REFINING EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 318.3 AND 318.5 RESIDUAL REFINING EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1913-1957			EXPERIENCE BAND 1955-2015		
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	3,189		0.0000	1.0000	100.00
0.5	10,049		0.0000	1.0000	100.00
1.5	136,338		0.0000	1.0000	100.00
2.5	151,712		0.0000	1.0000	100.00
3.5	179,823		0.0000	1.0000	100.00
4.5	194,359		0.0000	1.0000	100.00
5.5	194,950		0.0000	1.0000	100.00
6.5	201,811		0.0000	1.0000	100.00
7.5	259,718		0.0000	1.0000	100.00
8.5	259,718		0.0000	1.0000	100.00
9.5	259,718		0.0000	1.0000	100.00
10.5	267,855		0.0000	1.0000	100.00
11.5	319,464		0.0000	1.0000	100.00
12.5	319,464		0.0000	1.0000	100.00
13.5	384,746		0.0000	1.0000	100.00
14.5	408,285		0.0000	1.0000	100.00
15.5	408,285		0.0000	1.0000	100.00
16.5	408,285		0.0000	1.0000	100.00
17.5	408,285	263	0.0006	0.9994	100.00
18.5	408,022		0.0000	1.0000	99.94
19.5	408,022		0.0000	1.0000	99.94
20.5	408,022	2,294	0.0056	0.9944	99.94
21.5	405,728	36,343	0.0896	0.9104	99.37
22.5	369,385		0.0000	1.0000	90.47
23.5	369,385		0.0000	1.0000	90.47
24.5	369,385		0.0000	1.0000	90.47
25.5	369,385		0.0000	1.0000	90.47
26.5	369,385		0.0000	1.0000	90.47
27.5	369,385		0.0000	1.0000	90.47
28.5	376,125		0.0000	1.0000	90.47
29.5	376,125		0.0000	1.0000	90.47
30.5	376,125		0.0000	1.0000	90.47
31.5	384,419		0.0000	1.0000	90.47
32.5	384,419		0.0000	1.0000	90.47
33.5	384,419		0.0000	1.0000	90.47
34.5	384,419		0.0000	1.0000	90.47
35.5	384,419		0.0000	1.0000	90.47
36.5	384,419		0.0000	1.0000	90.47
37.5	384,419		0.0000	1.0000	90.47
38.5	384,419		0.0000	1.0000	90.47

NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 318.3 AND 318.5 RESIDUAL REFINING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1913-1957			EXPERIENCE BAND 1955-2015		
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	384,419		0.0000	1.0000	90.47
40.5	384,419		0.0000	1.0000	90.47
41.5	388,447		0.0000	1.0000	90.47
42.5	388,447		0.0000	1.0000	90.47
43.5	388,447		0.0000	1.0000	90.47
44.5	388,447		0.0000	1.0000	90.47
45.5	388,447		0.0000	1.0000	90.47
46.5	388,447		0.0000	1.0000	90.47
47.5	388,447		0.0000	1.0000	90.47
48.5	388,447		0.0000	1.0000	90.47
49.5	388,447		0.0000	1.0000	90.47
50.5	388,447		0.0000	1.0000	90.47
51.5	388,447		0.0000	1.0000	90.47
52.5	388,447		0.0000	1.0000	90.47
53.5	388,447		0.0000	1.0000	90.47
54.5	388,447		0.0000	1.0000	90.47
55.5	388,447		0.0000	1.0000	90.47
56.5	388,447		0.0000	1.0000	90.47
57.5	388,447		0.0000	1.0000	90.47
58.5	387,494		0.0000	1.0000	90.47
59.5	387,331		0.0000	1.0000	90.47
60.5	385,521		0.0000	1.0000	90.47
61.5	380,955		0.0000	1.0000	90.47
62.5	291,009		0.0000	1.0000	90.47
63.5	275,635		0.0000	1.0000	90.47
64.5	247,524		0.0000	1.0000	90.47
65.5	232,988		0.0000	1.0000	90.47
66.5	232,397		0.0000	1.0000	90.47
67.5	225,536		0.0000	1.0000	90.47
68.5	167,629		0.0000	1.0000	90.47
69.5	167,629		0.0000	1.0000	90.47
70.5	167,629		0.0000	1.0000	90.47
71.5	159,492		0.0000	1.0000	90.47
72.5	107,883		0.0000	1.0000	90.47
73.5	107,883		0.0000	1.0000	90.47
74.5	42,601		0.0000	1.0000	90.47
75.5	19,062		0.0000	1.0000	90.47
76.5	19,062		0.0000	1.0000	90.47
77.5	19,062		0.0000	1.0000	90.47
78.5	19,062		0.0000	1.0000	90.47

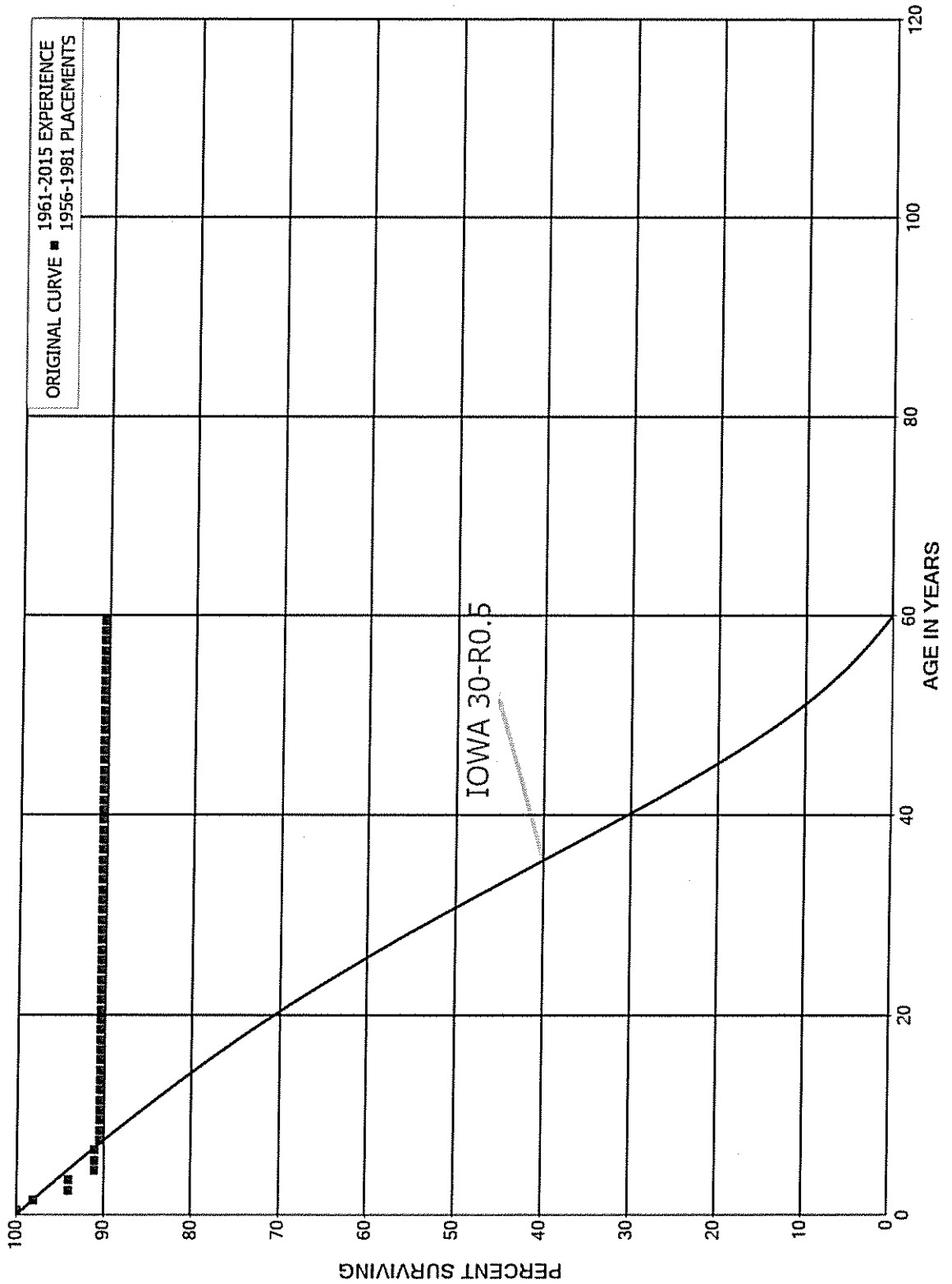
NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 318.3 AND 318.5 RESIDUAL REFINING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1913-1957			EXPERIENCE BAND 1955-2015		
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	19,062		0.0000	1.0000	90.47
80.5	19,062		0.0000	1.0000	90.47
81.5	19,062		0.0000	1.0000	90.47
82.5	19,062		0.0000	1.0000	90.47
83.5	19,062		0.0000	1.0000	90.47
84.5	19,062		0.0000	1.0000	90.47
85.5	19,062		0.0000	1.0000	90.47
86.5	19,062		0.0000	1.0000	90.47
87.5	19,062		0.0000	1.0000	90.47
88.5	19,062		0.0000	1.0000	90.47
89.5	12,322		0.0000	1.0000	90.47
90.5	12,322		0.0000	1.0000	90.47
91.5	12,322		0.0000	1.0000	90.47
92.5	4,028		0.0000	1.0000	90.47
93.5	4,028		0.0000	1.0000	90.47
94.5	4,028		0.0000	1.0000	90.47
95.5	4,028		0.0000	1.0000	90.47
96.5	4,028		0.0000	1.0000	90.47
97.5	4,028		0.0000	1.0000	90.47
98.5	4,028		0.0000	1.0000	90.47
99.5	4,028		0.0000	1.0000	90.47
100.5	4,028		0.0000	1.0000	90.47
101.5	4,028		0.0000	1.0000	90.47
102.5					90.47

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 319 GAS MIXING EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY
ACCOUNT 319 GAS MIXING EQUIPMENT

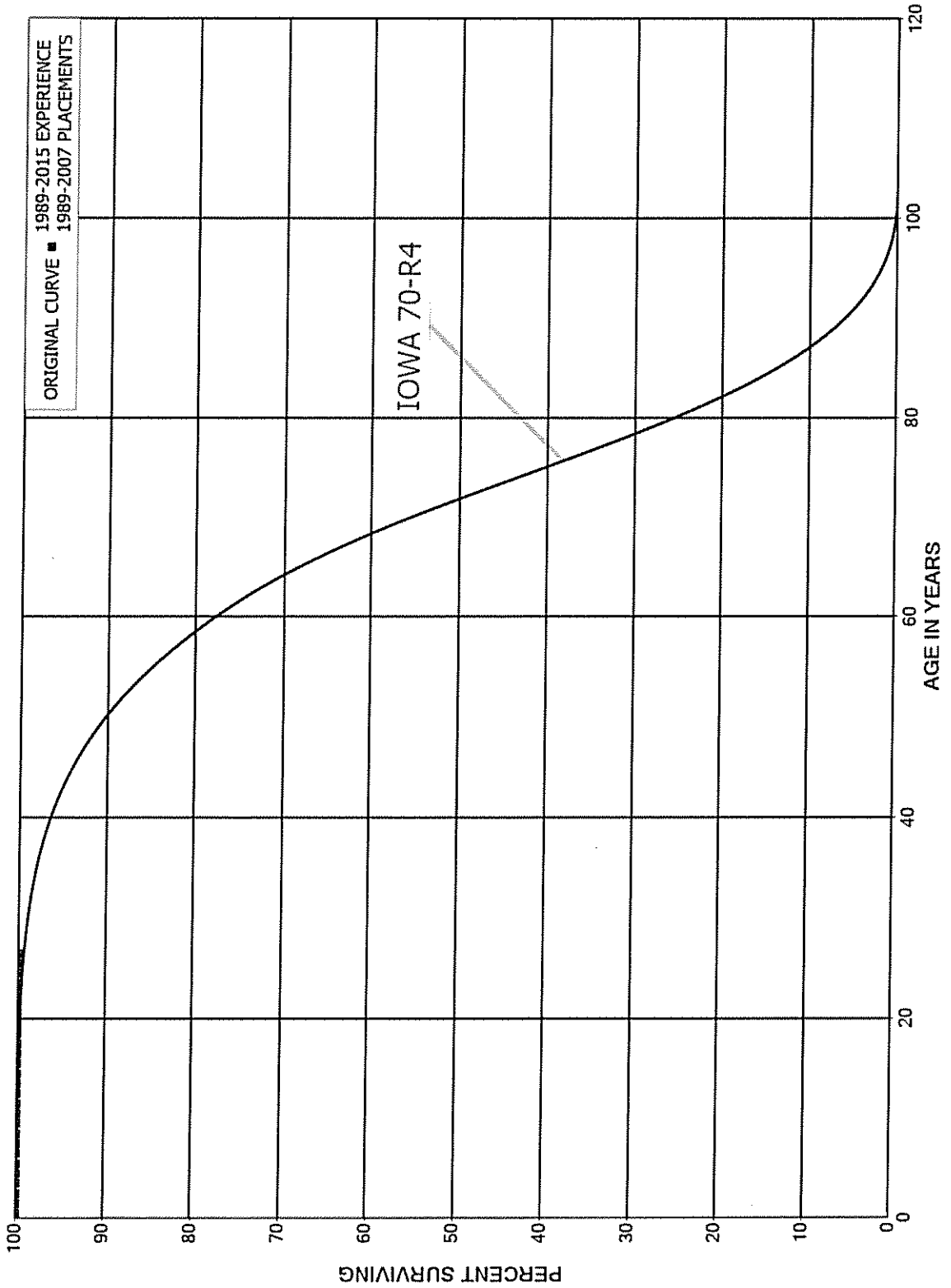
ORIGINAL LIFE TABLE

PLACEMENT BAND 1956-1981			EXPERIENCE BAND 1961-2015		
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	18,655		0.0000	1.0000	100.00
0.5	18,932	376	0.0199	0.9801	100.00
1.5	19,149	770	0.0402	0.9598	98.01
2.5	24,885		0.0000	1.0000	94.07
3.5	40,405	1,300	0.0322	0.9678	94.07
4.5	185,448		0.0000	1.0000	91.05
5.5	185,448		0.0000	1.0000	91.05
6.5	185,448	1,025	0.0055	0.9945	91.05
7.5	185,448		0.0000	1.0000	90.54
8.5	185,448		0.0000	1.0000	90.54
9.5	185,448		0.0000	1.0000	90.54
10.5	185,448		0.0000	1.0000	90.54
11.5	185,448		0.0000	1.0000	90.54
12.5	185,448		0.0000	1.0000	90.54
13.5	185,448		0.0000	1.0000	90.54
14.5	185,448		0.0000	1.0000	90.54
15.5	185,448		0.0000	1.0000	90.54
16.5	185,448		0.0000	1.0000	90.54
17.5	185,448		0.0000	1.0000	90.54
18.5	185,448		0.0000	1.0000	90.54
19.5	185,448		0.0000	1.0000	90.54
20.5	185,448		0.0000	1.0000	90.54
21.5	185,448		0.0000	1.0000	90.54
22.5	185,448		0.0000	1.0000	90.54
23.5	185,448		0.0000	1.0000	90.54
24.5	185,448		0.0000	1.0000	90.54
25.5	185,448		0.0000	1.0000	90.54
26.5	185,448		0.0000	1.0000	90.54
27.5	185,448		0.0000	1.0000	90.54
28.5	185,448		0.0000	1.0000	90.54
29.5	185,448		0.0000	1.0000	90.54
30.5	185,448		0.0000	1.0000	90.54
31.5	185,448		0.0000	1.0000	90.54
32.5	185,448		0.0000	1.0000	90.54
33.5	185,448		0.0000	1.0000	90.54
34.5	181,891		0.0000	1.0000	90.54
35.5	169,470		0.0000	1.0000	90.54
36.5	169,470		0.0000	1.0000	90.54
37.5	169,470		0.0000	1.0000	90.54
38.5	169,470		0.0000	1.0000	90.54

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 319 GAS MIXING EQUIPMENT
 ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1956-1981			EXPERIENCE BAND 1961-2015		
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	169,470		0.0000	1.0000	90.54
40.5	169,470		0.0000	1.0000	90.54
41.5	169,470		0.0000	1.0000	90.54
42.5	169,470		0.0000	1.0000	90.54
43.5	169,470		0.0000	1.0000	90.54
44.5	169,470		0.0000	1.0000	90.54
45.5	169,470		0.0000	1.0000	90.54
46.5	169,470		0.0000	1.0000	90.54
47.5	169,470		0.0000	1.0000	90.54
48.5	169,381		0.0000	1.0000	90.54
49.5	169,381		0.0000	1.0000	90.54
50.5	169,381		0.0000	1.0000	90.54
51.5	168,460		0.0000	1.0000	90.54
52.5	168,460		0.0000	1.0000	90.54
53.5	166,793		0.0000	1.0000	90.54
54.5	166,793		0.0000	1.0000	90.54
55.5	166,516		0.0000	1.0000	90.54
56.5	166,299		0.0000	1.0000	90.54
57.5	160,563		0.0000	1.0000	90.54
58.5	145,043		0.0000	1.0000	90.54
59.5					90.54

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 350.2 LAND RIGHTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 350.2 LAND RIGHTS

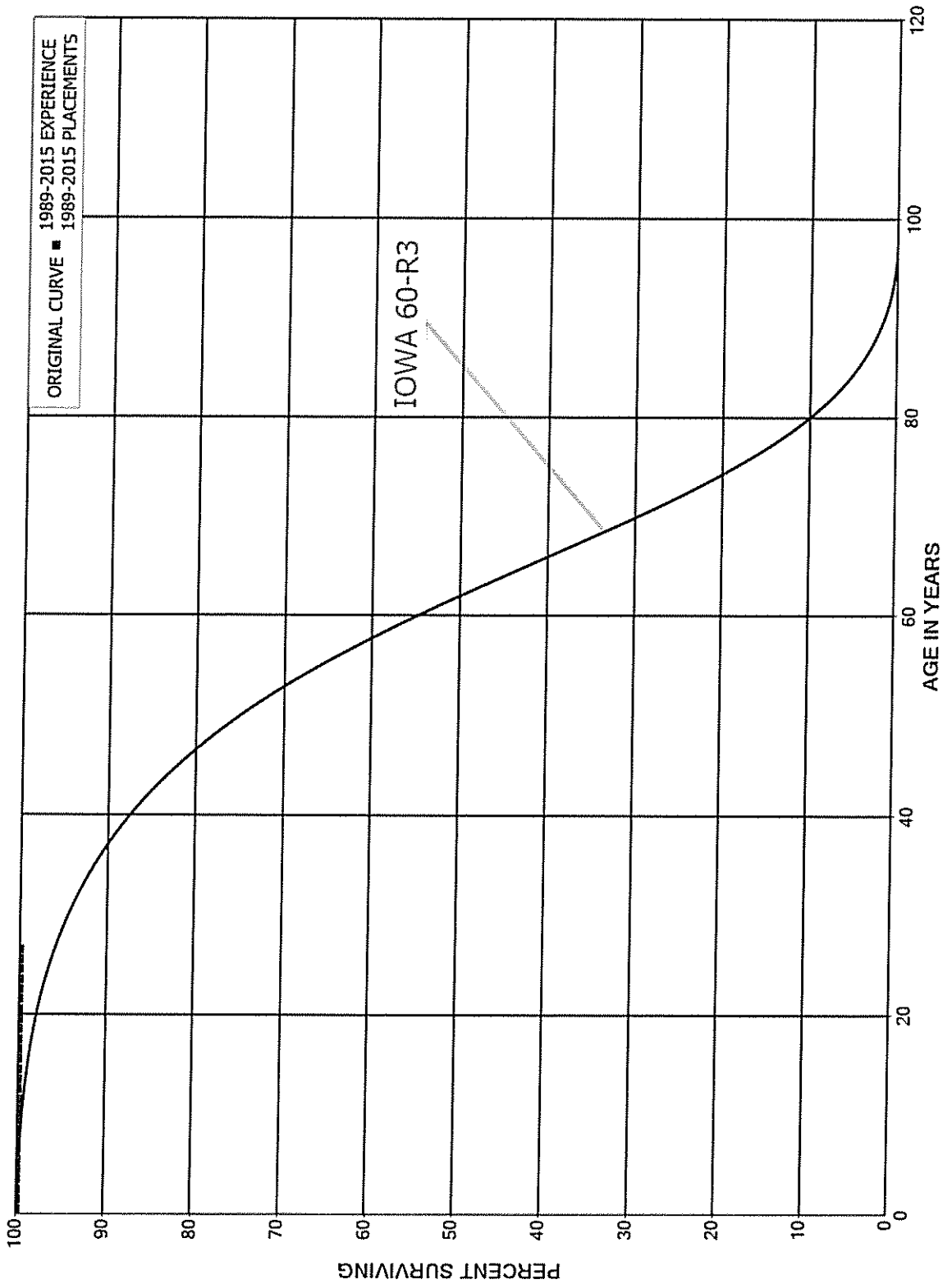
ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-2007

EXPERIENCE BAND 1989-2015

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	109,625		0.0000	1.0000	100.00
0.5	109,625		0.0000	1.0000	100.00
1.5	109,625		0.0000	1.0000	100.00
2.5	109,625		0.0000	1.0000	100.00
3.5	109,625		0.0000	1.0000	100.00
4.5	109,625		0.0000	1.0000	100.00
5.5	109,625		0.0000	1.0000	100.00
6.5	109,625		0.0000	1.0000	100.00
7.5	109,625		0.0000	1.0000	100.00
8.5	51,122		0.0000	1.0000	100.00
9.5	51,122		0.0000	1.0000	100.00
10.5	51,122		0.0000	1.0000	100.00
11.5	51,122		0.0000	1.0000	100.00
12.5	51,122		0.0000	1.0000	100.00
13.5	51,122		0.0000	1.0000	100.00
14.5	47,318		0.0000	1.0000	100.00
15.5	47,318		0.0000	1.0000	100.00
16.5	47,318		0.0000	1.0000	100.00
17.5	46,690		0.0000	1.0000	100.00
18.5	46,505		0.0000	1.0000	100.00
19.5	46,505		0.0000	1.0000	100.00
20.5	46,505		0.0000	1.0000	100.00
21.5	46,105		0.0000	1.0000	100.00
22.5	40,841		0.0000	1.0000	100.00
23.5	40,841		0.0000	1.0000	100.00
24.5	40,841		0.0000	1.0000	100.00
25.5	40,841		0.0000	1.0000	100.00
26.5					100.00

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 351 STRUCTURES AND IMPROVEMENTS
 ORIGINAL AND SMOOTH SURVIVOR CURVES

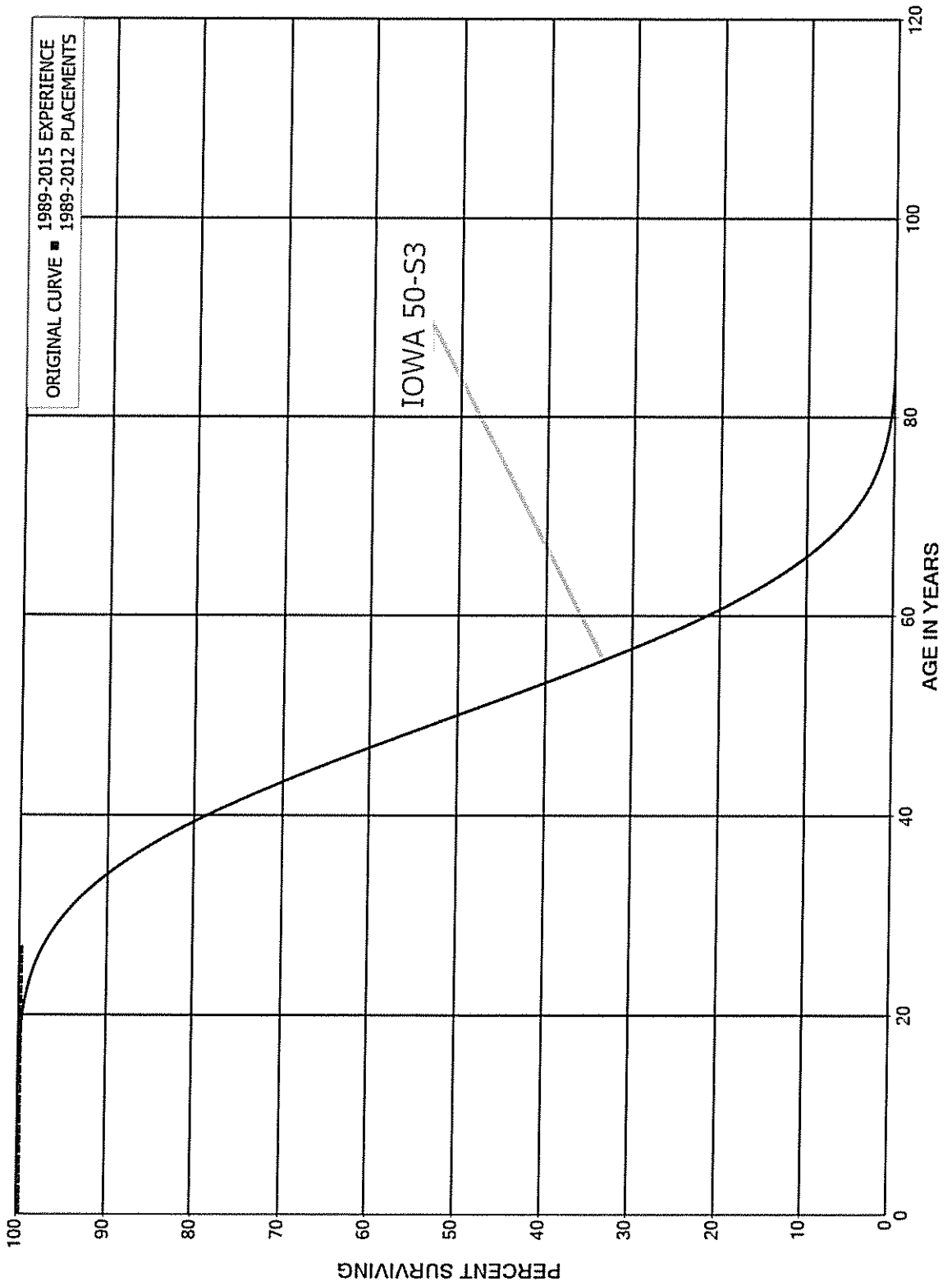


NORTHWEST NATURAL GAS COMPANY
ACCOUNT 351 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-2015			EXPERIENCE BAND 1989-2015		
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	7,224,441		0.0000	1.0000	100.00
0.5	7,158,036		0.0000	1.0000	100.00
1.5	6,715,064		0.0000	1.0000	100.00
2.5	6,715,064		0.0000	1.0000	100.00
3.5	6,555,425		0.0000	1.0000	100.00
4.5	6,555,425		0.0000	1.0000	100.00
5.5	6,542,426		0.0000	1.0000	100.00
6.5	6,538,592		0.0000	1.0000	100.00
7.5	6,247,670		0.0000	1.0000	100.00
8.5	6,247,670		0.0000	1.0000	100.00
9.5	6,247,670		0.0000	1.0000	100.00
10.5	6,247,546		0.0000	1.0000	100.00
11.5	6,173,312		0.0000	1.0000	100.00
12.5	6,156,413		0.0000	1.0000	100.00
13.5	5,913,514		0.0000	1.0000	100.00
14.5	5,029,273		0.0000	1.0000	100.00
15.5	4,996,462		0.0000	1.0000	100.00
16.5	4,991,499		0.0000	1.0000	100.00
17.5	2,516,340		0.0000	1.0000	100.00
18.5	2,516,340		0.0000	1.0000	100.00
19.5	2,516,340		0.0000	1.0000	100.00
20.5	2,480,692		0.0000	1.0000	100.00
21.5	2,467,430		0.0000	1.0000	100.00
22.5	2,464,204		0.0000	1.0000	100.00
23.5	2,422,299		0.0000	1.0000	100.00
24.5	2,146,801		0.0000	1.0000	100.00
25.5	2,101,010		0.0000	1.0000	100.00
26.5					100.00

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 352 WELLS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 352 WELLS

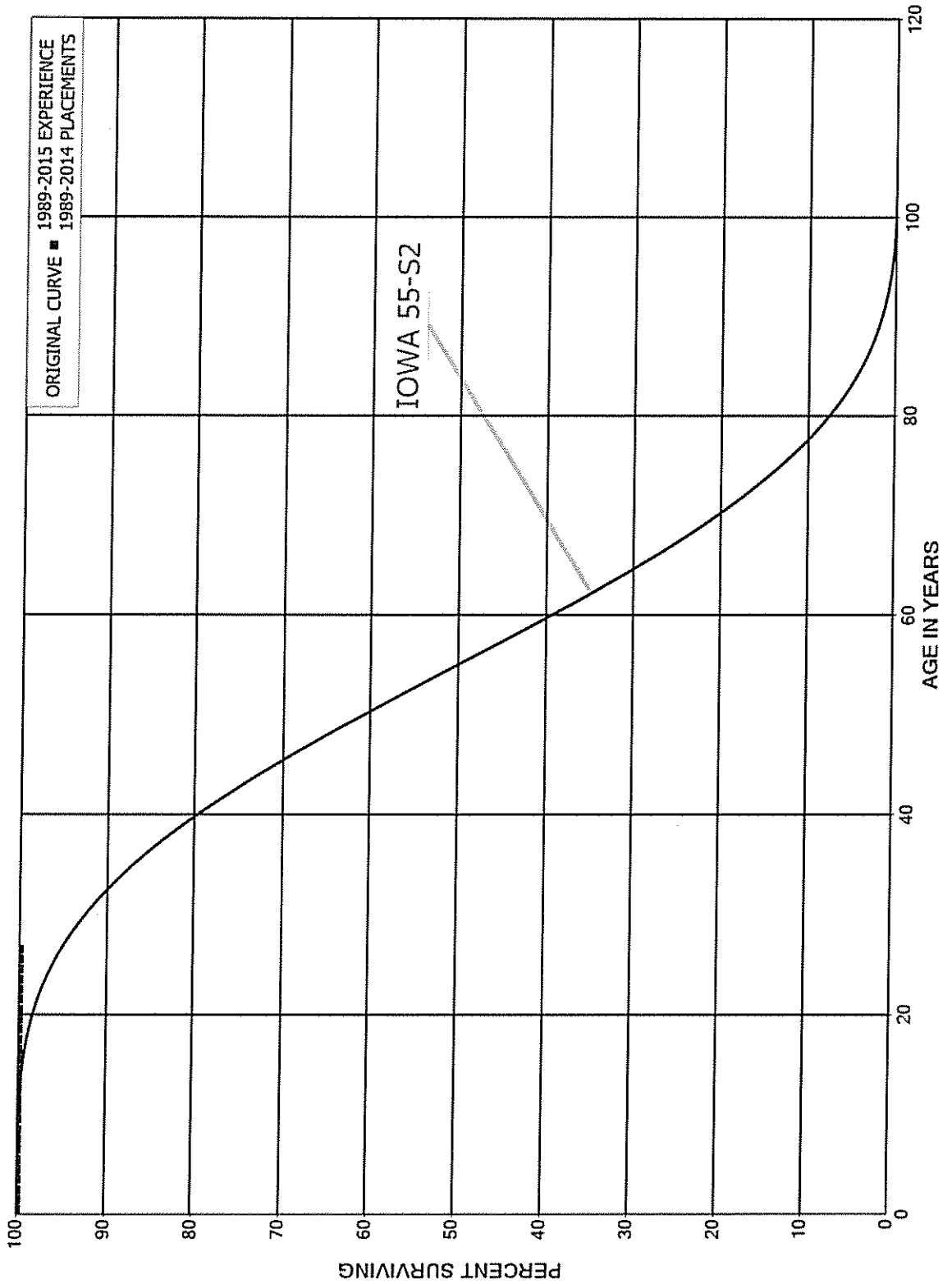
ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-2012

EXPERIENCE BAND 1989-2015

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	38,798,739		0.0000	1.0000	100.00
0.5	36,887,918		0.0000	1.0000	100.00
1.5	36,887,918		0.0000	1.0000	100.00
2.5	36,987,527		0.0000	1.0000	100.00
3.5	36,970,027		0.0000	1.0000	100.00
4.5	36,970,027		0.0000	1.0000	100.00
5.5	36,970,027		0.0000	1.0000	100.00
6.5	36,138,659		0.0000	1.0000	100.00
7.5	36,138,659		0.0000	1.0000	100.00
8.5	27,363,189		0.0000	1.0000	100.00
9.5	27,363,189		0.0000	1.0000	100.00
10.5	23,510,122		0.0000	1.0000	100.00
11.5	18,383,091		0.0000	1.0000	100.00
12.5	18,338,288		0.0000	1.0000	100.00
13.5	18,338,288		0.0000	1.0000	100.00
14.5	18,138,203		0.0000	1.0000	100.00
15.5	18,138,203		0.0000	1.0000	100.00
16.5	18,138,203		0.0000	1.0000	100.00
17.5	11,810,679		0.0000	1.0000	100.00
18.5	11,810,679		0.0000	1.0000	100.00
19.5	11,810,679		0.0000	1.0000	100.00
20.5	11,810,679		0.0000	1.0000	100.00
21.5	11,808,321		0.0000	1.0000	100.00
22.5	11,625,429		0.0000	1.0000	100.00
23.5	11,474,852		0.0000	1.0000	100.00
24.5	9,469,844		0.0000	1.0000	100.00
25.5	8,933,762		0.0000	1.0000	100.00
26.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 352.1 STORAGE LEASEHOLDS AND RIGHTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 352.1 STORAGE LEASEHOLDS AND RIGHTS

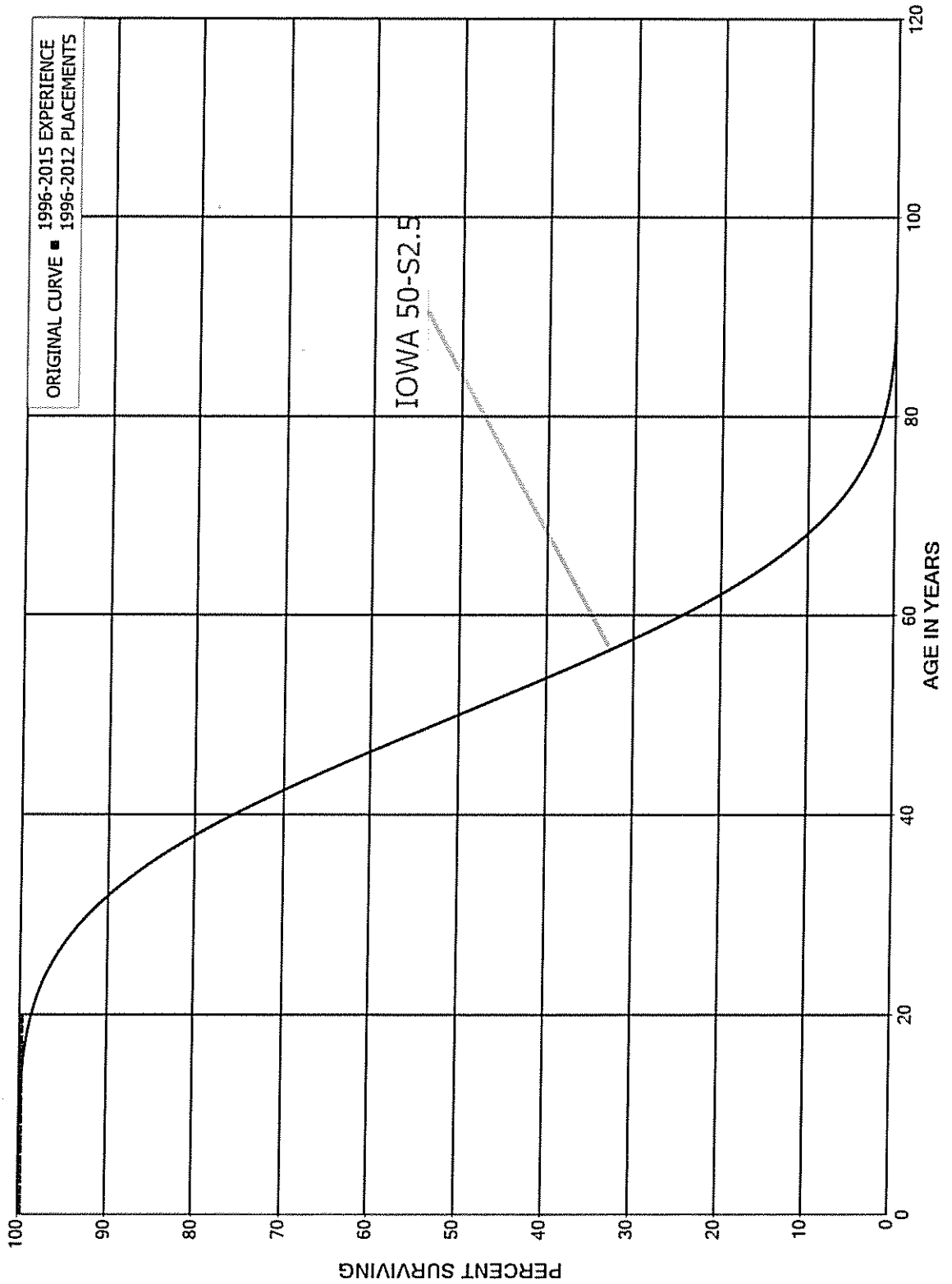
ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-2014

EXPERIENCE BAND 1989-2015

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	3,939,513		0.0000	1.0000	100.00
0.5	3,939,512		0.0000	1.0000	100.00
1.5	3,539,512		0.0000	1.0000	100.00
2.5	3,539,512		0.0000	1.0000	100.00
3.5	3,539,512		0.0000	1.0000	100.00
4.5	3,539,512		0.0000	1.0000	100.00
5.5	3,539,512		0.0000	1.0000	100.00
6.5	3,539,512		0.0000	1.0000	100.00
7.5	3,539,512		0.0000	1.0000	100.00
8.5	3,539,512		0.0000	1.0000	100.00
9.5	3,539,512		0.0000	1.0000	100.00
10.5	3,539,512		0.0000	1.0000	100.00
11.5	3,538,491		0.0000	1.0000	100.00
12.5	3,538,491		0.0000	1.0000	100.00
13.5	3,535,500		0.0000	1.0000	100.00
14.5	3,535,500		0.0000	1.0000	100.00
15.5	3,535,500		0.0000	1.0000	100.00
16.5	3,530,407		0.0000	1.0000	100.00
17.5	3,038,080		0.0000	1.0000	100.00
18.5	1,448,101		0.0000	1.0000	100.00
19.5	1,210,801		0.0000	1.0000	100.00
20.5	1,210,801		0.0000	1.0000	100.00
21.5	1,210,801		0.0000	1.0000	100.00
22.5	1,210,800		0.0000	1.0000	100.00
23.5	1,210,800		0.0000	1.0000	100.00
24.5	1,210,800		0.0000	1.0000	100.00
25.5	1,210,800		0.0000	1.0000	100.00
26.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 352.2 RESERVOIRS
ORIGINAL AND SMOOTH SURVIVOR CURVES



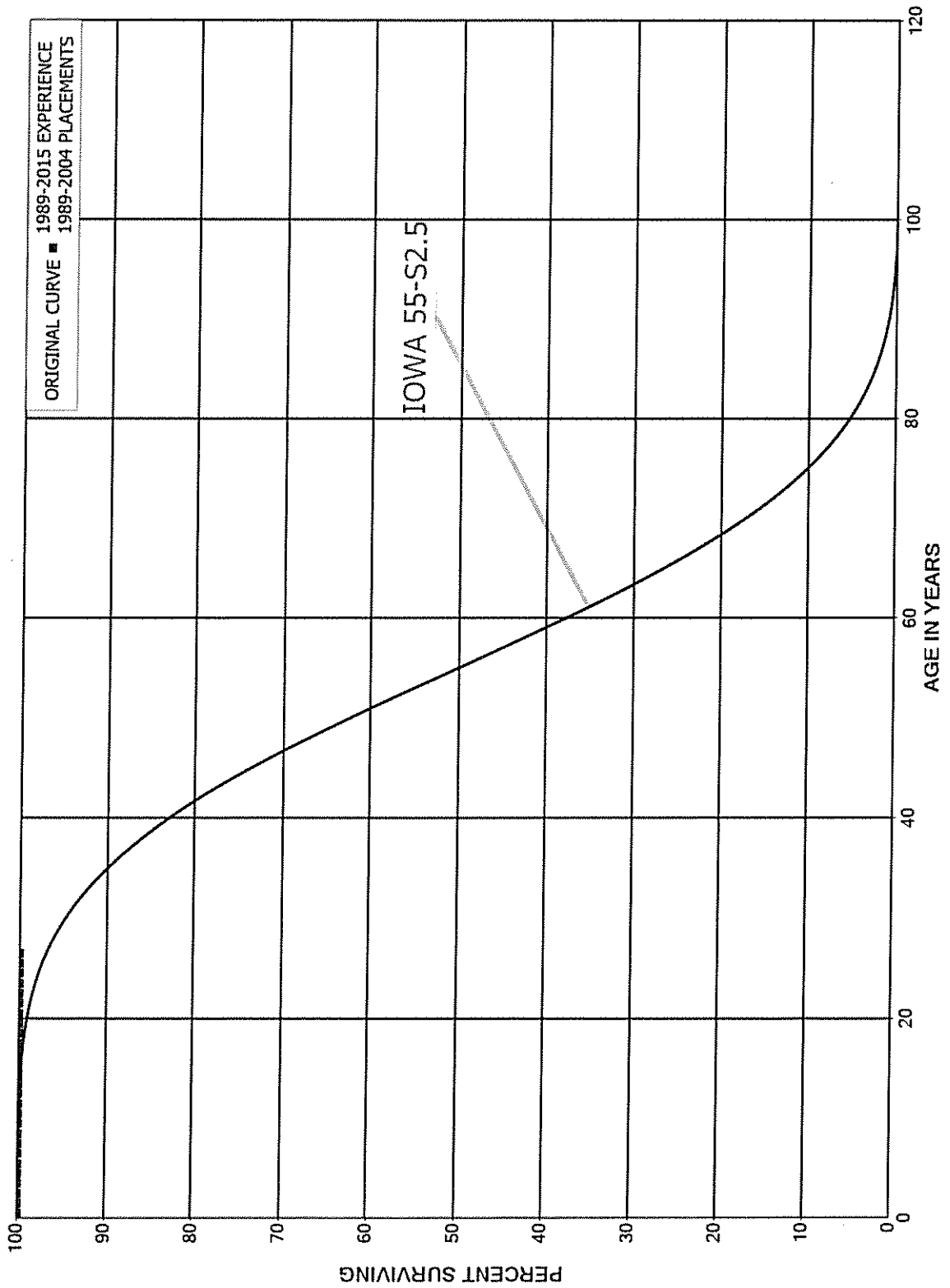
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 352.2 RESERVOIRS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1996-2012			EXPERIENCE BAND 1996-2015		
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	7,303,798		0.0000	1.0000	100.00
0.5	7,303,798		0.0000	1.0000	100.00
1.5	7,303,798		0.0000	1.0000	100.00
2.5	9,211,060		0.0000	1.0000	100.00
3.5	9,193,560		0.0000	1.0000	100.00
4.5	10,816,555		0.0000	1.0000	100.00
5.5	10,816,555		0.0000	1.0000	100.00
6.5	10,816,555		0.0000	1.0000	100.00
7.5	10,816,555		0.0000	1.0000	100.00
8.5	10,816,555		0.0000	1.0000	100.00
9.5	10,816,555		0.0000	1.0000	100.00
10.5	8,371,537		0.0000	1.0000	100.00
11.5	7,159,166		0.0000	1.0000	100.00
12.5	7,159,166		0.0000	1.0000	100.00
13.5	5,308,281		0.0000	1.0000	100.00
14.5	5,308,281		0.0000	1.0000	100.00
15.5	3,685,094		0.0000	1.0000	100.00
16.5	3,679,091		0.0000	1.0000	100.00
17.5	1,679,184		0.0000	1.0000	100.00
18.5	1,679,184		0.0000	1.0000	100.00
19.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 352.3 NONRECOVERABLE GAS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY
ACCOUNT 352.3 NONRECOVERABLE GAS

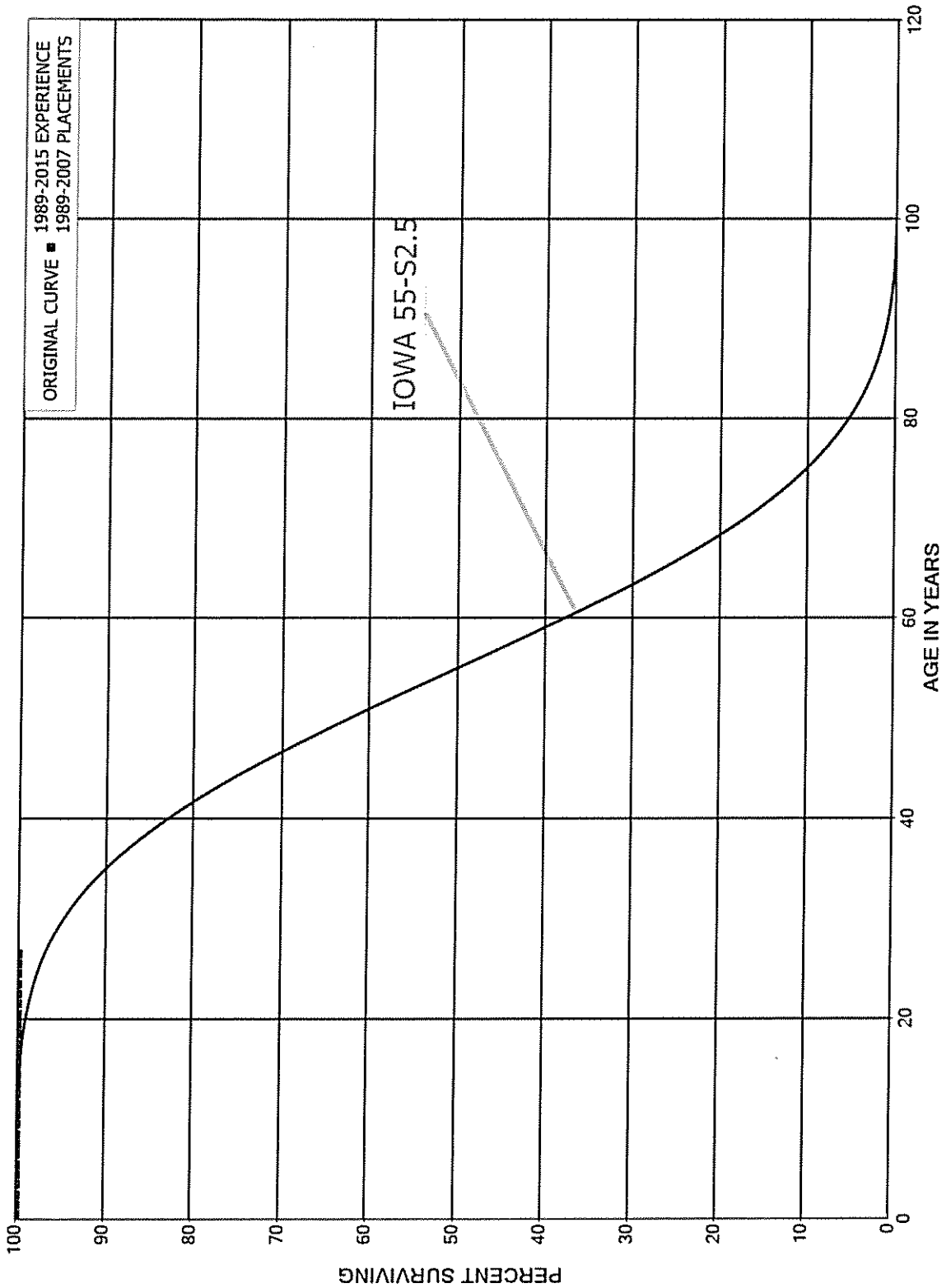
ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-2004

EXPERIENCE BAND 1989-2015

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	6,440,891		0.0000	1.0000	100.00
0.5	6,440,890		0.0000	1.0000	100.00
1.5	6,440,890		0.0000	1.0000	100.00
2.5	6,440,890		0.0000	1.0000	100.00
3.5	6,440,890		0.0000	1.0000	100.00
4.5	6,440,890		0.0000	1.0000	100.00
5.5	6,440,890		0.0000	1.0000	100.00
6.5	6,440,890		0.0000	1.0000	100.00
7.5	6,440,890		0.0000	1.0000	100.00
8.5	6,440,890		0.0000	1.0000	100.00
9.5	6,440,890		0.0000	1.0000	100.00
10.5	6,440,890		0.0000	1.0000	100.00
11.5	6,375,402		0.0000	1.0000	100.00
12.5	6,375,402		0.0000	1.0000	100.00
13.5	6,375,402		0.0000	1.0000	100.00
14.5	6,375,402		0.0000	1.0000	100.00
15.5	6,375,402		0.0000	1.0000	100.00
16.5	6,375,402		0.0000	1.0000	100.00
17.5	6,312,953		0.0000	1.0000	100.00
18.5	6,312,953		0.0000	1.0000	100.00
19.5	4,057,953		0.0000	1.0000	100.00
20.5	4,057,953		0.0000	1.0000	100.00
21.5	4,057,953		0.0000	1.0000	100.00
22.5	4,057,952		0.0000	1.0000	100.00
23.5	4,057,952		0.0000	1.0000	100.00
24.5	4,057,952		0.0000	1.0000	100.00
25.5	4,057,952		0.0000	1.0000	100.00
26.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 353 LINES
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 353 LINES

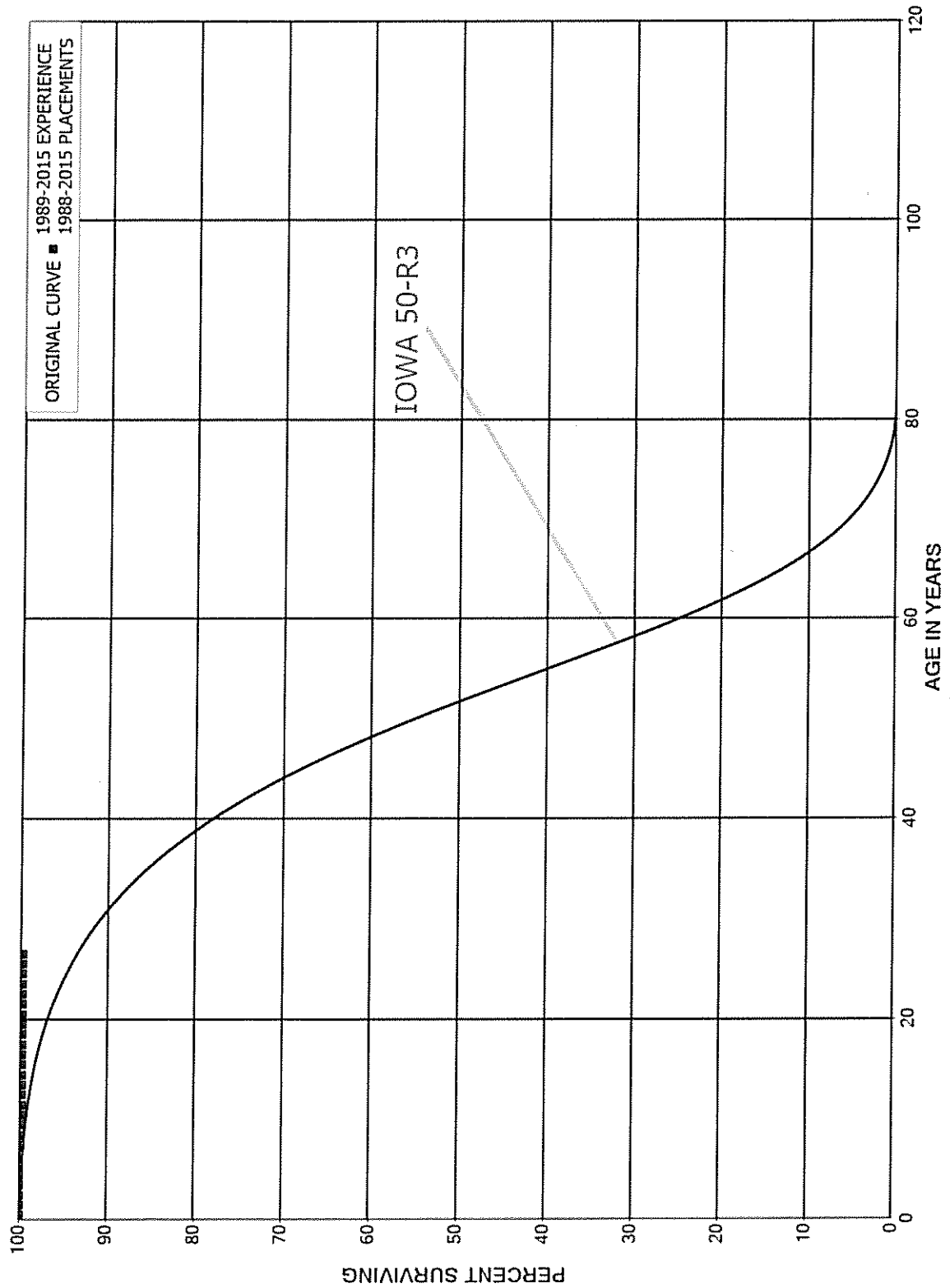
ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-2007

EXPERIENCE BAND 1989-2015

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	8,233,451		0.0000	1.0000	100.00
0.5	8,233,450		0.0000	1.0000	100.00
1.5	8,201,964		0.0000	1.0000	100.00
2.5	8,201,964		0.0000	1.0000	100.00
3.5	8,201,964		0.0000	1.0000	100.00
4.5	8,201,964		0.0000	1.0000	100.00
5.5	8,201,964		0.0000	1.0000	100.00
6.5	8,201,964		0.0000	1.0000	100.00
7.5	8,201,964		0.0000	1.0000	100.00
8.5	7,641,810		0.0000	1.0000	100.00
9.5	7,641,810		0.0000	1.0000	100.00
10.5	7,137,450		0.0000	1.0000	100.00
11.5	6,453,175		0.0000	1.0000	100.00
12.5	6,445,334		0.0000	1.0000	100.00
13.5	6,445,334		0.0000	1.0000	100.00
14.5	6,445,334		0.0000	1.0000	100.00
15.5	6,445,334		0.0000	1.0000	100.00
16.5	6,392,472		0.0000	1.0000	100.00
17.5	2,538,843		0.0000	1.0000	100.00
18.5	2,538,843		0.0000	1.0000	100.00
19.5	2,538,843		0.0000	1.0000	100.00
20.5	2,538,843		0.0000	1.0000	100.00
21.5	2,538,843		0.0000	1.0000	100.00
22.5	2,538,842		0.0000	1.0000	100.00
23.5	2,538,842		0.0000	1.0000	100.00
24.5	2,521,353		0.0000	1.0000	100.00
25.5	2,521,353		0.0000	1.0000	100.00
26.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 354.1 THROUGH 354.6 COMPRESSOR STATION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



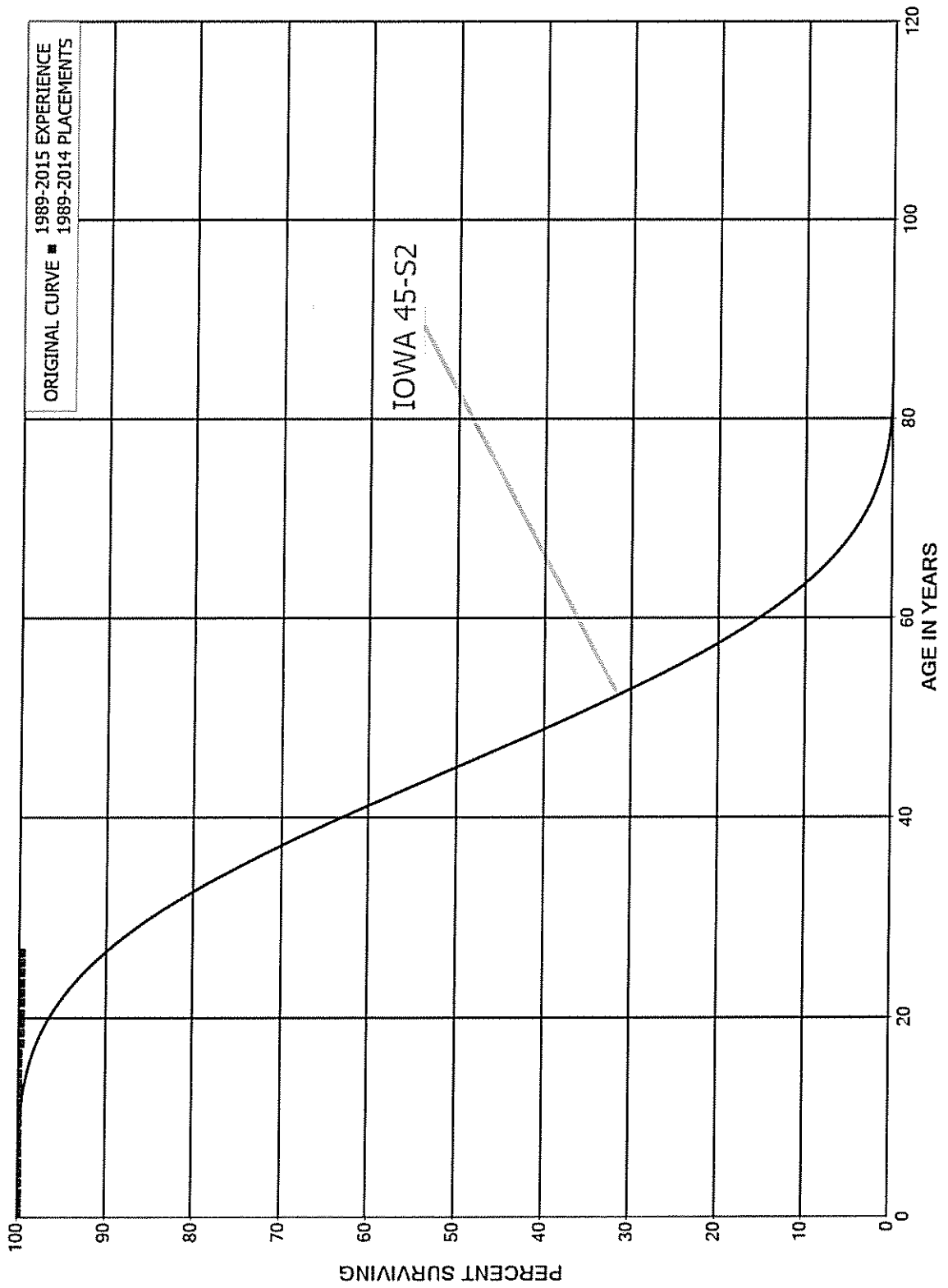
NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 354.1 THROUGH 354.6 COMPRESSOR STATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1988-2015			EXPERIENCE BAND 1989-2015		
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	33,808,089		0.0000	1.0000	100.00
0.5	33,590,499		0.0000	1.0000	100.00
1.5	33,614,964	31,012	0.0009	0.9991	100.00
2.5	31,881,070		0.0000	1.0000	99.91
3.5	40,119,361		0.0000	1.0000	99.91
4.5	41,542,492		0.0000	1.0000	99.91
5.5	41,522,362		0.0000	1.0000	99.91
6.5	41,452,820	51,212	0.0012	0.9988	99.91
7.5	41,270,344		0.0000	1.0000	99.78
8.5	41,270,344		0.0000	1.0000	99.78
9.5	41,270,344	23,443	0.0006	0.9994	99.78
10.5	41,246,901		0.0000	1.0000	99.73
11.5	37,859,557		0.0000	1.0000	99.73
12.5	37,838,420		0.0000	1.0000	99.73
13.5	37,708,174		0.0000	1.0000	99.73
14.5	27,720,702		0.0000	1.0000	99.73
15.5	21,911,652		0.0000	1.0000	99.73
16.5	21,816,930		0.0000	1.0000	99.73
17.5	8,143,343		0.0000	1.0000	99.73
18.5	8,124,254		0.0000	1.0000	99.73
19.5	8,121,118		0.0000	1.0000	99.73
20.5	8,004,748		0.0000	1.0000	99.73
21.5	7,997,100		0.0000	1.0000	99.73
22.5	7,993,959		0.0000	1.0000	99.73
23.5	7,952,213		0.0000	1.0000	99.73
24.5	7,813,027		0.0000	1.0000	99.73
25.5	7,702,081		0.0000	1.0000	99.73
26.5					99.73

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 355 MEASURING AND REGULATING EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



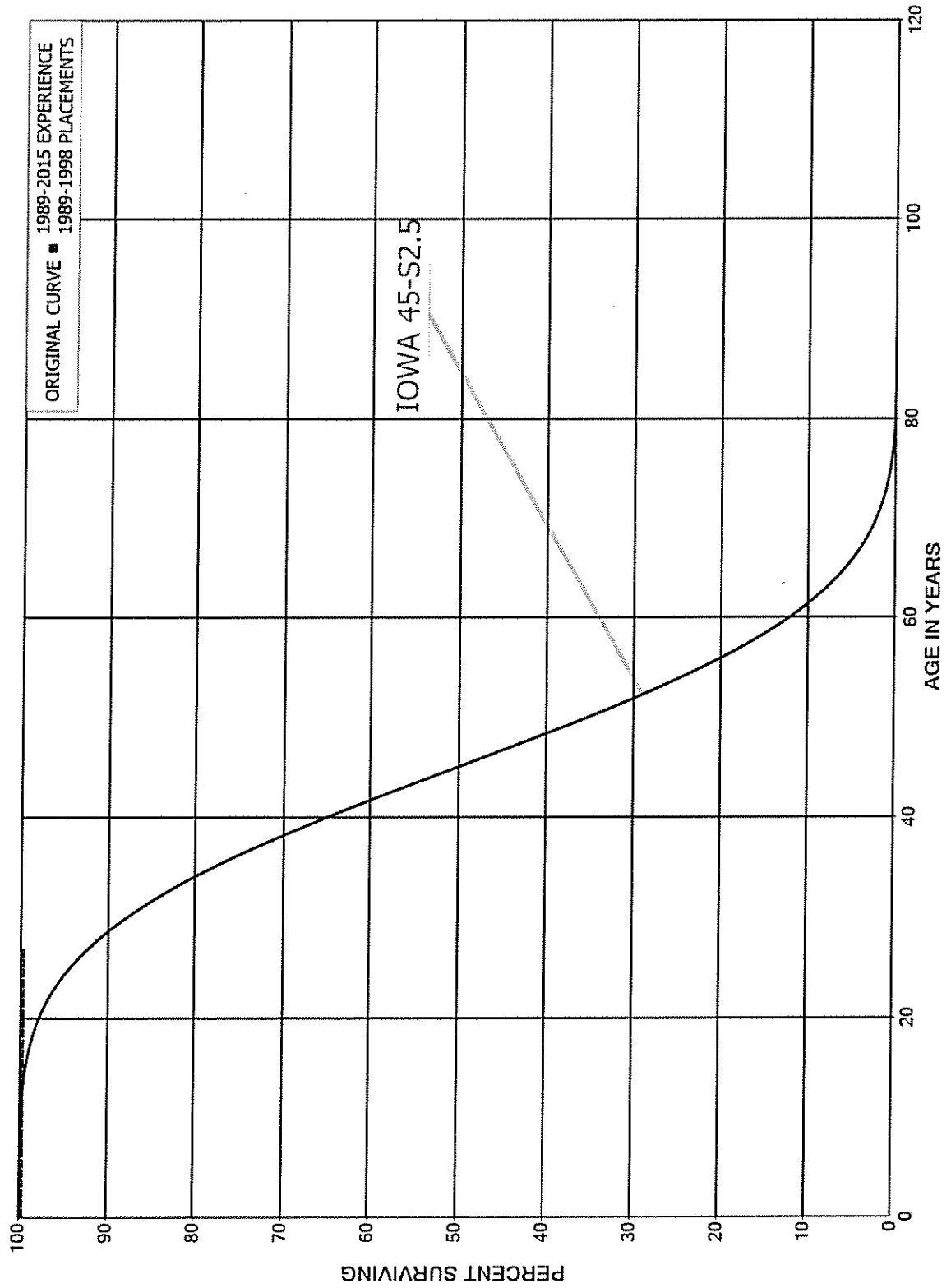
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 355 MEASURING AND REGULATING EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-2014			EXPERIENCE BAND 1989-2015		
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	15,786,173		0.0000	1.0000	100.00
0.5	14,434,297		0.0000	1.0000	100.00
1.5	14,067,675		0.0000	1.0000	100.00
2.5	14,345,950		0.0000	1.0000	100.00
3.5	14,722,198		0.0000	1.0000	100.00
4.5	14,990,953		0.0000	1.0000	100.00
5.5	14,990,953		0.0000	1.0000	100.00
6.5	14,990,953		0.0000	1.0000	100.00
7.5	14,783,950		0.0000	1.0000	100.00
8.5	9,699,149		0.0000	1.0000	100.00
9.5	9,556,019		0.0000	1.0000	100.00
10.5	7,764,400		0.0000	1.0000	100.00
11.5	6,933,772		0.0000	1.0000	100.00
12.5	6,933,772		0.0000	1.0000	100.00
13.5	6,655,000		0.0000	1.0000	100.00
14.5	6,212,402		0.0000	1.0000	100.00
15.5	4,950,253		0.0000	1.0000	100.00
16.5	4,711,612	15,249	0.0032	0.9968	100.00
17.5	3,606,243		0.0000	1.0000	99.68
18.5	3,606,243		0.0000	1.0000	99.68
19.5	3,590,871		0.0000	1.0000	99.68
20.5	3,581,013		0.0000	1.0000	99.68
21.5	3,580,978		0.0000	1.0000	99.68
22.5	3,579,193		0.0000	1.0000	99.68
23.5	3,561,374		0.0000	1.0000	99.68
24.5	3,539,964		0.0000	1.0000	99.68
25.5	3,473,015		0.0000	1.0000	99.68
26.5					99.68

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 356 PURIFICATION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



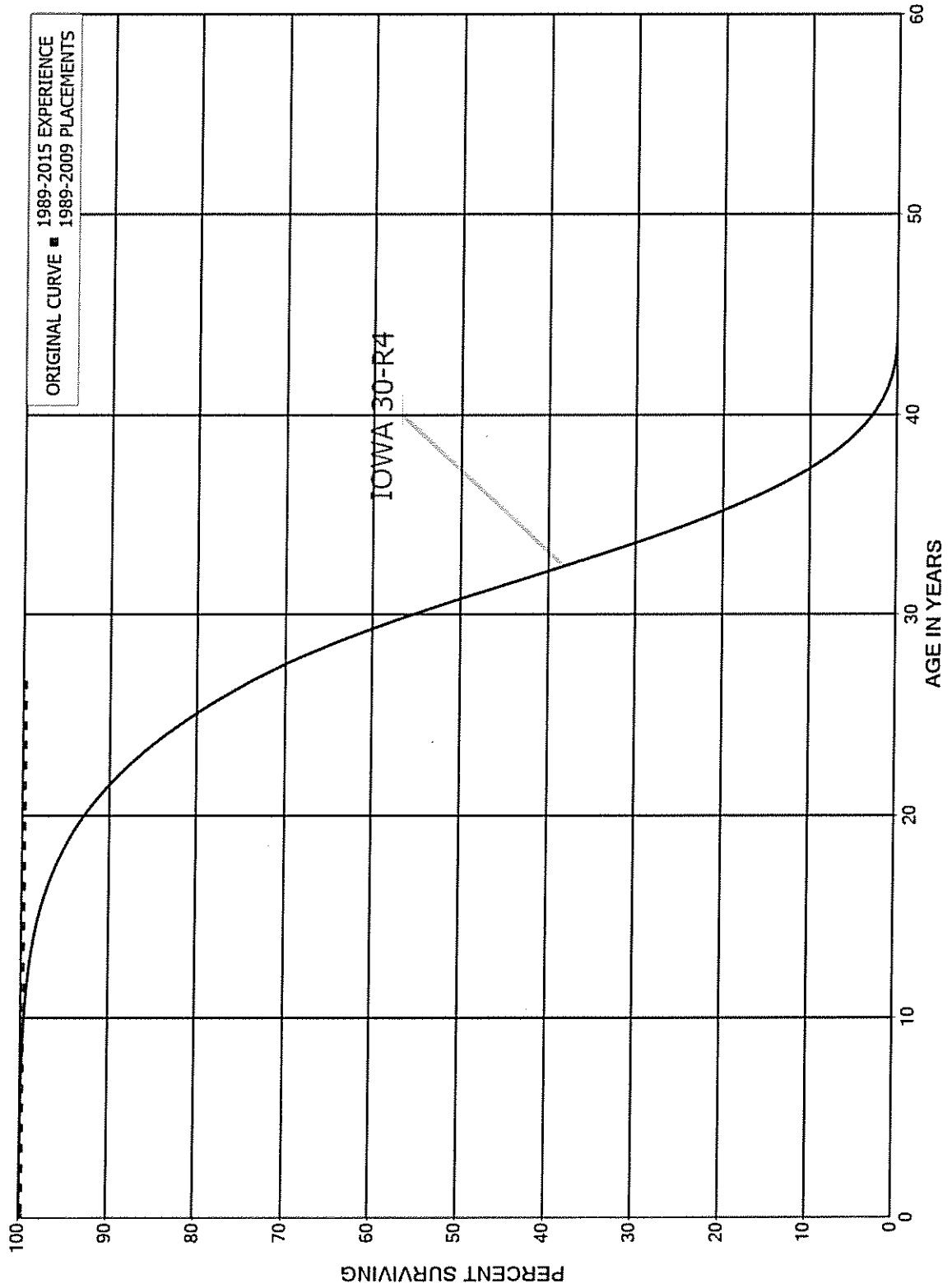
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 356 PURIFICATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-1998			EXPERIENCE BAND 1989-2015		
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	283,843		0.0000	1.0000	100.00
0.5	283,842		0.0000	1.0000	100.00
1.5	283,842		0.0000	1.0000	100.00
2.5	297,363		0.0000	1.0000	100.00
3.5	297,363		0.0000	1.0000	100.00
4.5	297,363		0.0000	1.0000	100.00
5.5	297,363		0.0000	1.0000	100.00
6.5	297,363		0.0000	1.0000	100.00
7.5	297,363		0.0000	1.0000	100.00
8.5	297,363		0.0000	1.0000	100.00
9.5	297,363		0.0000	1.0000	100.00
10.5	297,363		0.0000	1.0000	100.00
11.5	297,363		0.0000	1.0000	100.00
12.5	297,363		0.0000	1.0000	100.00
13.5	297,363		0.0000	1.0000	100.00
14.5	297,363		0.0000	1.0000	100.00
15.5	297,363		0.0000	1.0000	100.00
16.5	297,363		0.0000	1.0000	100.00
17.5	294,282		0.0000	1.0000	100.00
18.5	294,282		0.0000	1.0000	100.00
19.5	245,456		0.0000	1.0000	100.00
20.5	171,575		0.0000	1.0000	100.00
21.5	171,575		0.0000	1.0000	100.00
22.5	168,697		0.0000	1.0000	100.00
23.5	152,757		0.0000	1.0000	100.00
24.5	152,757		0.0000	1.0000	100.00
25.5	139,942		0.0000	1.0000	100.00
26.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 357 OTHER EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



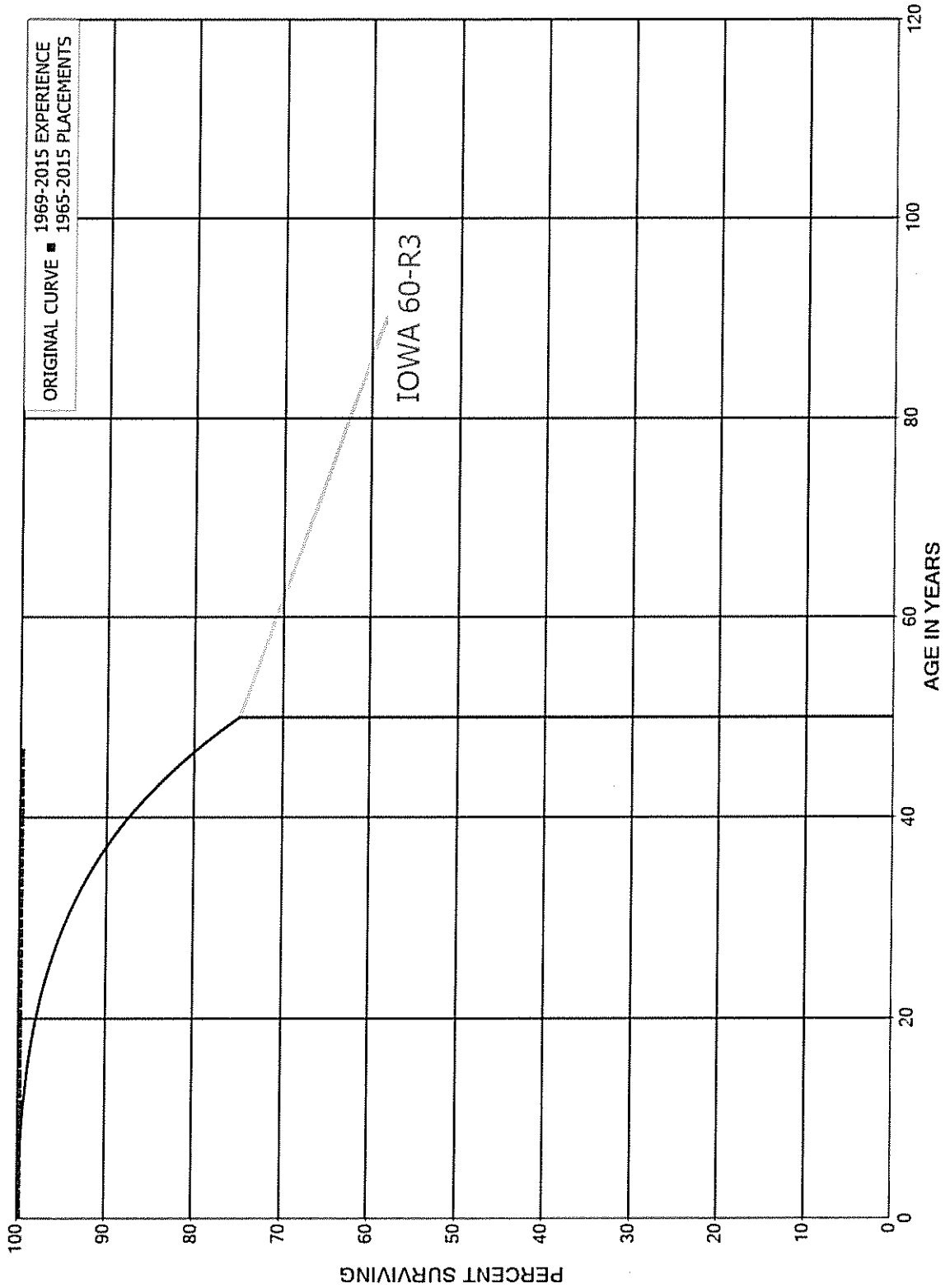
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 357 OTHER EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-2009			EXPERIENCE BAND 1989-2015		
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	1,388,976		0.0000	1.0000	100.00
0.5	1,388,976		0.0000	1.0000	100.00
1.5	1,388,976		0.0000	1.0000	100.00
2.5	1,395,285		0.0000	1.0000	100.00
3.5	1,395,285		0.0000	1.0000	100.00
4.5	1,395,285		0.0000	1.0000	100.00
5.5	1,395,285		0.0000	1.0000	100.00
6.5	1,332,029		0.0000	1.0000	100.00
7.5	702,587		0.0000	1.0000	100.00
8.5	702,587		0.0000	1.0000	100.00
9.5	702,587		0.0000	1.0000	100.00
10.5	702,587		0.0000	1.0000	100.00
11.5	702,587		0.0000	1.0000	100.00
12.5	702,587		0.0000	1.0000	100.00
13.5	702,587		0.0000	1.0000	100.00
14.5	702,587		0.0000	1.0000	100.00
15.5	702,587		0.0000	1.0000	100.00
16.5	646,258		0.0000	1.0000	100.00
17.5	82,037		0.0000	1.0000	100.00
18.5	82,037		0.0000	1.0000	100.00
19.5	82,037		0.0000	1.0000	100.00
20.5	82,037		0.0000	1.0000	100.00
21.5	82,037		0.0000	1.0000	100.00
22.5	82,037		0.0000	1.0000	100.00
23.5	76,057		0.0000	1.0000	100.00
24.5	76,057		0.0000	1.0000	100.00
25.5	76,057		0.0000	1.0000	100.00
26.5					100.00

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 361 STRUCTURES AND IMPROVEMENTS - MAJOR
 ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 361 STRUCTURES AND IMPROVEMENTS - MAJOR

ORIGINAL LIFE TABLE

PLACEMENT BAND 1965-2015

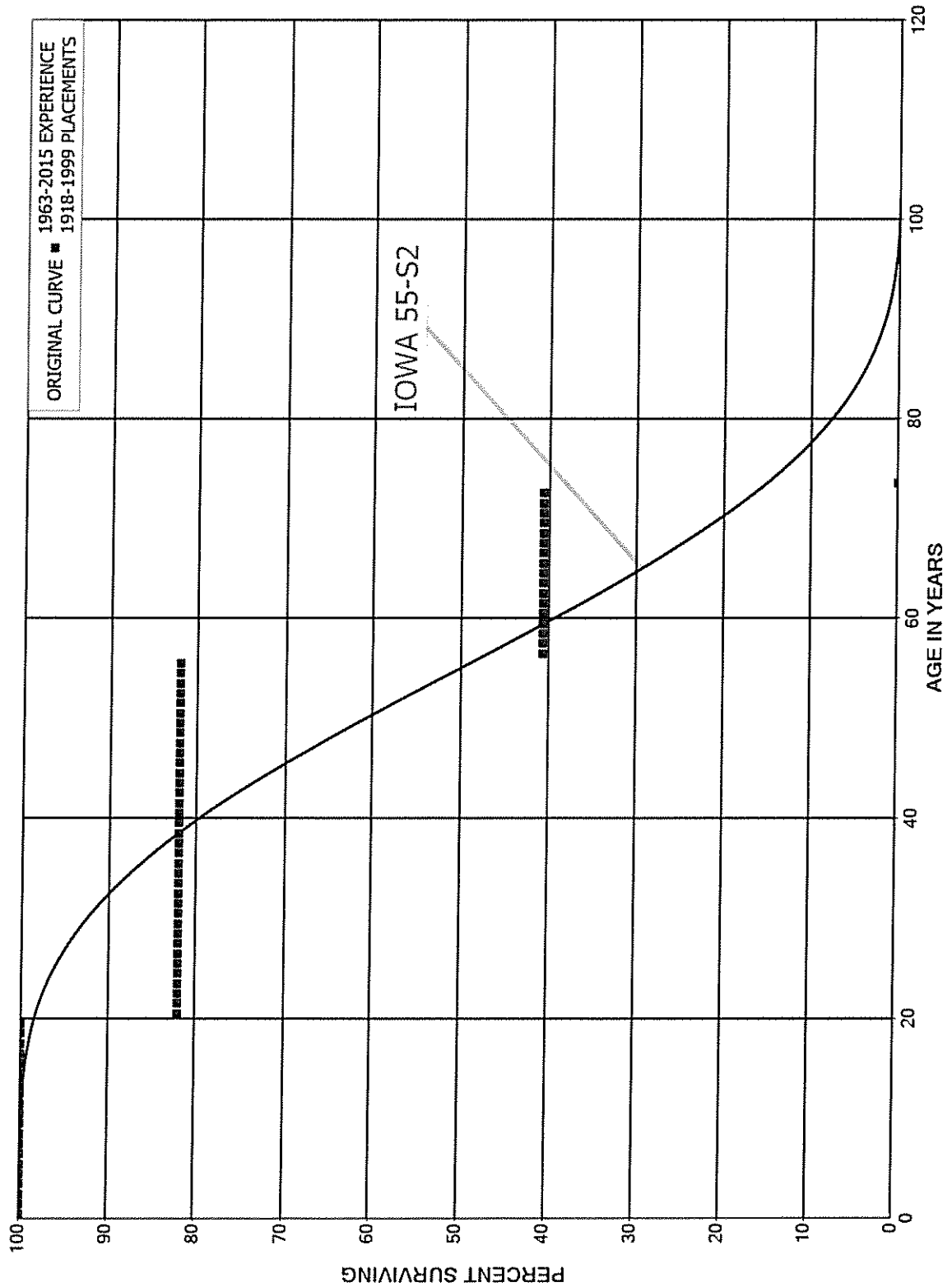
EXPERIENCE BAND 1969-2015

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	9,628,186	44	0.0000	1.0000	100.00
0.5	9,574,782		0.0000	1.0000	100.00
1.5	9,230,749		0.0000	1.0000	100.00
2.5	9,130,070		0.0000	1.0000	100.00
3.5	9,026,574		0.0000	1.0000	100.00
4.5	8,744,789	44	0.0000	1.0000	100.00
5.5	7,945,716		0.0000	1.0000	100.00
6.5	6,537,904		0.0000	1.0000	100.00
7.5	5,278,921		0.0000	1.0000	100.00
8.5	4,846,729	4,058	0.0008	0.9992	100.00
9.5	3,833,234		0.0000	1.0000	99.92
10.5	3,637,596		0.0000	1.0000	99.92
11.5	3,619,172		0.0000	1.0000	99.92
12.5	3,620,672		0.0000	1.0000	99.92
13.5	3,486,649		0.0000	1.0000	99.92
14.5	3,407,208		0.0000	1.0000	99.92
15.5	3,364,980		0.0000	1.0000	99.92
16.5	3,200,897		0.0000	1.0000	99.92
17.5	3,034,721		0.0000	1.0000	99.92
18.5	2,842,574		0.0000	1.0000	99.92
19.5	2,731,769		0.0000	1.0000	99.92
20.5	2,648,359		0.0000	1.0000	99.92
21.5	2,396,867		0.0000	1.0000	99.92
22.5	2,074,296		0.0000	1.0000	99.92
23.5	1,927,476		0.0000	1.0000	99.92
24.5	1,840,422		0.0000	1.0000	99.92
25.5	1,816,094		0.0000	1.0000	99.92
26.5	1,727,038		0.0000	1.0000	99.92
27.5	1,679,523		0.0000	1.0000	99.92
28.5	1,670,649		0.0000	1.0000	99.92
29.5	1,659,176		0.0000	1.0000	99.92
30.5	1,638,453		0.0000	1.0000	99.92
31.5	1,638,183		0.0000	1.0000	99.92
32.5	1,638,183		0.0000	1.0000	99.92
33.5	1,577,491		0.0000	1.0000	99.92
34.5	1,576,474		0.0000	1.0000	99.92
35.5	1,576,474		0.0000	1.0000	99.92
36.5	1,560,389		0.0000	1.0000	99.92
37.5	1,451,885		0.0000	1.0000	99.92
38.5	740,712		0.0000	1.0000	99.92

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 361 STRUCTURES AND IMPROVEMENTS - MAJOR
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1965-2015			EXPERIENCE BAND 1969-2015		
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	726,155		0.0000	1.0000	99.92
40.5	717,630		0.0000	1.0000	99.92
41.5	112,021		0.0000	1.0000	99.92
42.5	112,021		0.0000	1.0000	99.92
43.5	112,021		0.0000	1.0000	99.92
44.5	112,021		0.0000	1.0000	99.92
45.5	85,932		0.0000	1.0000	99.92
46.5	1,500		0.0000	1.0000	99.92
47.5	1,500		0.0000	1.0000	99.92
48.5	1,500		0.0000	1.0000	99.92
49.5	1,500		0.0000	1.0000	99.92
50.5					99.92

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 361 STRUCTURES AND IMPROVEMENTS - OTHER
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 361 STRUCTURES AND IMPROVEMENTS - OTHER

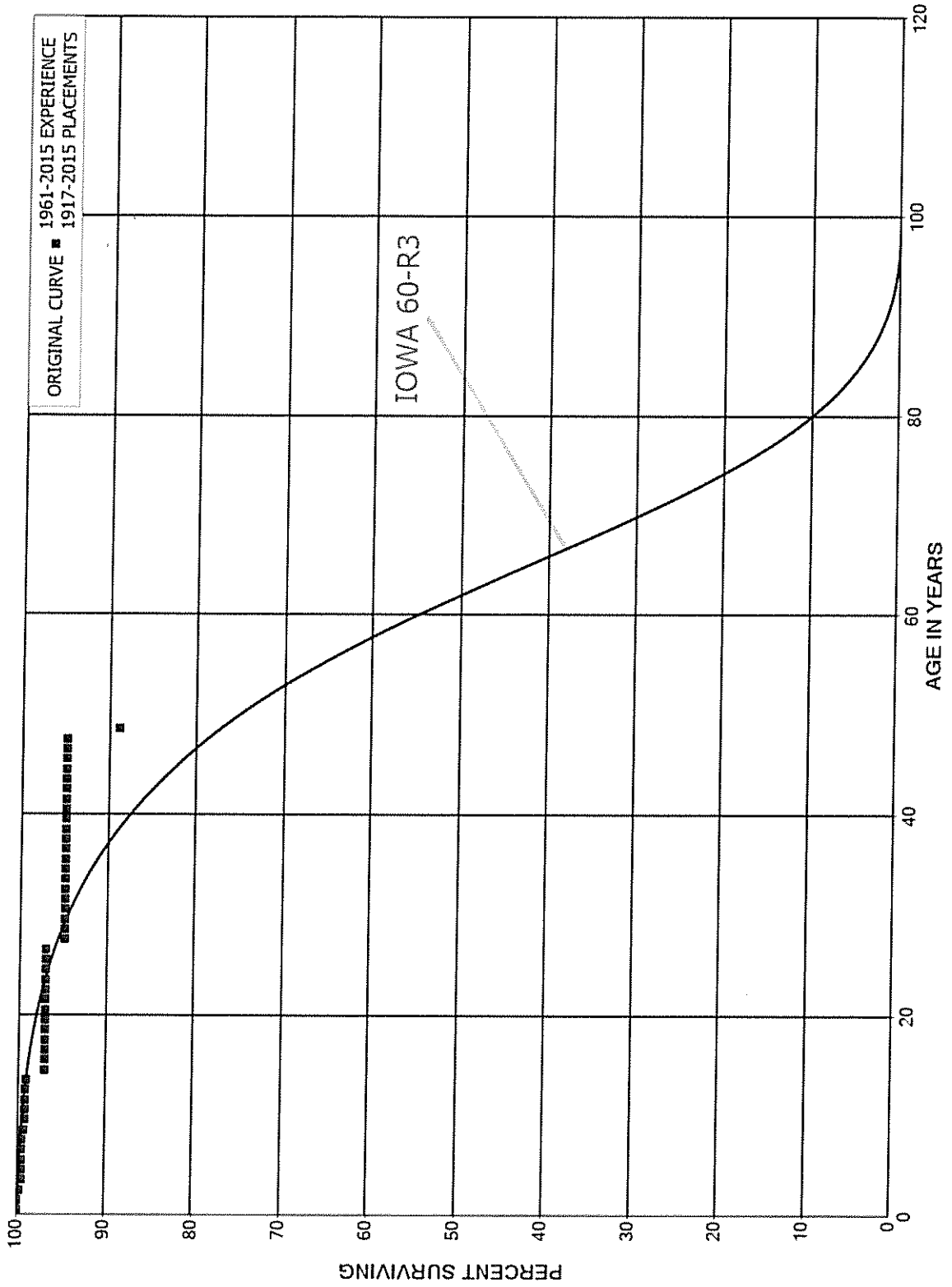
ORIGINAL LIFE TABLE

PLACEMENT BAND 1918-1999			EXPERIENCE BAND 1963-2015		
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	26,757		0.0000	1.0000	100.00
0.5	26,757		0.0000	1.0000	100.00
1.5	26,757		0.0000	1.0000	100.00
2.5	26,757		0.0000	1.0000	100.00
3.5	26,757		0.0000	1.0000	100.00
4.5	26,757		0.0000	1.0000	100.00
5.5	26,757		0.0000	1.0000	100.00
6.5	26,757		0.0000	1.0000	100.00
7.5	26,757		0.0000	1.0000	100.00
8.5	26,757		0.0000	1.0000	100.00
9.5	26,757		0.0000	1.0000	100.00
10.5	26,757		0.0000	1.0000	100.00
11.5	26,757		0.0000	1.0000	100.00
12.5	26,757		0.0000	1.0000	100.00
13.5	26,757		0.0000	1.0000	100.00
14.5	26,757		0.0000	1.0000	100.00
15.5	26,757		0.0000	1.0000	100.00
16.5	5,654		0.0000	1.0000	100.00
17.5	5,654		0.0000	1.0000	100.00
18.5	5,654		0.0000	1.0000	100.00
19.5	5,654	1,016	0.1797	0.8203	100.00
20.5	5,654		0.0000	1.0000	82.03
21.5	5,654		0.0000	1.0000	82.03
22.5	5,654		0.0000	1.0000	82.03
23.5	5,654		0.0000	1.0000	82.03
24.5	5,654		0.0000	1.0000	82.03
25.5	5,654		0.0000	1.0000	82.03
26.5	5,654		0.0000	1.0000	82.03
27.5	5,654		0.0000	1.0000	82.03
28.5	5,654		0.0000	1.0000	82.03
29.5	5,654		0.0000	1.0000	82.03
30.5	5,654		0.0000	1.0000	82.03
31.5	5,654		0.0000	1.0000	82.03
32.5	5,654		0.0000	1.0000	82.03
33.5	5,654		0.0000	1.0000	82.03
34.5	5,654		0.0000	1.0000	82.03
35.5	5,654		0.0000	1.0000	82.03
36.5	5,654		0.0000	1.0000	82.03
37.5	5,654		0.0000	1.0000	82.03
38.5	5,654		0.0000	1.0000	82.03

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 361 STRUCTURES AND IMPROVEMENTS - OTHER
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1918-1999			EXPERIENCE BAND 1963-2015		
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	5,654		0.0000	1.0000	82.03
40.5	4,536		0.0000	1.0000	82.03
41.5	9,627		0.0000	1.0000	82.03
42.5	9,627		0.0000	1.0000	82.03
43.5	9,627		0.0000	1.0000	82.03
44.5	11,347		0.0000	1.0000	82.03
45.5	11,347		0.0000	1.0000	82.03
46.5	11,347		0.0000	1.0000	82.03
47.5	10,820		0.0000	1.0000	82.03
48.5	10,820		0.0000	1.0000	82.03
49.5	10,820		0.0000	1.0000	82.03
50.5	10,820		0.0000	1.0000	82.03
51.5	10,820		0.0000	1.0000	82.03
52.5	6,811		0.0000	1.0000	82.03
53.5	6,811		0.0000	1.0000	82.03
54.5	6,811		0.0000	1.0000	82.03
55.5	6,811	3,440	0.5051	0.4949	82.03
56.5	5,091		0.0000	1.0000	40.60
57.5	5,091		0.0000	1.0000	40.60
58.5	5,091		0.0000	1.0000	40.60
59.5	5,091		0.0000	1.0000	40.60
60.5	5,091		0.0000	1.0000	40.60
61.5	5,091		0.0000	1.0000	40.60
62.5	5,091		0.0000	1.0000	40.60
63.5	5,091		0.0000	1.0000	40.60
64.5	5,091		0.0000	1.0000	40.60
65.5	5,091		0.0000	1.0000	40.60
66.5	5,091		0.0000	1.0000	40.60
67.5	5,091		0.0000	1.0000	40.60
68.5	5,091		0.0000	1.0000	40.60
69.5	5,091		0.0000	1.0000	40.60
70.5	5,091		0.0000	1.0000	40.60
71.5	5,091		0.0000	1.0000	40.60
72.5	5,091	5,091	1.0000		40.60
73.5					

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 362 GAS HOLDERS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 362 GAS HOLDERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1917-2015

EXPERIENCE BAND 1961-2015

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	8,633,509		0.0000	1.0000	100.00
0.5	8,652,600	954	0.0001	0.9999	100.00
1.5	8,612,119	20,788	0.0024	0.9976	99.99
2.5	8,617,723	24,257	0.0028	0.9972	99.75
3.5	8,618,677		0.0000	1.0000	99.47
4.5	8,618,500		0.0000	1.0000	99.47
5.5	8,621,453		0.0000	1.0000	99.47
6.5	8,132,806		0.0000	1.0000	99.47
7.5	8,132,806	12,049	0.0015	0.9985	99.47
8.5	8,088,225	11,416	0.0014	0.9986	99.32
9.5	7,721,009	472	0.0001	0.9999	99.18
10.5	7,721,188		0.0000	1.0000	99.17
11.5	7,698,699		0.0000	1.0000	99.17
12.5	7,697,099	8,994	0.0012	0.9988	99.17
13.5	8,448,451	174,892	0.0207	0.9793	99.06
14.5	8,448,451		0.0000	1.0000	97.01
15.5	8,448,451	2,066	0.0002	0.9998	97.01
16.5	8,446,484		0.0000	1.0000	96.98
17.5	8,442,780		0.0000	1.0000	96.98
18.5	8,442,780		0.0000	1.0000	96.98
19.5	8,304,288		0.0000	1.0000	96.98
20.5	8,304,288		0.0000	1.0000	96.98
21.5	8,231,302		0.0000	1.0000	96.98
22.5	8,114,874		0.0000	1.0000	96.98
23.5	8,114,725		0.0000	1.0000	96.98
24.5	8,113,708	1,431	0.0002	0.9998	96.98
25.5	8,113,708		0.0000	1.0000	96.97
26.5	8,113,708	174,892	0.0216	0.9784	96.97
27.5	7,935,179		0.0000	1.0000	94.88
28.5	7,934,225		0.0000	1.0000	94.88
29.5	7,934,225		0.0000	1.0000	94.88
30.5	7,931,272	1,200	0.0002	0.9998	94.88
31.5	7,930,072		0.0000	1.0000	94.86
32.5	7,929,103		0.0000	1.0000	94.86
33.5	7,929,103		0.0000	1.0000	94.86
34.5	7,921,732		0.0000	1.0000	94.86
35.5	7,930,314		0.0000	1.0000	94.86
36.5	7,930,314		0.0000	1.0000	94.86
37.5	7,920,012		0.0000	1.0000	94.86
38.5	1,730,687		0.0000	1.0000	94.86

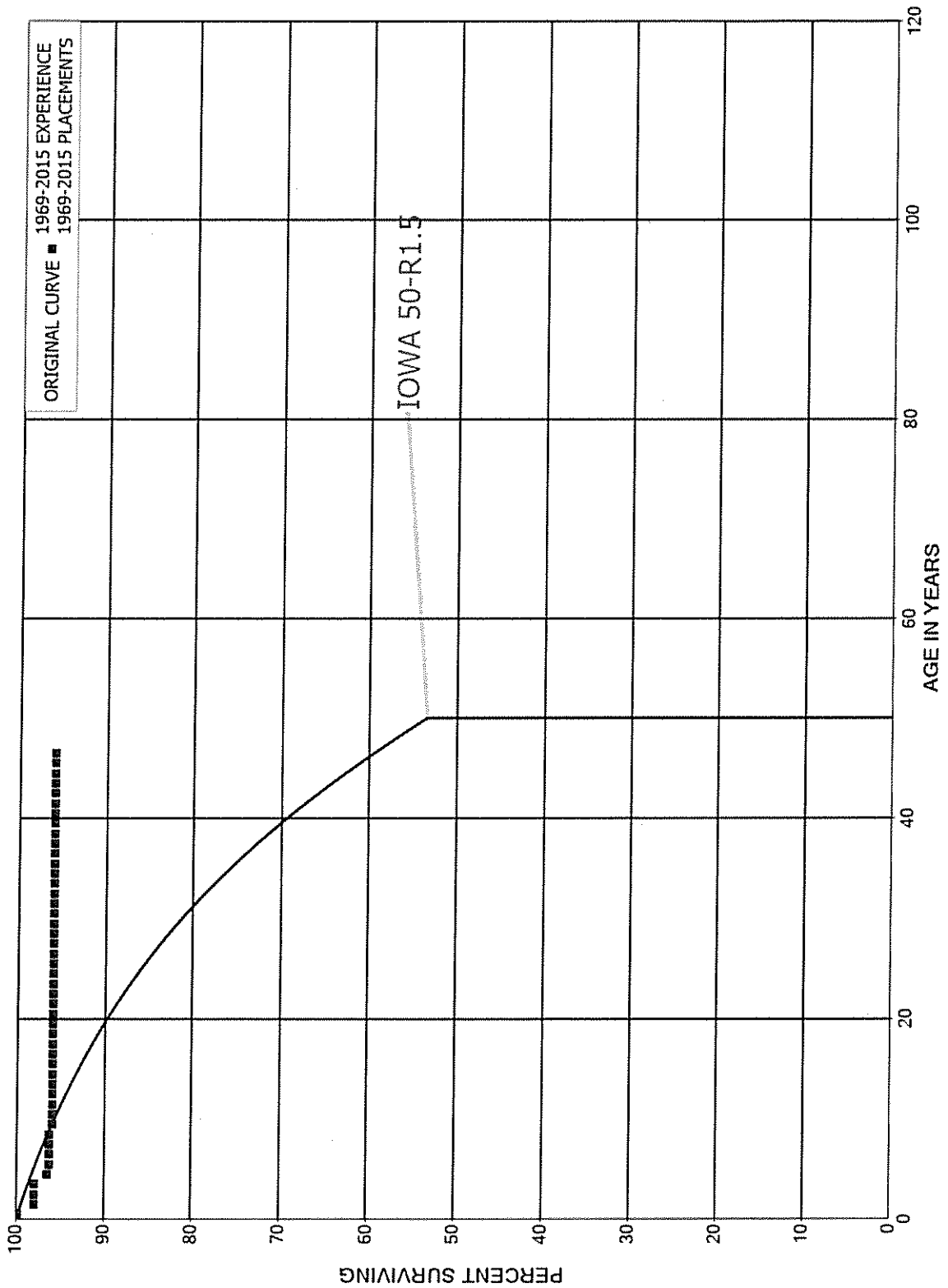
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 362 GAS HOLDERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1917-2015			EXPERIENCE BAND 1961-2015		
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	1,730,687		0.0000	1.0000	94.86
40.5	1,730,687		0.0000	1.0000	94.86
41.5	1,729,872		0.0000	1.0000	94.86
42.5	1,729,872		0.0000	1.0000	94.86
43.5	1,729,969		0.0000	1.0000	94.86
44.5	1,729,969		0.0000	1.0000	94.86
45.5	1,729,969		0.0000	1.0000	94.86
46.5	9,460		0.0000	1.0000	94.86
47.5	9,460	602	0.0636	0.9364	94.86
48.5	8,858		0.0000	1.0000	88.82
49.5	8,858		0.0000	1.0000	88.82
50.5	8,858		0.0000	1.0000	88.82
51.5	8,858		0.0000	1.0000	88.82
52.5	8,858		0.0000	1.0000	88.82
53.5	8,858		0.0000	1.0000	88.82
54.5	8,858		0.0000	1.0000	88.82
55.5	8,858		0.0000	1.0000	88.82
56.5	8,858		0.0000	1.0000	88.82
57.5	8,858		0.0000	1.0000	88.82
58.5	8,858		0.0000	1.0000	88.82
59.5	8,858		0.0000	1.0000	88.82
60.5	97		0.0000	1.0000	88.82
61.5	97		0.0000	1.0000	88.82
62.5	97		0.0000	1.0000	88.82
63.5	97		0.0000	1.0000	88.82
64.5	97		0.0000	1.0000	88.82
65.5	97		0.0000	1.0000	88.82
66.5	97		0.0000	1.0000	88.82
67.5	97		0.0000	1.0000	88.82
68.5					88.82

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 363.1 LIQUEFACTION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.1 LIQUEFACTION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1969-2015

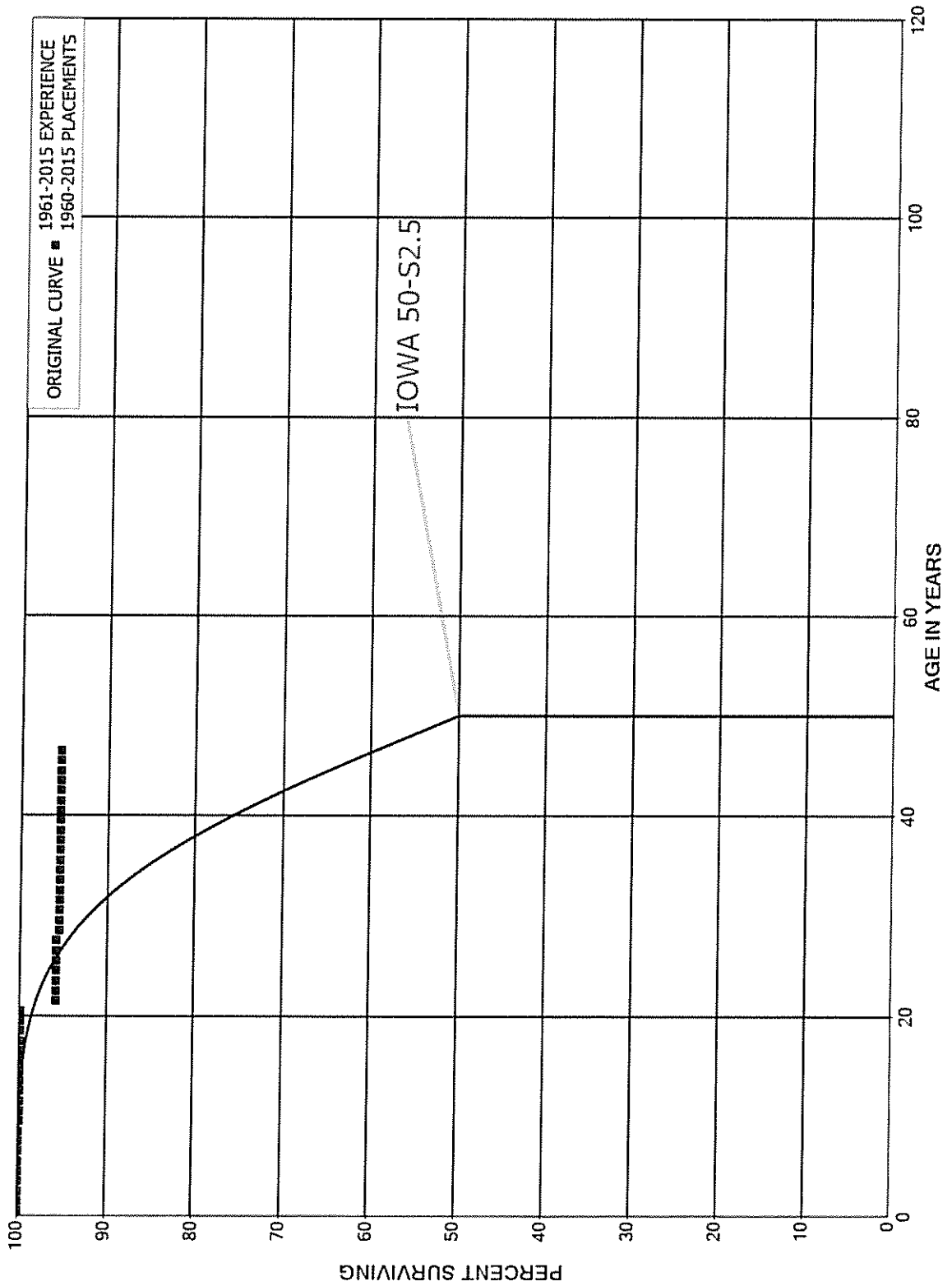
EXPERIENCE BAND 1969-2015

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	10,526,368	18,698	0.0018	0.9982	100.00
0.5	10,472,543	199,635	0.0191	0.9809	99.82
1.5	10,499,406		0.0000	1.0000	97.92
2.5	10,229,518		0.0000	1.0000	97.92
3.5	10,155,588	146,338	0.0144	0.9856	97.92
4.5	10,009,250	18,698	0.0019	0.9981	96.51
5.5	9,988,977		0.0000	1.0000	96.33
6.5	9,804,474		0.0000	1.0000	96.33
7.5	9,742,096		0.0000	1.0000	96.33
8.5	9,698,293	34,692	0.0036	0.9964	96.33
9.5	9,353,424		0.0000	1.0000	95.98
10.5	9,305,092		0.0000	1.0000	95.98
11.5	9,009,610		0.0000	1.0000	95.98
12.5	8,877,944		0.0000	1.0000	95.98
13.5	8,789,372		0.0000	1.0000	95.98
14.5	8,324,099		0.0000	1.0000	95.98
15.5	8,235,977		0.0000	1.0000	95.98
16.5	7,886,206		0.0000	1.0000	95.98
17.5	7,311,664		0.0000	1.0000	95.98
18.5	6,944,007		0.0000	1.0000	95.98
19.5	6,757,315		0.0000	1.0000	95.98
20.5	6,755,104		0.0000	1.0000	95.98
21.5	6,738,396		0.0000	1.0000	95.98
22.5	6,722,200		0.0000	1.0000	95.98
23.5	6,640,671		0.0000	1.0000	95.98
24.5	6,537,465		0.0000	1.0000	95.98
25.5	6,447,294		0.0000	1.0000	95.98
26.5	6,425,535		0.0000	1.0000	95.98
27.5	6,425,535		0.0000	1.0000	95.98
28.5	6,313,086		0.0000	1.0000	95.98
29.5	6,298,223		0.0000	1.0000	95.98
30.5	6,286,698		0.0000	1.0000	95.98
31.5	6,264,779		0.0000	1.0000	95.98
32.5	6,264,779		0.0000	1.0000	95.98
33.5	6,264,779		0.0000	1.0000	95.98
34.5	6,264,779		0.0000	1.0000	95.98
35.5	6,164,100		0.0000	1.0000	95.98
36.5	6,158,562		0.0000	1.0000	95.98
37.5	6,142,214		0.0000	1.0000	95.98
38.5	905,417		0.0000	1.0000	95.98

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 363.1 LIQUEFACTION EQUIPMENT
 ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1969-2015			EXPERIENCE BAND 1969-2015		
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	879,462		0.0000	1.0000	95.98
40.5	879,194		0.0000	1.0000	95.98
41.5	877,237		0.0000	1.0000	95.98
42.5	877,237		0.0000	1.0000	95.98
43.5	872,976		0.0000	1.0000	95.98
44.5	844,045		0.0000	1.0000	95.98
45.5	828,857		0.0000	1.0000	95.98
46.5					95.98

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 363.2 COMPRESSOR EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



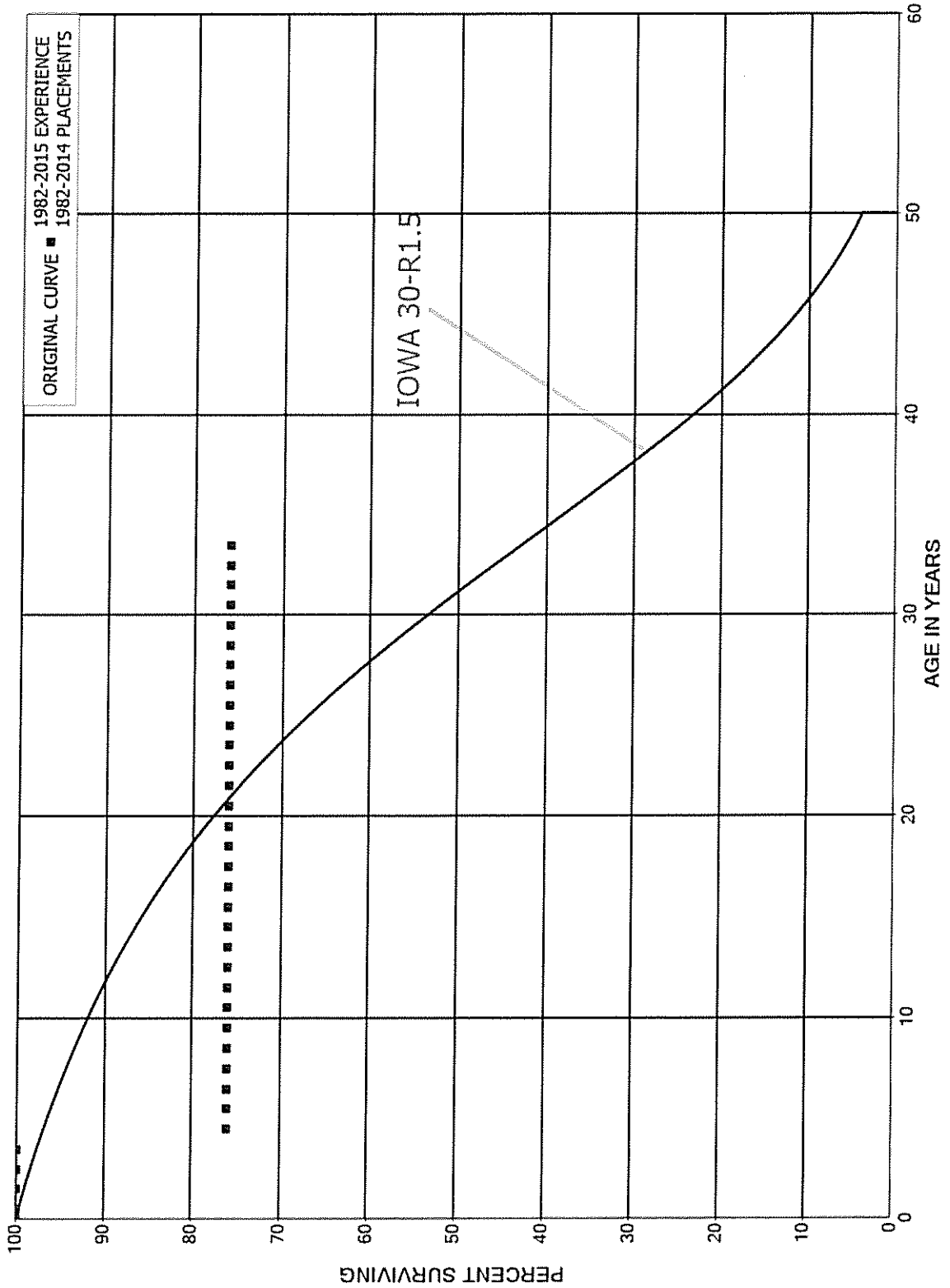
NORTHWEST NATURAL GAS COMPANY
ACCOUNT 363.2 COMPRESSOR EQUIPMENT
ORIGINAL LIFE TABLE

PLACEMENT BAND 1960-2015			EXPERIENCE BAND 1961-2015		
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	6,357,594		0.0000	1.0000	100.00
0.5	6,233,423	602	0.0001	0.9999	100.00
1.5	6,436,057		0.0000	1.0000	99.99
2.5	6,436,057	1,415	0.0002	0.9998	99.99
3.5	6,436,057		0.0000	1.0000	99.97
4.5	5,323,042		0.0000	1.0000	99.97
5.5	5,323,042		0.0000	1.0000	99.97
6.5	5,323,042	1,983	0.0004	0.9996	99.97
7.5	5,323,042		0.0000	1.0000	99.93
8.5	5,323,042	2,322	0.0004	0.9996	99.93
9.5	4,999,612		0.0000	1.0000	99.89
10.5	4,999,612		0.0000	1.0000	99.89
11.5	4,931,166		0.0000	1.0000	99.89
12.5	4,931,166		0.0000	1.0000	99.89
13.5	4,930,986		0.0000	1.0000	99.89
14.5	4,930,986		0.0000	1.0000	99.89
15.5	4,930,986		0.0000	1.0000	99.89
16.5	4,930,986		0.0000	1.0000	99.89
17.5	4,930,986		0.0000	1.0000	99.89
18.5	4,930,986		0.0000	1.0000	99.89
19.5	4,930,986		0.0000	1.0000	99.89
20.5	4,911,455	200,000	0.0407	0.9593	99.89
21.5	4,678,694		0.0000	1.0000	95.82
22.5	4,678,238		0.0000	1.0000	95.82
23.5	4,675,576		0.0000	1.0000	95.82
24.5	4,489,140		0.0000	1.0000	95.82
25.5	3,332,830		0.0000	1.0000	95.82
26.5	3,283,330		0.0000	1.0000	95.82
27.5	3,283,330	9,983	0.0030	0.9970	95.82
28.5	3,095,885		0.0000	1.0000	95.53
29.5	3,083,807		0.0000	1.0000	95.53
30.5	3,083,807		0.0000	1.0000	95.53
31.5	3,083,807		0.0000	1.0000	95.53
32.5	3,083,807		0.0000	1.0000	95.53
33.5	3,083,807		0.0000	1.0000	95.53
34.5	3,083,807		0.0000	1.0000	95.53
35.5	3,083,807		0.0000	1.0000	95.53
36.5	3,083,807		0.0000	1.0000	95.53
37.5	3,083,807		0.0000	1.0000	95.53
38.5	753,468		0.0000	1.0000	95.53

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 363.2 COMPRESSOR EQUIPMENT
 ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1960-2015			EXPERIENCE BAND 1961-2015		
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	366,804		0.0000	1.0000	95.53
40.5	366,535		0.0000	1.0000	95.53
41.5	364,276		0.0000	1.0000	95.53
42.5	351,025		0.0000	1.0000	95.53
43.5	348,657		0.0000	1.0000	95.53
44.5	331,341		0.0000	1.0000	95.53
45.5	322,219		0.0000	1.0000	95.53
46.5					95.53

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 363.3 COMPRESSOR EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES

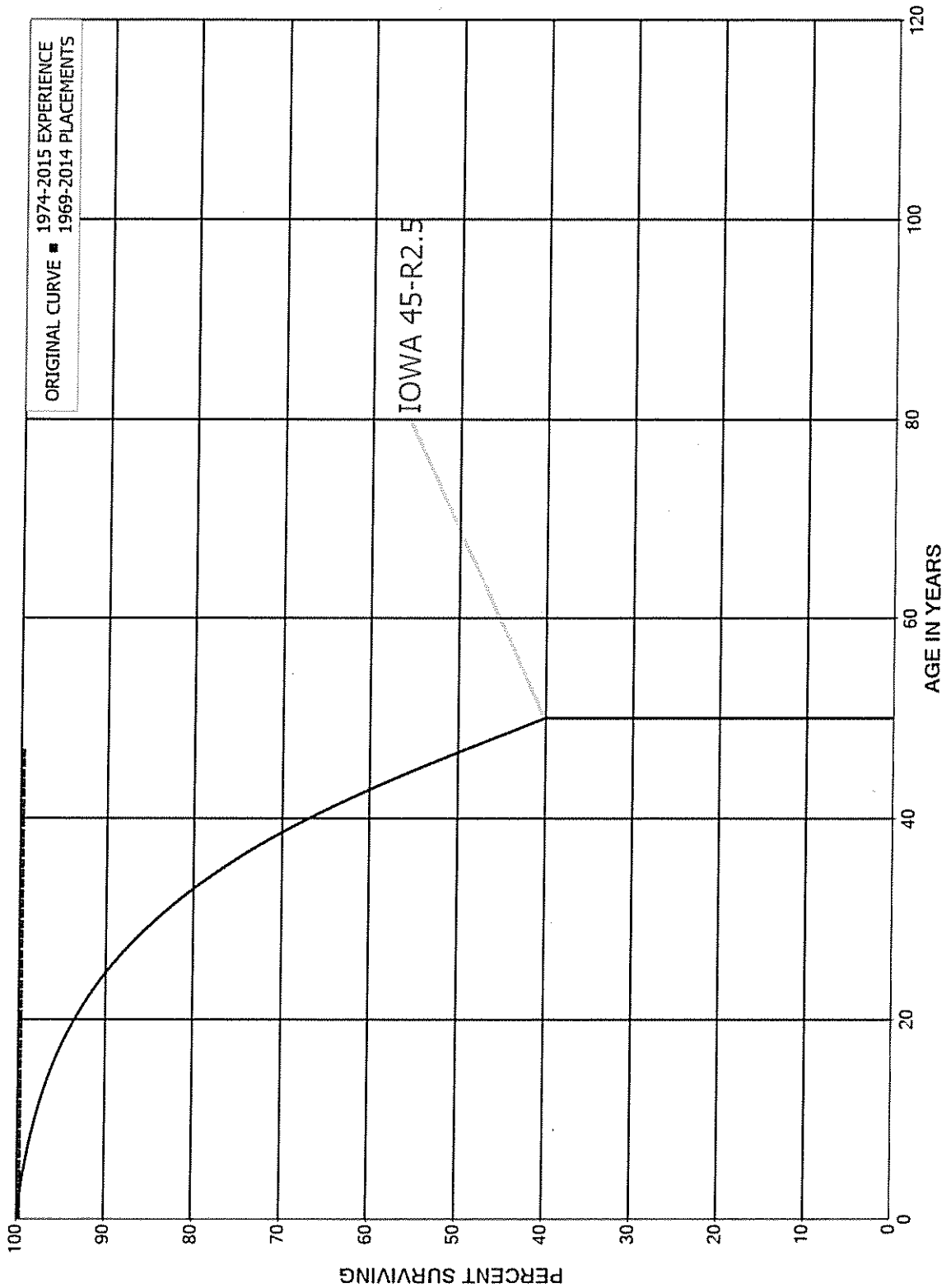


NORTHWEST NATURAL GAS COMPANY
ACCOUNT 363.3 COMPRESSOR EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1982-2014			EXPERIENCE BAND 1982-2015		
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	1,704,106		0.0000	1.0000	100.00
0.5	1,704,106		0.0000	1.0000	100.00
1.5	633,552		0.0000	1.0000	100.00
2.5	633,552	273	0.0004	0.9996	100.00
3.5	633,279	151,425	0.2391	0.7609	99.96
4.5	481,854		0.0000	1.0000	76.06
5.5	481,854		0.0000	1.0000	76.06
6.5	481,854		0.0000	1.0000	76.06
7.5	428,692		0.0000	1.0000	76.06
8.5	343,850		0.0000	1.0000	76.06
9.5	343,850		0.0000	1.0000	76.06
10.5	327,070		0.0000	1.0000	76.06
11.5	327,070		0.0000	1.0000	76.06
12.5	148,568		0.0000	1.0000	76.06
13.5	148,568		0.0000	1.0000	76.06
14.5	148,568		0.0000	1.0000	76.06
15.5	148,568		0.0000	1.0000	76.06
16.5	148,568		0.0000	1.0000	76.06
17.5	148,568		0.0000	1.0000	76.06
18.5	127,741		0.0000	1.0000	76.06
19.5	108,320		0.0000	1.0000	76.06
20.5	108,320		0.0000	1.0000	76.06
21.5	108,320		0.0000	1.0000	76.06
22.5	108,320		0.0000	1.0000	76.06
23.5	108,320		0.0000	1.0000	76.06
24.5	108,320		0.0000	1.0000	76.06
25.5	108,320		0.0000	1.0000	76.06
26.5	108,320		0.0000	1.0000	76.06
27.5	108,320		0.0000	1.0000	76.06
28.5	108,320		0.0000	1.0000	76.06
29.5	86,804		0.0000	1.0000	76.06
30.5	86,804		0.0000	1.0000	76.06
31.5	86,804		0.0000	1.0000	76.06
32.5	85,687		0.0000	1.0000	76.06
33.5					76.06

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 363.4 MEASURING AND REGULATING EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.4 MEASURING AND REGULATING EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1969-2014

EXPERIENCE BAND 1974-2015

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	729,184		0.0000	1.0000	100.00
0.5	729,184		0.0000	1.0000	100.00
1.5	370,230		0.0000	1.0000	100.00
2.5	380,061		0.0000	1.0000	100.00
3.5	389,026		0.0000	1.0000	100.00
4.5	850,563		0.0000	1.0000	100.00
5.5	850,563		0.0000	1.0000	100.00
6.5	682,272		0.0000	1.0000	100.00
7.5	682,272		0.0000	1.0000	100.00
8.5	682,272		0.0000	1.0000	100.00
9.5	653,998		0.0000	1.0000	100.00
10.5	653,998		0.0000	1.0000	100.00
11.5	653,998		0.0000	1.0000	100.00
12.5	653,998		0.0000	1.0000	100.00
13.5	636,675		0.0000	1.0000	100.00
14.5	636,675		0.0000	1.0000	100.00
15.5	636,675		0.0000	1.0000	100.00
16.5	636,675		0.0000	1.0000	100.00
17.5	636,675		0.0000	1.0000	100.00
18.5	636,675		0.0000	1.0000	100.00
19.5	636,675		0.0000	1.0000	100.00
20.5	636,675		0.0000	1.0000	100.00
21.5	636,675		0.0000	1.0000	100.00
22.5	636,675		0.0000	1.0000	100.00
23.5	633,304		0.0000	1.0000	100.00
24.5	610,146		0.0000	1.0000	100.00
25.5	562,663		0.0000	1.0000	100.00
26.5	555,322		0.0000	1.0000	100.00
27.5	545,620		0.0000	1.0000	100.00
28.5	545,620		0.0000	1.0000	100.00
29.5	545,620		0.0000	1.0000	100.00
30.5	541,958		0.0000	1.0000	100.00
31.5	541,958		0.0000	1.0000	100.00
32.5	541,958		0.0000	1.0000	100.00
33.5	541,958		0.0000	1.0000	100.00
34.5	541,958		0.0000	1.0000	100.00
35.5	541,958		0.0000	1.0000	100.00
36.5	541,958		0.0000	1.0000	100.00
37.5	537,237		0.0000	1.0000	100.00
38.5	482,034		0.0000	1.0000	100.00

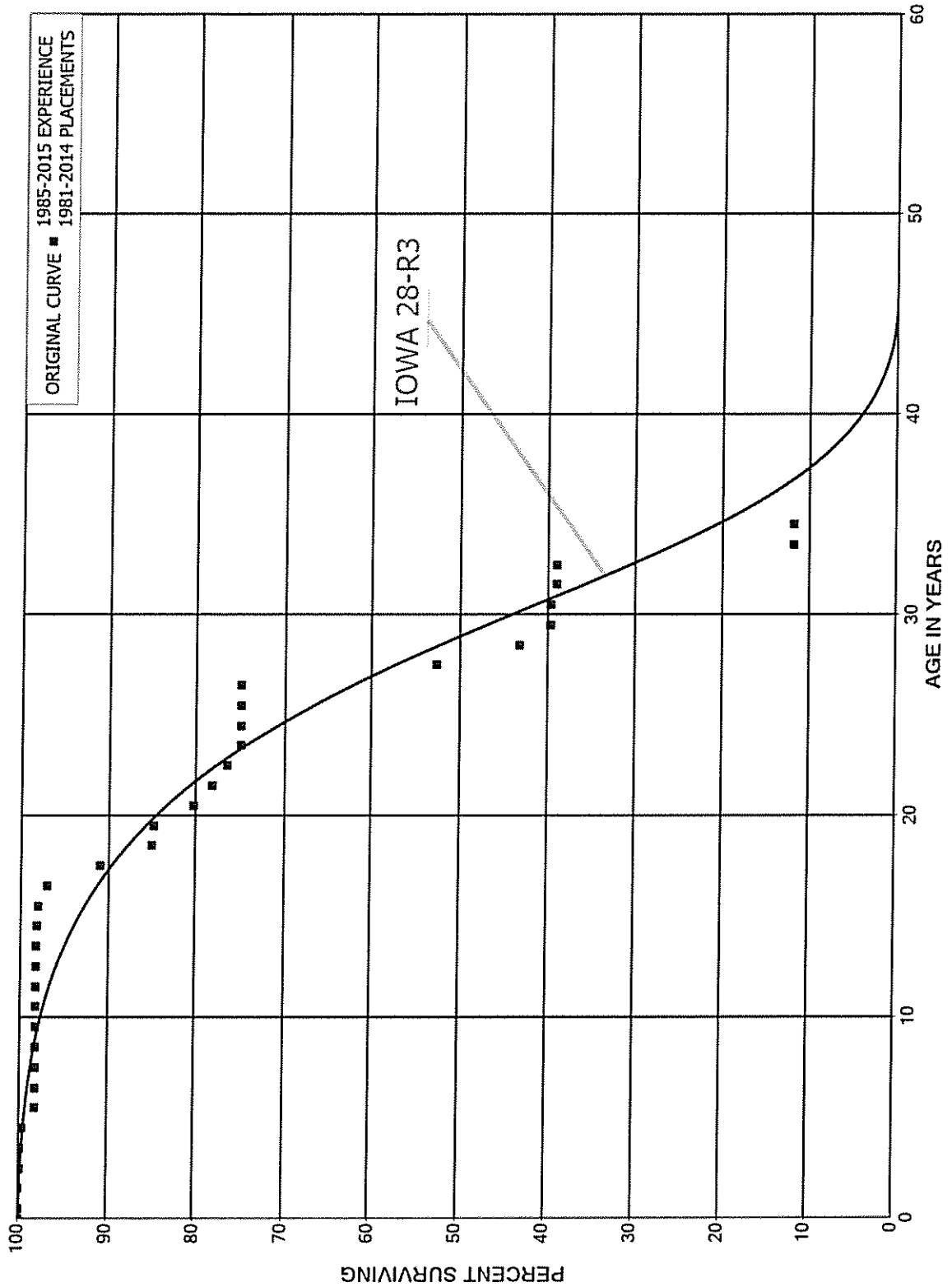
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.4 MEASURING AND REGULATING EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1969-2014			EXPERIENCE BAND 1974-2015		
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	482,034		0.0000	1.0000	100.00
40.5	481,660		0.0000	1.0000	100.00
41.5	480,333		0.0000	1.0000	100.00
42.5	480,333		0.0000	1.0000	100.00
43.5	474,008		0.0000	1.0000	100.00
44.5	464,177		0.0000	1.0000	100.00
45.5	461,537		0.0000	1.0000	100.00
46.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 363.5 CNG REFUELLING FACILITIES
ORIGINAL AND SMOOTH SURVIVOR CURVES



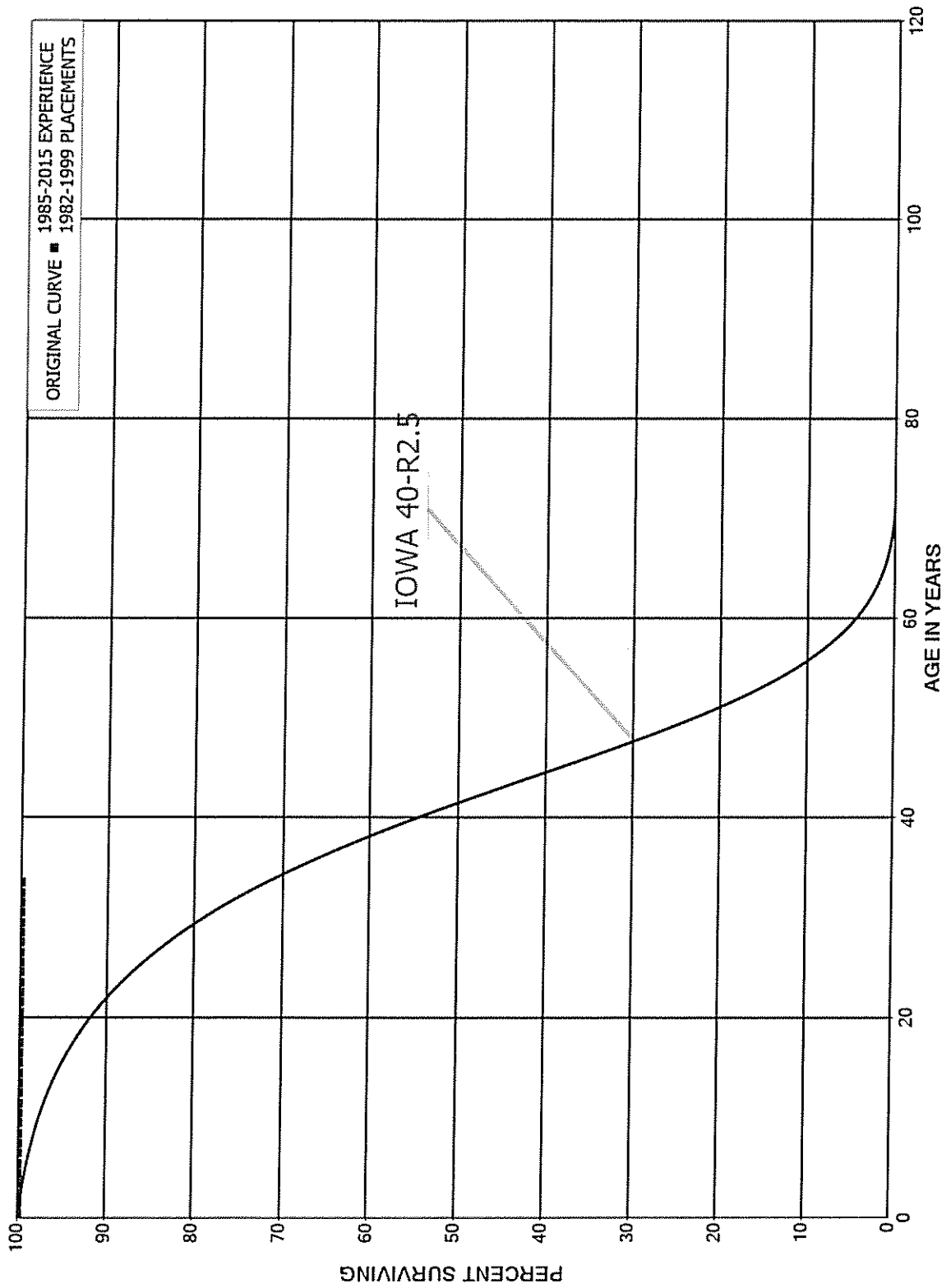
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.5 CNG REFUELING FACILITIES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1981-2014			EXPERIENCE BAND 1985-2015		
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	3,397,353		0.0000	1.0000	100.00
0.5	3,397,353	3,726	0.0011	0.9989	100.00
1.5	1,971,945	13	0.0000	1.0000	99.89
2.5	1,854,182	1,280	0.0007	0.9993	99.89
3.5	1,744,177	3,071	0.0018	0.9982	99.82
4.5	1,856,129	27,968	0.0151	0.9849	99.64
5.5	1,828,161		0.0000	1.0000	98.14
6.5	1,828,161		0.0000	1.0000	98.14
7.5	1,828,161		0.0000	1.0000	98.14
8.5	1,828,161		0.0000	1.0000	98.14
9.5	1,828,161		0.0000	1.0000	98.14
10.5	1,828,161		0.0000	1.0000	98.14
11.5	1,778,487		0.0000	1.0000	98.14
12.5	1,778,487		0.0000	1.0000	98.14
13.5	1,777,187	1,938	0.0011	0.9989	98.14
14.5	1,775,249	1,632	0.0009	0.9991	98.04
15.5	1,773,617	18,126	0.0102	0.9898	97.95
16.5	1,751,208	108,566	0.0620	0.9380	96.95
17.5	1,613,806	103,851	0.0644	0.9356	90.94
18.5	1,461,970	4,067	0.0028	0.9972	85.08
19.5	1,229,752	66,855	0.0544	0.9456	84.85
20.5	869,538	22,396	0.0258	0.9742	80.23
21.5	498,758	10,299	0.0206	0.9794	78.17
22.5	427,249	8,819	0.0206	0.9794	76.55
23.5	398,723		0.0000	1.0000	74.97
24.5	346,516		0.0000	1.0000	74.97
25.5	283,037		0.0000	1.0000	74.97
26.5	283,037	84,323	0.2979	0.7021	74.97
27.5	198,714	35,635	0.1793	0.8207	52.64
28.5	163,079	13,528	0.0830	0.9170	43.20
29.5	142,533	25	0.0002	0.9998	39.61
30.5	141,042	2,421	0.0172	0.9828	39.61
31.5	98,178		0.0000	1.0000	38.93
32.5	96,615	67,435	0.6980	0.3020	38.93
33.5	19,620		0.0000	1.0000	11.76
34.5					11.76

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 363.6 LNG REFUELING FACILITIES
 ORIGINAL AND SMOOTH SURVIVOR CURVES



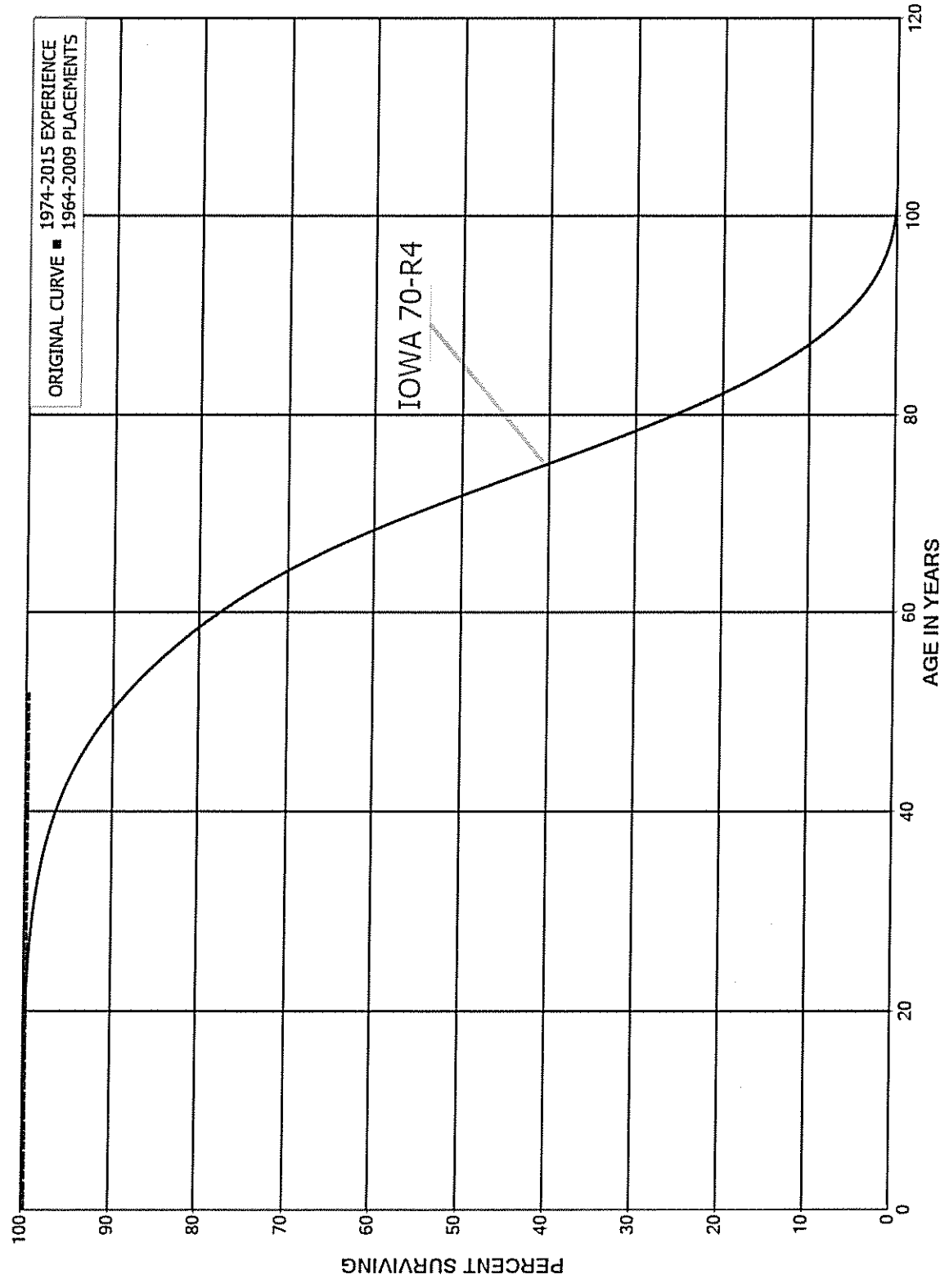
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.6 LNG REFUELING FACILITIES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1982-1999			EXPERIENCE BAND 1985-2015		
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	281,163		0.0000	1.0000	100.00
0.5	281,163		0.0000	1.0000	100.00
1.5	328,416		0.0000	1.0000	100.00
2.5	390,036		0.0000	1.0000	100.00
3.5	739,473		0.0000	1.0000	100.00
4.5	739,473		0.0000	1.0000	100.00
5.5	739,473		0.0000	1.0000	100.00
6.5	739,473		0.0000	1.0000	100.00
7.5	739,473		0.0000	1.0000	100.00
8.5	739,473		0.0000	1.0000	100.00
9.5	739,473		0.0000	1.0000	100.00
10.5	739,473		0.0000	1.0000	100.00
11.5	739,473		0.0000	1.0000	100.00
12.5	739,473		0.0000	1.0000	100.00
13.5	739,473		0.0000	1.0000	100.00
14.5	739,473		0.0000	1.0000	100.00
15.5	739,473		0.0000	1.0000	100.00
16.5	730,990		0.0000	1.0000	100.00
17.5	730,990		0.0000	1.0000	100.00
18.5	725,680		0.0000	1.0000	100.00
19.5	712,293		0.0000	1.0000	100.00
20.5	666,615		0.0000	1.0000	100.00
21.5	628,397		0.0000	1.0000	100.00
22.5	573,929		0.0000	1.0000	100.00
23.5	460,040		0.0000	1.0000	100.00
24.5	459,105		0.0000	1.0000	100.00
25.5	459,105		0.0000	1.0000	100.00
26.5	459,105		0.0000	1.0000	100.00
27.5	459,105		0.0000	1.0000	100.00
28.5	459,105		0.0000	1.0000	100.00
29.5	458,997		0.0000	1.0000	100.00
30.5	453,824		0.0000	1.0000	100.00
31.5	411,057		0.0000	1.0000	100.00
32.5	349,437		0.0000	1.0000	100.00
33.5					100.00

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 365.2 LAND RIGHTS
 ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 365.2 LAND RIGHTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1964-2009

EXPERIENCE BAND 1974-2015

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	5,770,969		0.0000	1.0000	100.00
0.5	5,375,541		0.0000	1.0000	100.00
1.5	5,279,074		0.0000	1.0000	100.00
2.5	5,310,109		0.0000	1.0000	100.00
3.5	5,310,109		0.0000	1.0000	100.00
4.5	5,310,109		0.0000	1.0000	100.00
5.5	5,286,730		0.0000	1.0000	100.00
6.5	5,261,834		0.0000	1.0000	100.00
7.5	5,395,545		0.0000	1.0000	100.00
8.5	5,969,191		0.0000	1.0000	100.00
9.5	6,176,874		0.0000	1.0000	100.00
10.5	6,270,968		0.0000	1.0000	100.00
11.5	4,195,148		0.0000	1.0000	100.00
12.5	3,013,374		0.0000	1.0000	100.00
13.5	2,617,946		0.0000	1.0000	100.00
14.5	2,617,946		0.0000	1.0000	100.00
15.5	2,617,946		0.0000	1.0000	100.00
16.5	2,617,946		0.0000	1.0000	100.00
17.5	2,617,946		0.0000	1.0000	100.00
18.5	2,617,946		0.0000	1.0000	100.00
19.5	2,617,946		0.0000	1.0000	100.00
20.5	2,617,946		0.0000	1.0000	100.00
21.5	2,617,946		0.0000	1.0000	100.00
22.5	2,617,946		0.0000	1.0000	100.00
23.5	2,604,197		0.0000	1.0000	100.00
24.5	2,461,137		0.0000	1.0000	100.00
25.5	2,060,125		0.0000	1.0000	100.00
26.5	1,244,309		0.0000	1.0000	100.00
27.5	1,244,309		0.0000	1.0000	100.00
28.5	1,244,309		0.0000	1.0000	100.00
29.5	1,244,309		0.0000	1.0000	100.00
30.5	1,244,309		0.0000	1.0000	100.00
31.5	1,244,309		0.0000	1.0000	100.00
32.5	1,244,309		0.0000	1.0000	100.00
33.5	1,244,309		0.0000	1.0000	100.00
34.5	1,238,350		0.0000	1.0000	100.00
35.5	1,238,350		0.0000	1.0000	100.00
36.5	1,229,163		0.0000	1.0000	100.00
37.5	1,229,163		0.0000	1.0000	100.00
38.5	1,217,081		0.0000	1.0000	100.00

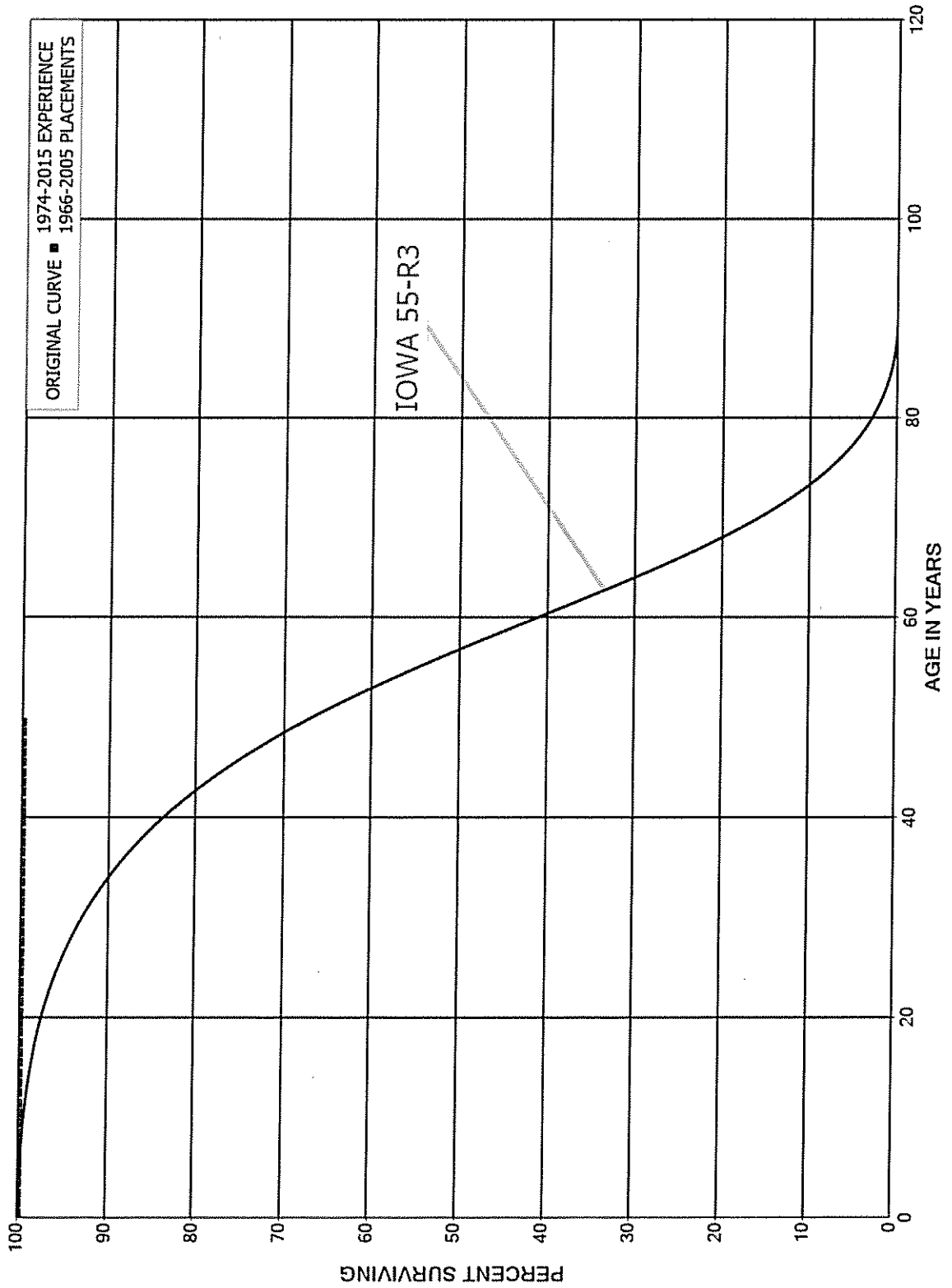
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 365.2 LAND RIGHTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1964-2009			EXPERIENCE BAND 1974-2015		
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	1,189,050		0.0000	1.0000	100.00
40.5	1,189,050		0.0000	1.0000	100.00
41.5	1,189,050		0.0000	1.0000	100.00
42.5	1,189,050		0.0000	1.0000	100.00
43.5	1,189,050		0.0000	1.0000	100.00
44.5	1,189,050		0.0000	1.0000	100.00
45.5	1,189,050		0.0000	1.0000	100.00
46.5	1,189,050		0.0000	1.0000	100.00
47.5	1,168,447		0.0000	1.0000	100.00
48.5	1,009,167		0.0000	1.0000	100.00
49.5	539,190		0.0000	1.0000	100.00
50.5	94,094		0.0000	1.0000	100.00
51.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 366.3 STRUCTURES AND IMPROVEMENTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 366.3 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1966-2005

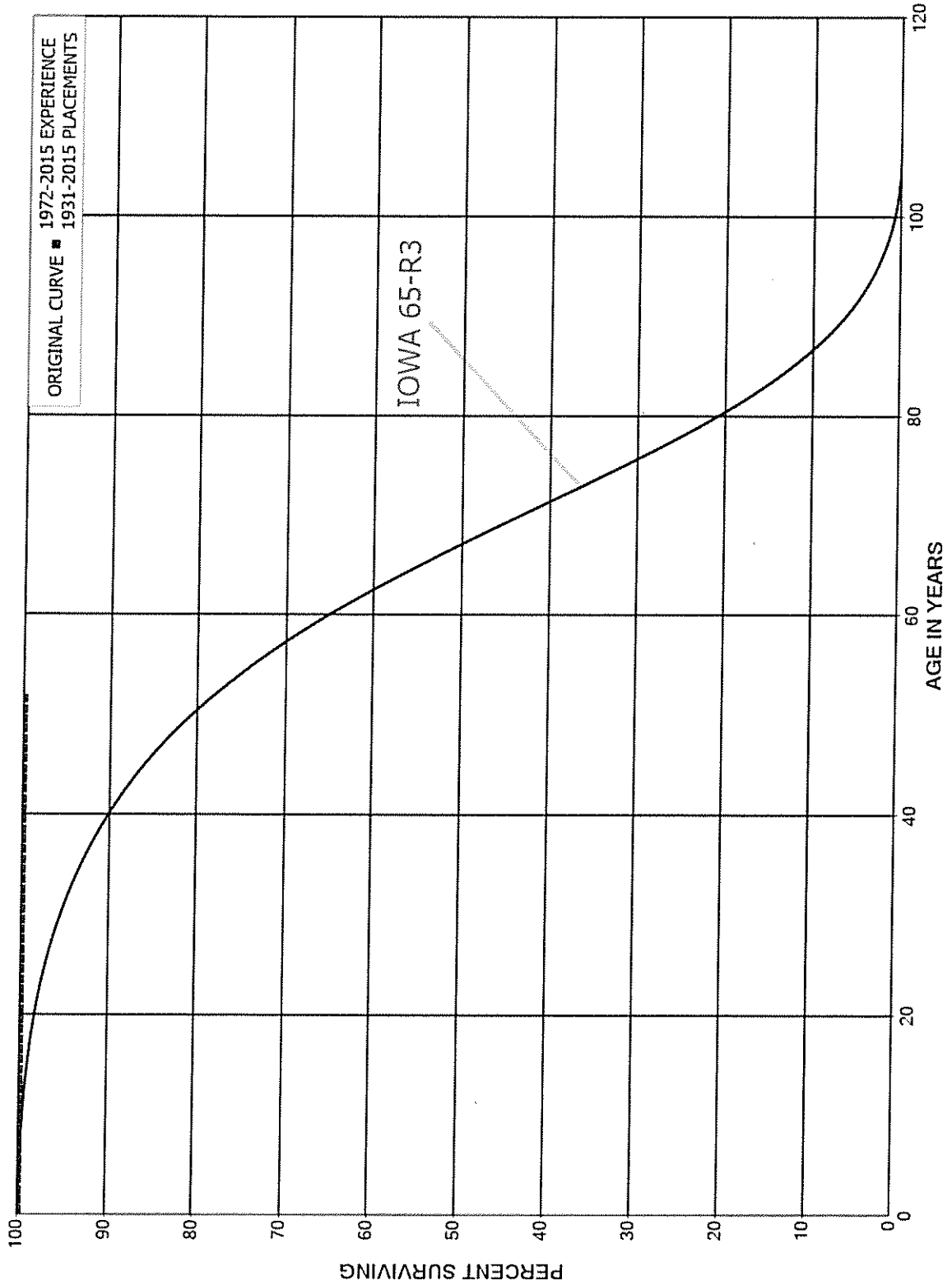
EXPERIENCE BAND 1974-2015

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	955,999		0.0000	1.0000	100.00
0.5	955,999		0.0000	1.0000	100.00
1.5	955,999		0.0000	1.0000	100.00
2.5	955,999		0.0000	1.0000	100.00
3.5	955,999		0.0000	1.0000	100.00
4.5	955,999		0.0000	1.0000	100.00
5.5	955,999		0.0000	1.0000	100.00
6.5	955,999		0.0000	1.0000	100.00
7.5	1,041,984		0.0000	1.0000	100.00
8.5	1,041,984		0.0000	1.0000	100.00
9.5	1,041,984		0.0000	1.0000	100.00
10.5	984,166		0.0000	1.0000	100.00
11.5	85,985		0.0000	1.0000	100.00
12.5	85,985		0.0000	1.0000	100.00
13.5	85,985		0.0000	1.0000	100.00
14.5	85,985		0.0000	1.0000	100.00
15.5	85,985		0.0000	1.0000	100.00
16.5	85,985		0.0000	1.0000	100.00
17.5	85,985		0.0000	1.0000	100.00
18.5	85,985		0.0000	1.0000	100.00
19.5	85,985		0.0000	1.0000	100.00
20.5	85,985		0.0000	1.0000	100.00
21.5	85,985		0.0000	1.0000	100.00
22.5	85,985		0.0000	1.0000	100.00
23.5	85,985		0.0000	1.0000	100.00
24.5	85,985		0.0000	1.0000	100.00
25.5	85,985		0.0000	1.0000	100.00
26.5	85,985		0.0000	1.0000	100.00
27.5	85,985		0.0000	1.0000	100.00
28.5	85,985		0.0000	1.0000	100.00
29.5	85,985		0.0000	1.0000	100.00
30.5	85,985		0.0000	1.0000	100.00
31.5	85,985		0.0000	1.0000	100.00
32.5	85,985		0.0000	1.0000	100.00
33.5	85,985		0.0000	1.0000	100.00
34.5	85,985		0.0000	1.0000	100.00
35.5	85,985		0.0000	1.0000	100.00
36.5	85,985		0.0000	1.0000	100.00
37.5	85,985		0.0000	1.0000	100.00
38.5	85,985		0.0000	1.0000	100.00

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 366.3 STRUCTURES AND IMPROVEMENTS
 ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1966-2005			EXPERIENCE BAND 1974-2015		
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	85,985		0.0000	1.0000	100.00
40.5	85,985		0.0000	1.0000	100.00
41.5	85,985		0.0000	1.0000	100.00
42.5	85,985		0.0000	1.0000	100.00
43.5	85,985		0.0000	1.0000	100.00
44.5	85,985		0.0000	1.0000	100.00
45.5	85,985		0.0000	1.0000	100.00
46.5	85,985		0.0000	1.0000	100.00
47.5	85,985		0.0000	1.0000	100.00
48.5	85,985		0.0000	1.0000	100.00
49.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 367 THROUGH 367.26 MAINS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 367 THROUGH 367.26 MAINS
ORIGINAL LIFE TABLE

PLACEMENT BAND 1931-2015

EXPERIENCE BAND 1972-2015

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	213,416,740		0.0000	1.0000	100.00
0.5	237,648,790		0.0000	1.0000	100.00
1.5	272,603,883		0.0000	1.0000	100.00
2.5	224,167,848		0.0000	1.0000	100.00
3.5	191,775,304	38,942	0.0002	0.9998	100.00
4.5	184,498,104		0.0000	1.0000	99.98
5.5	168,848,572		0.0000	1.0000	99.98
6.5	166,818,555		0.0000	1.0000	99.98
7.5	166,773,583	1,086	0.0000	1.0000	99.98
8.5	166,346,132		0.0000	1.0000	99.98
9.5	166,236,826	1,086	0.0000	1.0000	99.98
10.5	166,852,816	16,355	0.0001	0.9999	99.98
11.5	128,792,283		0.0000	1.0000	99.97
12.5	61,948,538		0.0000	1.0000	99.97
13.5	61,692,946		0.0000	1.0000	99.97
14.5	61,156,307		0.0000	1.0000	99.97
15.5	61,092,174	2,603	0.0000	1.0000	99.97
16.5	27,573,437		0.0000	1.0000	99.96
17.5	27,576,040	541	0.0000	1.0000	99.96
18.5	27,577,399		0.0000	1.0000	99.96
19.5	27,577,399		0.0000	1.0000	99.96
20.5	27,575,885	1,756	0.0001	0.9999	99.96
21.5	27,441,558		0.0000	1.0000	99.96
22.5	27,296,773		0.0000	1.0000	99.96
23.5	27,296,773		0.0000	1.0000	99.96
24.5	27,293,292		0.0000	1.0000	99.96
25.5	26,996,378	481	0.0000	1.0000	99.96
26.5	10,178,678		0.0000	1.0000	99.95
27.5	10,178,678		0.0000	1.0000	99.95
28.5	10,178,678	388	0.0000	1.0000	99.95
29.5	10,160,853		0.0000	1.0000	99.95
30.5	10,131,532		0.0000	1.0000	99.95
31.5	10,131,532		0.0000	1.0000	99.95
32.5	10,131,532		0.0000	1.0000	99.95
33.5	9,969,318		0.0000	1.0000	99.95
34.5	9,458,671		0.0000	1.0000	99.95
35.5	9,424,544		0.0000	1.0000	99.95
36.5	9,424,544		0.0000	1.0000	99.95
37.5	9,411,932		0.0000	1.0000	99.95
38.5	9,406,964		0.0000	1.0000	99.95

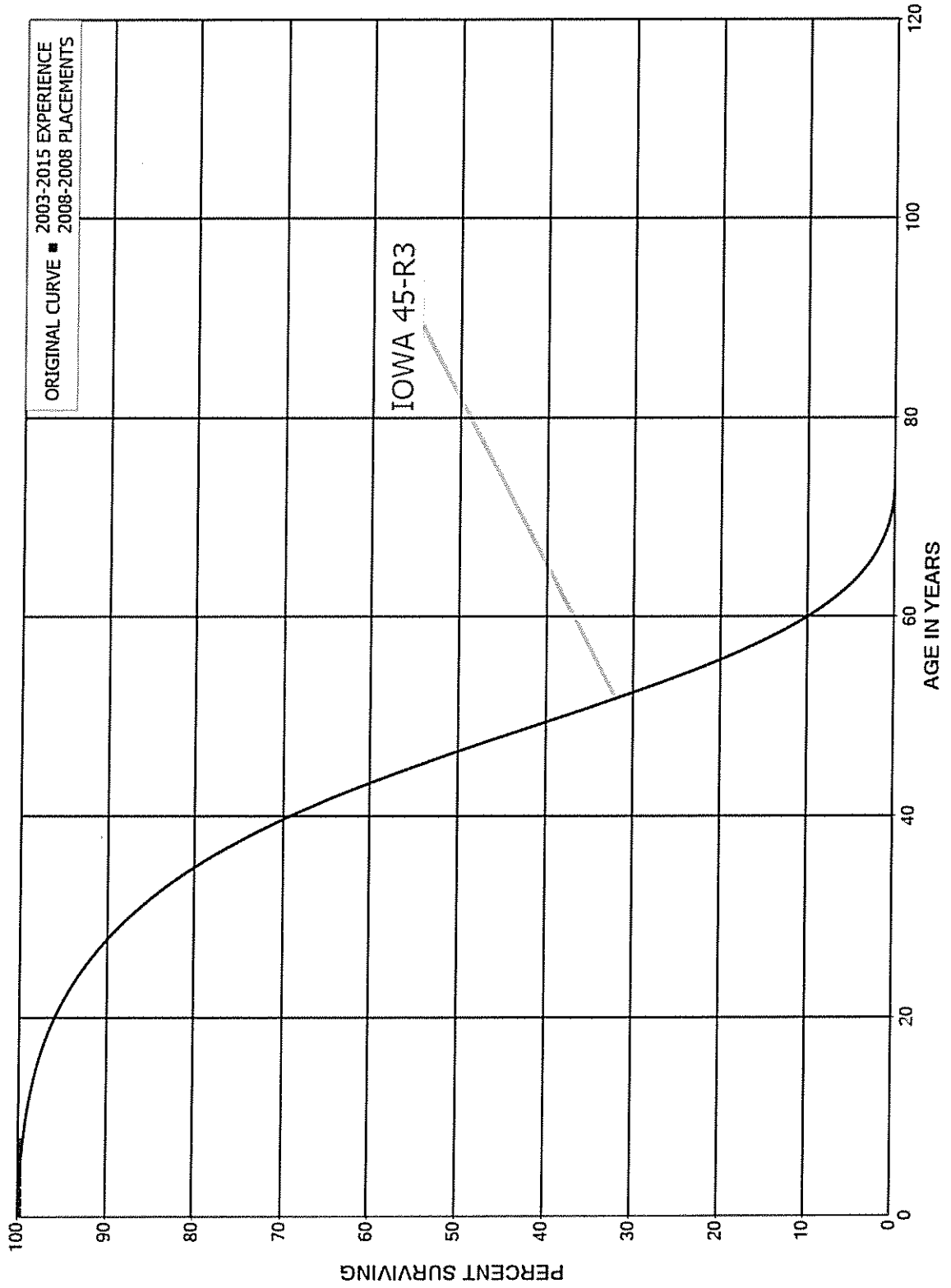
NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 367 THROUGH 367.26 MAINS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1931-2015			EXPERIENCE BAND 1972-2015		
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	8,179,539		0.0000	1.0000	99.95
40.5	8,179,539		0.0000	1.0000	99.95
41.5	8,179,539		0.0000	1.0000	99.95
42.5	8,179,539		0.0000	1.0000	99.95
43.5	8,160,658		0.0000	1.0000	99.95
44.5	8,160,658		0.0000	1.0000	99.95
45.5	8,160,658		0.0000	1.0000	99.95
46.5	8,143,634		0.0000	1.0000	99.95
47.5	8,138,763		0.0000	1.0000	99.95
48.5	8,040,677		0.0000	1.0000	99.95
49.5	4,790,948		0.0000	1.0000	99.95
50.5	631,743		0.0000	1.0000	99.95
51.5					99.95
52.5	541		0.0000		
53.5	541		0.0000		
54.5	541		0.0000		
55.5	541		0.0000		
56.5	541		0.0000		
57.5	541		0.0000		
58.5	541		0.0000		
59.5	541		0.0000		
60.5	541		0.0000		
61.5	541		0.0000		
62.5	541		0.0000		
63.5	541		0.0000		
64.5	541		0.0000		
65.5	541		0.0000		
66.5	541		0.0000		
67.5	541		0.0000		
68.5	541		0.0000		
69.5	541		0.0000		
70.5	541		0.0000		
71.5	541		0.0000		
72.5	541		0.0000		
73.5	541		0.0000		
74.5	541		0.0000		
75.5	541		0.0000		
76.5	541		0.0000		
77.5	541		0.0000		
78.5	541		0.0000		

NORTHWEST NATURAL GAS COMPANY
 ACCOUNTS 367 THROUGH 367.26 MAINS
 ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1931-2015			EXPERIENCE BAND 1972-2015		
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	541		0.0000		
80.5	541		0.0000		
81.5	541		0.0000		
82.5	541		0.0000		
83.5	541		0.0000		
84.5					

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 368 COMPRESSOR STATION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 368 COMPRESSOR STATION EQUIPMENT

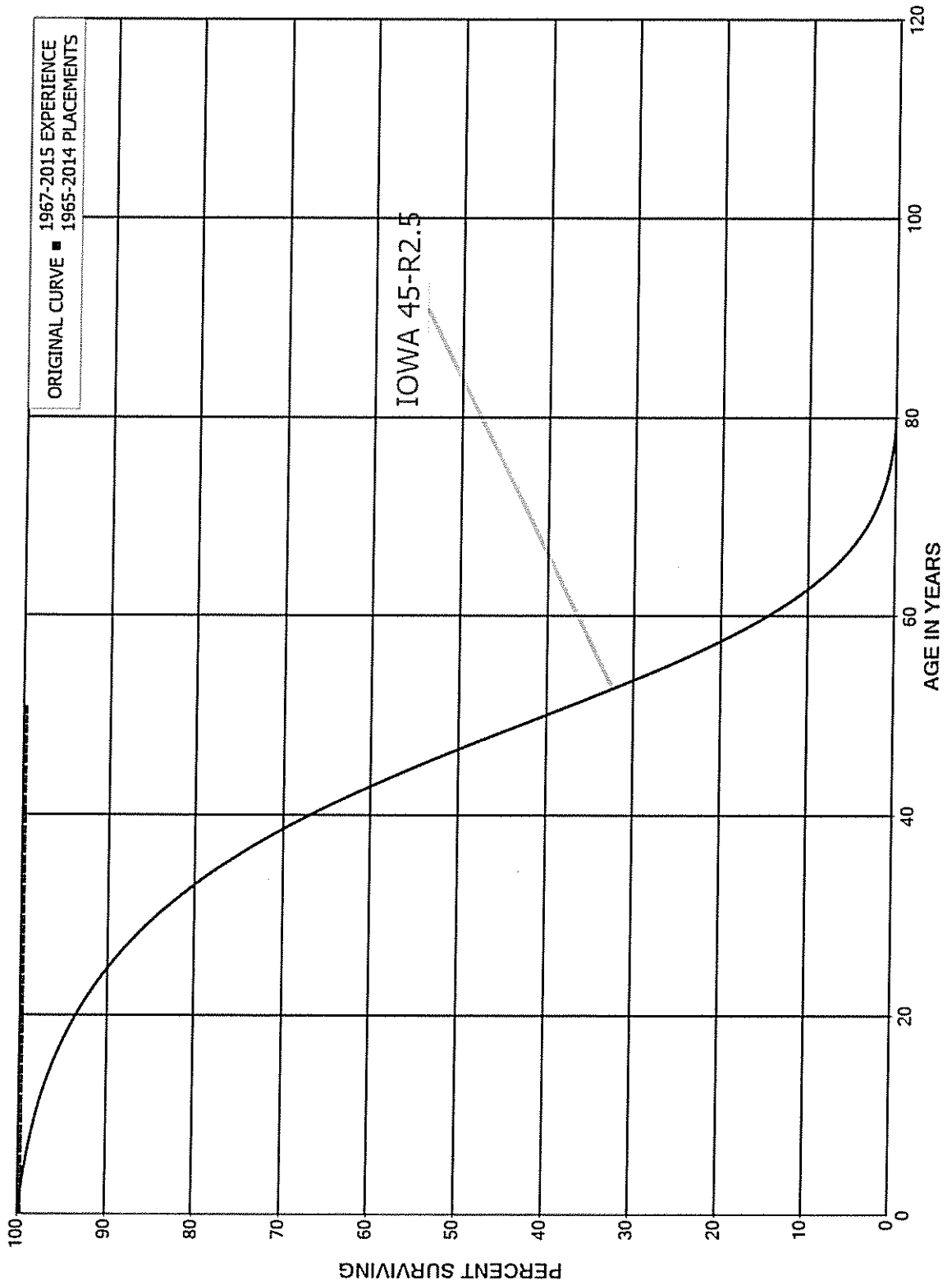
ORIGINAL LIFE TABLE

PLACEMENT BAND 2008-2008

EXPERIENCE BAND 2003-2015

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	7,723,454		0.0000	1.0000	100.00
0.5	7,723,454		0.0000	1.0000	100.00
1.5	7,723,454		0.0000	1.0000	100.00
2.5	7,723,454		0.0000	1.0000	100.00
3.5	7,723,454		0.0000	1.0000	100.00
4.5	7,723,454		0.0000	1.0000	100.00
5.5	7,723,454		0.0000	1.0000	100.00
6.5	7,723,454		0.0000	1.0000	100.00
7.5					100.00

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 369 REGULATING STATION EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 369 REGULATING STATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1965-2014

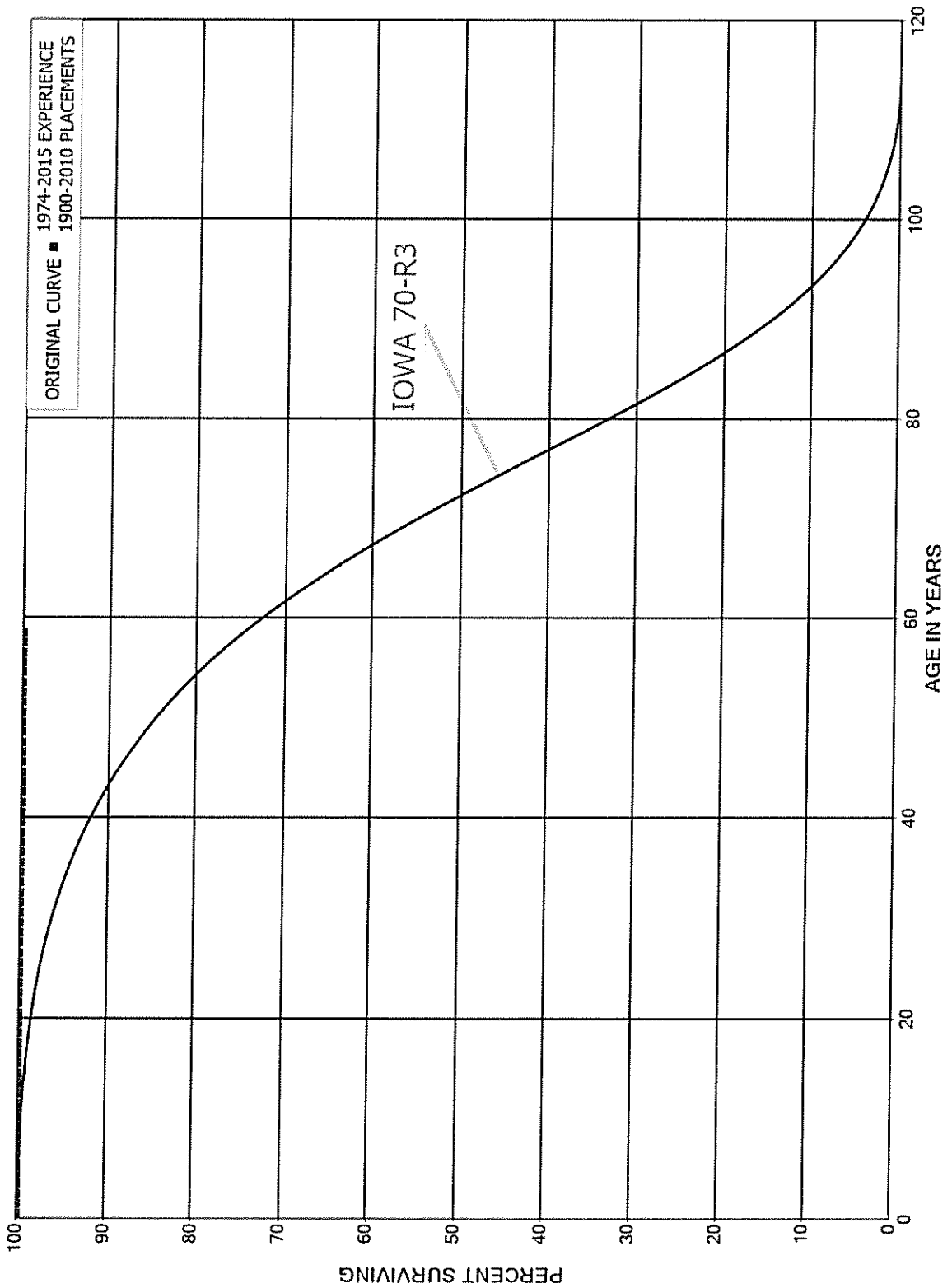
EXPERIENCE BAND 1967-2015

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	3,811,857		0.0000	1.0000	100.00
0.5	3,838,490	585	0.0002	0.9998	100.00
1.5	3,976,274		0.0000	1.0000	99.98
2.5	3,882,816		0.0000	1.0000	99.98
3.5	3,674,347		0.0000	1.0000	99.98
4.5	3,674,347		0.0000	1.0000	99.98
5.5	3,674,347		0.0000	1.0000	99.98
6.5	3,674,347		0.0000	1.0000	99.98
7.5	3,673,486	638	0.0002	0.9998	99.98
8.5	3,672,766		0.0000	1.0000	99.97
9.5	3,527,854		0.0000	1.0000	99.97
10.5	3,527,854		0.0000	1.0000	99.97
11.5	396,697		0.0000	1.0000	99.97
12.5	207,616		0.0000	1.0000	99.97
13.5	195,625		0.0000	1.0000	99.97
14.5	195,625		0.0000	1.0000	99.97
15.5	195,625		0.0000	1.0000	99.97
16.5	195,625		0.0000	1.0000	99.97
17.5	195,625		0.0000	1.0000	99.97
18.5	195,625		0.0000	1.0000	99.97
19.5	195,625		0.0000	1.0000	99.97
20.5	195,625		0.0000	1.0000	99.97
21.5	195,625		0.0000	1.0000	99.97
22.5	195,625		0.0000	1.0000	99.97
23.5	118,019		0.0000	1.0000	99.97
24.5	118,019		0.0000	1.0000	99.97
25.5	118,019		0.0000	1.0000	99.97
26.5	118,019		0.0000	1.0000	99.97
27.5	118,019		0.0000	1.0000	99.97
28.5	91,081		0.0000	1.0000	99.97
29.5	91,081		0.0000	1.0000	99.97
30.5	91,081		0.0000	1.0000	99.97
31.5	91,081		0.0000	1.0000	99.97
32.5	91,081		0.0000	1.0000	99.97
33.5	91,081		0.0000	1.0000	99.97
34.5	91,081		0.0000	1.0000	99.97
35.5	91,081		0.0000	1.0000	99.97
36.5	91,081		0.0000	1.0000	99.97
37.5	91,081		0.0000	1.0000	99.97
38.5	45,638		0.0000	1.0000	99.97

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 369 REGULATING STATION EQUIPMENT
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1965-2014			EXPERIENCE BAND 1967-2015		
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	45,638		0.0000	1.0000	99.97
40.5	45,638		0.0000	1.0000	99.97
41.5	45,638		0.0000	1.0000	99.97
42.5	45,638		0.0000	1.0000	99.97
43.5	45,638		0.0000	1.0000	99.97
44.5	45,638		0.0000	1.0000	99.97
45.5	45,638		0.0000	1.0000	99.97
46.5	45,638		0.0000	1.0000	99.97
47.5	45,638		0.0000	1.0000	99.97
48.5	40,610		0.0000	1.0000	99.97
49.5	14,697		0.0000	1.0000	99.97
50.5					99.97

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 374.2 LAND RIGHTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 374.2 LAND RIGHTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1900-2010

EXPERIENCE BAND 1974-2015

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	1,655,411		0.0000	1.0000	100.00
0.5	1,655,411		0.0000	1.0000	100.00
1.5	1,636,087		0.0000	1.0000	100.00
2.5	1,648,408		0.0000	1.0000	100.00
3.5	1,648,408		0.0000	1.0000	100.00
4.5	1,648,408		0.0000	1.0000	100.00
5.5	1,581,533		0.0000	1.0000	100.00
6.5	1,579,331		0.0000	1.0000	100.00
7.5	1,579,331		0.0000	1.0000	100.00
8.5	1,579,331		0.0000	1.0000	100.00
9.5	1,579,331		0.0000	1.0000	100.00
10.5	1,580,081		0.0000	1.0000	100.00
11.5	1,183,528		0.0000	1.0000	100.00
12.5	881,954		0.0000	1.0000	100.00
13.5	758,946		0.0000	1.0000	100.00
14.5	706,031		0.0000	1.0000	100.00
15.5	691,473		0.0000	1.0000	100.00
16.5	667,540		0.0000	1.0000	100.00
17.5	652,415		0.0000	1.0000	100.00
18.5	627,723		0.0000	1.0000	100.00
19.5	609,614		0.0000	1.0000	100.00
20.5	496,900		0.0000	1.0000	100.00
21.5	453,664		0.0000	1.0000	100.00
22.5	423,787		0.0000	1.0000	100.00
23.5	360,634		0.0000	1.0000	100.00
24.5	175,569		0.0000	1.0000	100.00
25.5	165,563		0.0000	1.0000	100.00
26.5	90,569		0.0000	1.0000	100.00
27.5	86,667		0.0000	1.0000	100.00
28.5	76,934		0.0000	1.0000	100.00
29.5	73,182		0.0000	1.0000	100.00
30.5	68,403		0.0000	1.0000	100.00
31.5	67,639		0.0000	1.0000	100.00
32.5	67,387		0.0000	1.0000	100.00
33.5	66,348		0.0000	1.0000	100.00
34.5	57,628		0.0000	1.0000	100.00
35.5	56,063		0.0000	1.0000	100.00
36.5	54,474		0.0000	1.0000	100.00
37.5	47,629		0.0000	1.0000	100.00
38.5	37,352		0.0000	1.0000	100.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 374.2 LAND RIGHTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1900-2010

EXPERIENCE BAND 1974-2015

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	36,548		0.0000	1.0000	100.00
40.5	32,908		0.0000	1.0000	100.00
41.5	29,604		0.0000	1.0000	100.00
42.5	29,604		0.0000	1.0000	100.00
43.5	29,604		0.0000	1.0000	100.00
44.5	27,097		0.0000	1.0000	100.00
45.5	27,097		0.0000	1.0000	100.00
46.5	27,097		0.0000	1.0000	100.00
47.5	17,428		0.0000	1.0000	100.00
48.5	17,428		0.0000	1.0000	100.00
49.5	17,428		0.0000	1.0000	100.00
50.5	17,428		0.0000	1.0000	100.00
51.5	16,678		0.0000	1.0000	100.00
52.5	13,253		0.0000	1.0000	100.00
53.5	13,153		0.0000	1.0000	100.00
54.5	13,153		0.0000	1.0000	100.00
55.5	12,953		0.0000	1.0000	100.00
56.5	12,953		0.0000	1.0000	100.00
57.5	12,953		0.0000	1.0000	100.00
58.5	12,953		0.0000	1.0000	100.00
59.5	1,813		0.0000	1.0000	100.00
60.5	1,813		0.0000	1.0000	100.00
61.5	1,813		0.0000	1.0000	100.00
62.5	1,813		0.0000	1.0000	100.00
63.5					100.00
64.5					
65.5					
66.5					
67.5					
68.5					
69.5					
70.5					
71.5					
72.5					
73.5	208,257		0.0000		
74.5	208,257		0.0000		
75.5	208,257		0.0000		
76.5	208,257		0.0000		
77.5	208,257		0.0000		
78.5	208,257		0.0000		

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 374.2 LAND RIGHTS

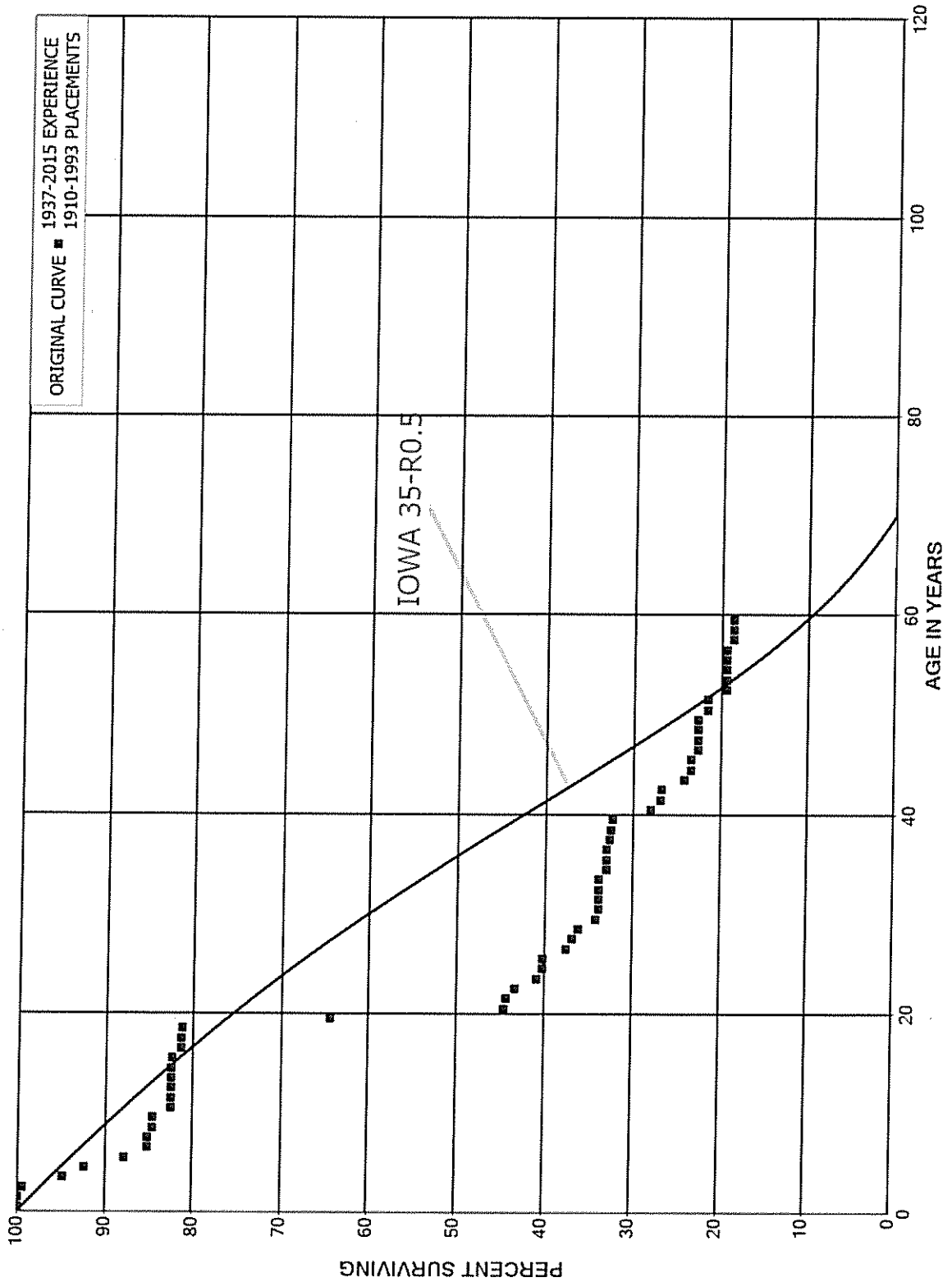
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1900-2010

EXPERIENCE BAND 1974-2015

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	208,257		0.0000		
80.5	208,257		0.0000		
81.5	208,257		0.0000		
82.5	208,257		0.0000		
83.5	208,257		0.0000		
84.5	208,257		0.0000		
85.5	208,257		0.0000		
86.5	208,257		0.0000		
87.5	208,257		0.0000		
88.5	208,257		0.0000		
89.5	208,257		0.0000		
90.5	208,257		0.0000		
91.5	208,257		0.0000		
92.5	208,257		0.0000		
93.5	208,257		0.0000		
94.5	208,257		0.0000		
95.5	208,257		0.0000		
96.5	208,257		0.0000		
97.5	208,257		0.0000		
98.5	208,257		0.0000		
99.5	208,257		0.0000		
100.5	208,257		0.0000		
101.5	208,257		0.0000		
102.5	208,257		0.0000		
103.5	208,257		0.0000		
104.5	208,257		0.0000		
105.5	208,257		0.0000		
106.5	208,257		0.0000		
107.5	208,257		0.0000		
108.5	208,257		0.0000		
109.5	208,257		0.0000		
110.5	208,257		0.0000		
111.5	208,257		0.0000		
112.5	208,257		0.0000		
113.5	208,257		0.0000		
114.5	208,257		0.0000		
115.5					

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 375 STRUCTURES AND IMPROVEMENTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY
ACCOUNT 375 STRUCTURES AND IMPROVEMENTS
ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-1993			EXPERIENCE BAND 1937-2015		
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	108,808		0.0000	1.0000	100.00
0.5	108,808	119	0.0011	0.9989	100.00
1.5	108,808	582	0.0053	0.9947	99.89
2.5	108,808	5,004	0.0460	0.9540	99.36
3.5	108,808	2,755	0.0253	0.9747	94.79
4.5	108,808	5,302	0.0487	0.9513	92.39
5.5	108,808	3,403	0.0313	0.9687	87.89
6.5	108,808		0.0000	1.0000	85.14
7.5	108,808	611	0.0056	0.9944	85.14
8.5	108,808		0.0000	1.0000	84.66
9.5	110,952	2,752	0.0248	0.9752	84.66
10.5	110,952		0.0000	1.0000	82.56
11.5	110,952		0.0000	1.0000	82.56
12.5	110,952		0.0000	1.0000	82.56
13.5	110,952		0.0000	1.0000	82.56
14.5	110,952	170	0.0015	0.9985	82.56
15.5	99,983	1,206	0.0121	0.9879	82.43
16.5	99,983		0.0000	1.0000	81.44
17.5	99,983	167	0.0017	0.9983	81.44
18.5	99,983	20,760	0.2076	0.7924	81.30
19.5	99,553	30,809	0.3095	0.6905	64.42
20.5	99,553	506	0.0051	0.9949	44.48
21.5	99,553	2,221	0.0223	0.9777	44.26
22.5	97,646	5,411	0.0554	0.9446	43.27
23.5	97,496	1,664	0.0171	0.9829	40.87
24.5	97,496	118	0.0012	0.9988	40.18
25.5	72,026	4,717	0.0655	0.9345	40.13
26.5	72,026	1,209	0.0168	0.9832	37.50
27.5	72,026	1,250	0.0174	0.9826	36.87
28.5	72,026	4,092	0.0568	0.9432	36.23
29.5	68,210	588	0.0086	0.9914	34.17
30.5	67,622		0.0000	1.0000	33.88
31.5	67,622		0.0000	1.0000	33.88
32.5	67,622	23	0.0003	0.9997	33.88
33.5	67,622	1,870	0.0277	0.9723	33.87
34.5	65,874		0.0000	1.0000	32.93
35.5	65,874		0.0000	1.0000	32.93
36.5	65,874	639	0.0097	0.9903	32.93
37.5	65,874	150	0.0023	0.9977	32.61
38.5	65,874	588	0.0089	0.9911	32.53

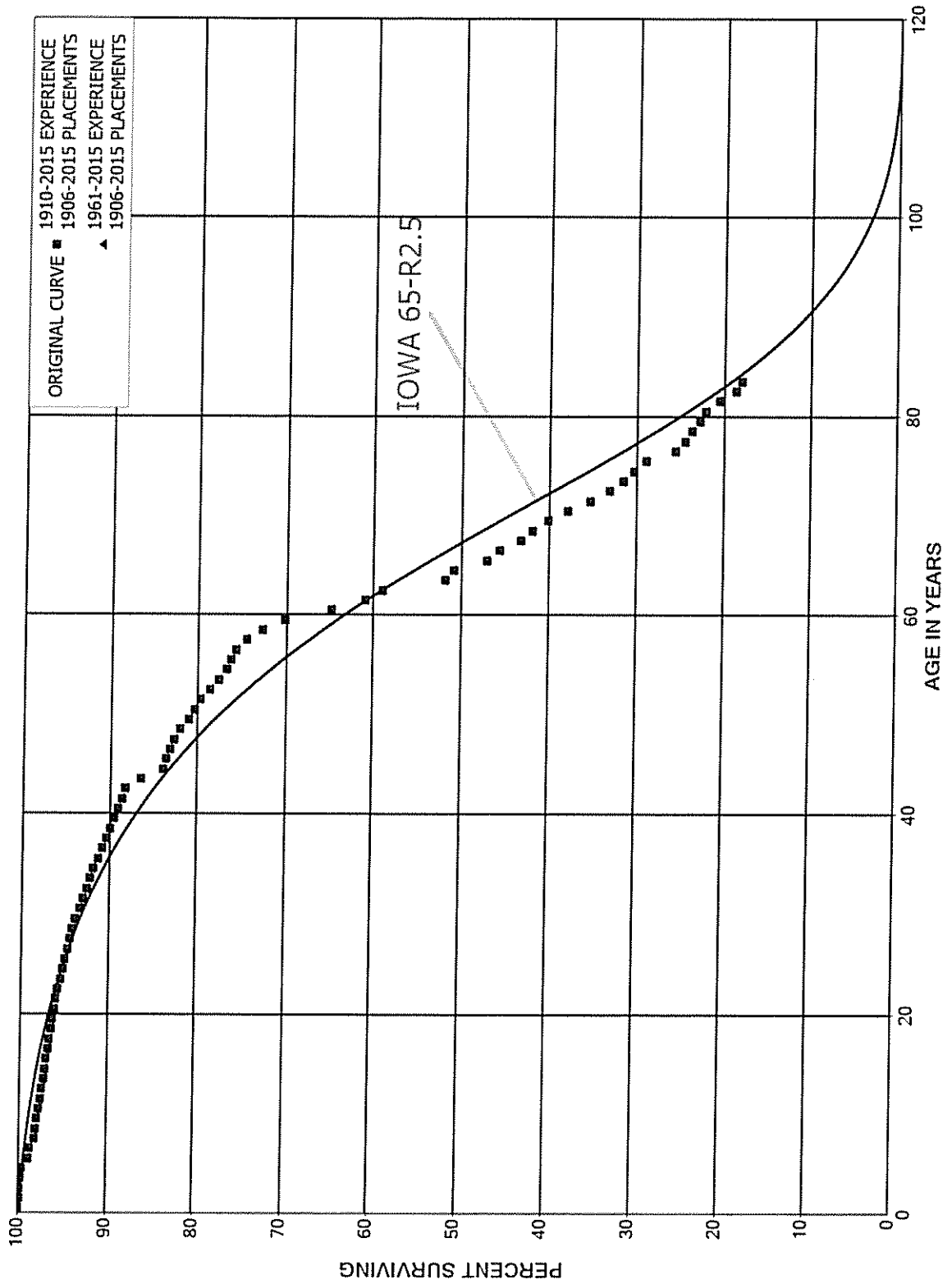
NORTHWEST NATURAL GAS COMPANY
ACCOUNT 375 STRUCTURES AND IMPROVEMENTS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-1993			EXPERIENCE BAND 1937-2015			
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	65,874	8,863	0.1345	0.8655	32.24	
40.5	57,179	2,300	0.0402	0.9598	27.91	
41.5	54,879	167	0.0030	0.9970	26.78	
42.5	54,879	5,090	0.0927	0.9073	26.70	
43.5	54,757	1,928	0.0352	0.9648	24.23	
44.5	52,840		0.0000	1.0000	23.37	
45.5	52,840	1,623	0.0307	0.9693	23.37	
46.5	52,840	107	0.0020	0.9980	22.65	
47.5	52,840	4	0.0001	0.9999	22.61	
48.5	52,840		0.0000	1.0000	22.61	
49.5	52,840	2,607	0.0493	0.9507	22.61	
50.5	52,542		0.0000	1.0000	21.49	
51.5	58,348	5,806	0.0995	0.9005	21.49	
52.5	52,542		0.0000	1.0000	19.35	
53.5	49,800		0.0000	1.0000	19.35	
54.5	49,074		0.0000	1.0000	19.35	
55.5	42,091		0.0000	1.0000	19.35	
56.5	41,220	1,625	0.0394	0.9606	19.35	
57.5	37,913		0.0000	1.0000	18.59	
58.5	37,913		0.0000	1.0000	18.59	
59.5	4,985		0.0000	1.0000	18.59	
60.5	4,985		0.0000	1.0000	18.59	
61.5	4,985		0.0000	1.0000	18.59	
62.5	4,971		0.0000	1.0000	18.59	
63.5	4,971		0.0000	1.0000	18.59	
64.5	4,971		0.0000	1.0000	18.59	
65.5	4,971		0.0000	1.0000	18.59	
66.5	4,971		0.0000	1.0000	18.59	
67.5	4,971		0.0000	1.0000	18.59	
68.5	4,971		0.0000	1.0000	18.59	
69.5	4,971		0.0000	1.0000	18.59	
70.5	4,971		0.0000	1.0000	18.59	
71.5	4,971		0.0000	1.0000	18.59	
72.5	4,971		0.0000	1.0000	18.59	
73.5	4,971		0.0000	1.0000	18.59	
74.5	4,971		0.0000	1.0000	18.59	
75.5	4,971		0.0000	1.0000	18.59	
76.5	4,971		0.0000	1.0000	18.59	
77.5	4,971		0.0000	1.0000	18.59	
78.5	4,971		0.0000	1.0000	18.59	

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 375 STRUCTURES AND IMPROVEMENTS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-1993			EXPERIENCE BAND 1937-2015		
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	4,971		0.0000	1.0000	18.59
80.5	4,971		0.0000	1.0000	18.59
81.5	4,971		0.0000	1.0000	18.59
82.5	4,971		0.0000	1.0000	18.59
83.5	4,971		0.0000	1.0000	18.59
84.5	4,971		0.0000	1.0000	18.59
85.5	4,971		0.0000	1.0000	18.59
86.5	4,971		0.0000	1.0000	18.59
87.5	4,971		0.0000	1.0000	18.59
88.5	2,827		0.0000	1.0000	18.59
89.5	2,827		0.0000	1.0000	18.59
90.5	2,827		0.0000	1.0000	18.59
91.5	2,827		0.0000	1.0000	18.59
92.5	2,827		0.0000	1.0000	18.59
93.5	2,827		0.0000	1.0000	18.59
94.5	2,827		0.0000	1.0000	18.59
95.5	2,827		0.0000	1.0000	18.59
96.5	2,827		0.0000	1.0000	18.59
97.5	2,827		0.0000	1.0000	18.59
98.5	2,827		0.0000	1.0000	18.59
99.5	2,827		0.0000	1.0000	18.59
100.5	2,827		0.0000	1.0000	18.59
101.5	2,827		0.0000	1.0000	18.59
102.5					18.59

NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 376.11 AND 376.12 MAINS - HP
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 376.11 AND 376.12 MAINS - HP

ORIGINAL LIFE TABLE

PLACEMENT BAND 1906-2015

EXPERIENCE BAND 1910-2015

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	1,092,857,360	206,782	0.0002	0.9998	100.00
0.5	1,060,017,475	1,131,315	0.0011	0.9989	99.98
1.5	1,032,101,078	896,731	0.0009	0.9991	99.87
2.5	1,009,292,672	1,049,145	0.0010	0.9990	99.79
3.5	980,353,709	1,157,189	0.0012	0.9988	99.68
4.5	952,687,308	7,061,173	0.0074	0.9926	99.57
5.5	925,163,567	1,466,474	0.0016	0.9984	98.83
6.5	892,625,517	4,079,765	0.0046	0.9954	98.67
7.5	857,586,489	1,164,530	0.0014	0.9986	98.22
8.5	817,795,080	1,124,705	0.0014	0.9986	98.09
9.5	780,933,311	1,646,940	0.0021	0.9979	97.95
10.5	742,172,313	1,739,957	0.0023	0.9977	97.75
11.5	706,111,455	1,191,082	0.0017	0.9983	97.52
12.5	657,864,068	941,500	0.0014	0.9986	97.35
13.5	626,996,236	1,092,171	0.0017	0.9983	97.21
14.5	598,798,069	781,907	0.0013	0.9987	97.04
15.5	566,996,515	1,073,846	0.0019	0.9981	96.92
16.5	536,185,225	890,232	0.0017	0.9983	96.73
17.5	504,971,037	860,855	0.0017	0.9983	96.57
18.5	468,004,548	764,708	0.0016	0.9984	96.41
19.5	432,010,503	841,849	0.0019	0.9981	96.25
20.5	401,671,923	703,202	0.0018	0.9982	96.06
21.5	370,866,155	758,632	0.0020	0.9980	95.89
22.5	341,252,908	936,746	0.0027	0.9973	95.70
23.5	314,433,627	892,127	0.0028	0.9972	95.44
24.5	291,249,595	806,938	0.0028	0.9972	95.17
25.5	273,474,646	739,182	0.0027	0.9973	94.90
26.5	255,404,188	734,340	0.0029	0.9971	94.64
27.5	239,800,230	640,664	0.0027	0.9973	94.37
28.5	225,766,558	673,386	0.0030	0.9970	94.12
29.5	209,503,225	1,214,380	0.0058	0.9942	93.84
30.5	192,262,065	767,440	0.0040	0.9960	93.30
31.5	174,519,105	711,725	0.0041	0.9959	92.92
32.5	162,430,005	570,642	0.0035	0.9965	92.54
33.5	150,650,899	647,807	0.0043	0.9957	92.22
34.5	137,751,563	864,084	0.0063	0.9937	91.82
35.5	125,633,894	635,746	0.0051	0.9949	91.25
36.5	113,998,026	534,725	0.0047	0.9953	90.79
37.5	104,748,971	415,351	0.0040	0.9960	90.36
38.5	98,943,417	544,979	0.0055	0.9945	90.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 376.11 AND 376.12 MAINS - HP

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1906-2015

EXPERIENCE BAND 1910-2015

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	93,577,938	462,725	0.0049	0.9951	89.51
40.5	88,718,022	425,445	0.0048	0.9952	89.06
41.5	82,792,105	344,620	0.0042	0.9958	88.64
42.5	76,570,908	1,529,049	0.0200	0.9800	88.27
43.5	70,216,768	2,067,100	0.0294	0.9706	86.50
44.5	62,674,541	239,660	0.0038	0.9962	83.96
45.5	57,669,038	310,769	0.0054	0.9946	83.64
46.5	52,073,679	308,756	0.0059	0.9941	83.19
47.5	46,387,029	376,635	0.0081	0.9919	82.69
48.5	41,388,210	508,780	0.0123	0.9877	82.02
49.5	34,458,464	249,845	0.0073	0.9927	81.01
50.5	28,622,713	263,484	0.0092	0.9908	80.43
51.5	22,780,550	312,072	0.0137	0.9863	79.69
52.5	17,885,461	227,450	0.0127	0.9873	78.59
53.5	16,474,828	175,112	0.0106	0.9894	77.59
54.5	12,982,955	86,240	0.0066	0.9934	76.77
55.5	9,500,795	67,938	0.0072	0.9928	76.26
56.5	7,339,188	114,038	0.0155	0.9845	75.71
57.5	5,305,728	130,733	0.0246	0.9754	74.54
58.5	4,086,471	139,348	0.0341	0.9659	72.70
59.5	1,744,679	134,895	0.0773	0.9227	70.22
60.5	1,521,647	90,810	0.0597	0.9403	64.79
61.5	1,408,306	45,876	0.0326	0.9674	60.93
62.5	1,324,946	159,256	0.1202	0.8798	58.94
63.5	1,125,092	20,988	0.0187	0.9813	51.86
64.5	1,091,538	81,978	0.0751	0.9249	50.89
65.5	992,658	31,261	0.0315	0.9685	47.07
66.5	940,595	49,289	0.0524	0.9476	45.58
67.5	857,055	27,934	0.0326	0.9674	43.20
68.5	680,691	28,700	0.0422	0.9578	41.79
69.5	633,081	35,007	0.0553	0.9447	40.03
70.5	593,737	39,112	0.0659	0.9341	37.81
71.5	552,362	34,923	0.0632	0.9368	35.32
72.5	517,446	24,013	0.0464	0.9536	33.09
73.5	485,871	19,045	0.0392	0.9608	31.55
74.5	461,462	22,024	0.0477	0.9523	30.32
75.5	434,553	51,180	0.1178	0.8822	28.87
76.5	387,127	16,842	0.0435	0.9565	25.47
77.5	361,713	10,588	0.0293	0.9707	24.36
78.5	348,896	13,710	0.0393	0.9607	23.65

NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 376.11 AND 376.12 MAINS - HP

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1906-2015			EXPERIENCE BAND 1910-2015			
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	341,737	10,524	0.0308	0.9692	22.72	
80.5	333,563	23,330	0.0699	0.9301	22.02	
81.5	315,965	28,304	0.0896	0.9104	20.48	
82.5	287,079	10,767	0.0375	0.9625	18.64	
83.5	290,057	1,164	0.0040	0.9960	17.95	
84.5	302,338	14,785	0.0489	0.9511	17.87	
85.5	234,077	763	0.0033	0.9967	17.00	
86.5	231,072		0.0000	1.0000	16.94	
87.5	213,925	294	0.0014	0.9986	16.94	
88.5	205,950	8,018	0.0389	0.9611	16.92	
89.5	172,148	3,684	0.0214	0.9786	16.26	
90.5	151,227	2,017	0.0133	0.9867	15.91	
91.5	143,628	9,320	0.0649	0.9351	15.70	
92.5	115,614	500	0.0043	0.9957	14.68	
93.5	96,332	33	0.0003	0.9997	14.62	
94.5	79,430	113	0.0014	0.9986	14.61	
95.5	69,989	252	0.0036	0.9964	14.59	
96.5	91,750	460	0.0050	0.9950	14.54	
97.5	86,957	2,709	0.0311	0.9689	14.47	
98.5	81,445	4,135	0.0508	0.9492	14.02	
99.5	66,934	913	0.0136	0.9864	13.31	
100.5	64,912	4,783	0.0737	0.9263	13.12	
101.5	60,534	5,719	0.0945	0.9055	12.16	
102.5	36,713	4,399	0.1198	0.8802	11.01	
103.5	28,733	52	0.0018	0.9982	9.69	
104.5	31,249	16	0.0005	0.9995	9.67	
105.5	12,111		0.0000	1.0000	9.67	
106.5	38		0.0000	1.0000	9.67	
107.5	38		0.0000	1.0000	9.67	
108.5	38		0.0000	1.0000	9.67	
109.5					9.67	

NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 376.11 AND 376.12 MAINS - HP

ORIGINAL LIFE TABLE

PLACEMENT BAND 1906-2015

EXPERIENCE BAND 1961-2015

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	1,072,813,300	206,782	0.0002	0.9998	100.00
0.5	1,044,057,187	1,131,315	0.0011	0.9989	99.98
1.5	1,019,150,080	896,731	0.0009	0.9991	99.87
2.5	999,362,638	1,049,145	0.0010	0.9990	99.78
3.5	972,644,303	1,157,189	0.0012	0.9988	99.68
4.5	949,144,402	7,061,173	0.0074	0.9926	99.56
5.5	921,867,966	1,466,474	0.0016	0.9984	98.82
6.5	889,485,276	4,079,765	0.0046	0.9954	98.66
7.5	854,647,999	1,164,530	0.0014	0.9986	98.21
8.5	815,070,508	1,124,705	0.0014	0.9986	98.08
9.5	778,340,661	1,646,940	0.0021	0.9979	97.94
10.5	739,674,862	1,739,957	0.0024	0.9976	97.73
11.5	703,696,718	1,191,082	0.0017	0.9983	97.50
12.5	655,536,043	941,500	0.0014	0.9986	97.34
13.5	625,010,505	1,092,171	0.0017	0.9983	97.20
14.5	596,912,911	781,907	0.0013	0.9987	97.03
15.5	565,136,218	1,073,621	0.0019	0.9981	96.90
16.5	534,358,158	890,232	0.0017	0.9983	96.72
17.5	503,164,627	860,855	0.0017	0.9983	96.56
18.5	466,217,907	764,708	0.0016	0.9984	96.39
19.5	430,247,764	841,849	0.0020	0.9980	96.23
20.5	399,933,634	703,202	0.0018	0.9982	96.05
21.5	369,149,989	758,632	0.0021	0.9979	95.88
22.5	339,566,555	936,746	0.0028	0.9972	95.68
23.5	312,768,250	892,127	0.0029	0.9971	95.42
24.5	289,601,825	806,938	0.0028	0.9972	95.14
25.5	271,843,472	739,182	0.0027	0.9973	94.88
26.5	253,812,026	734,340	0.0029	0.9971	94.62
27.5	238,213,105	640,664	0.0027	0.9973	94.35
28.5	224,253,847	673,386	0.0030	0.9970	94.09
29.5	208,123,752	1,214,380	0.0058	0.9942	93.81
30.5	190,998,509	767,440	0.0040	0.9960	93.26
31.5	173,320,696	711,725	0.0041	0.9959	92.89
32.5	161,334,858	570,642	0.0035	0.9965	92.51
33.5	149,643,881	647,807	0.0043	0.9957	92.18
34.5	136,916,868	864,084	0.0063	0.9937	91.78
35.5	125,128,539	635,746	0.0051	0.9949	91.20
36.5	113,562,810	534,725	0.0047	0.9953	90.74
37.5	104,368,949	415,351	0.0040	0.9960	90.31
38.5	98,590,125	544,979	0.0055	0.9945	89.95

NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 376.11 AND 376.12 MAINS - HP

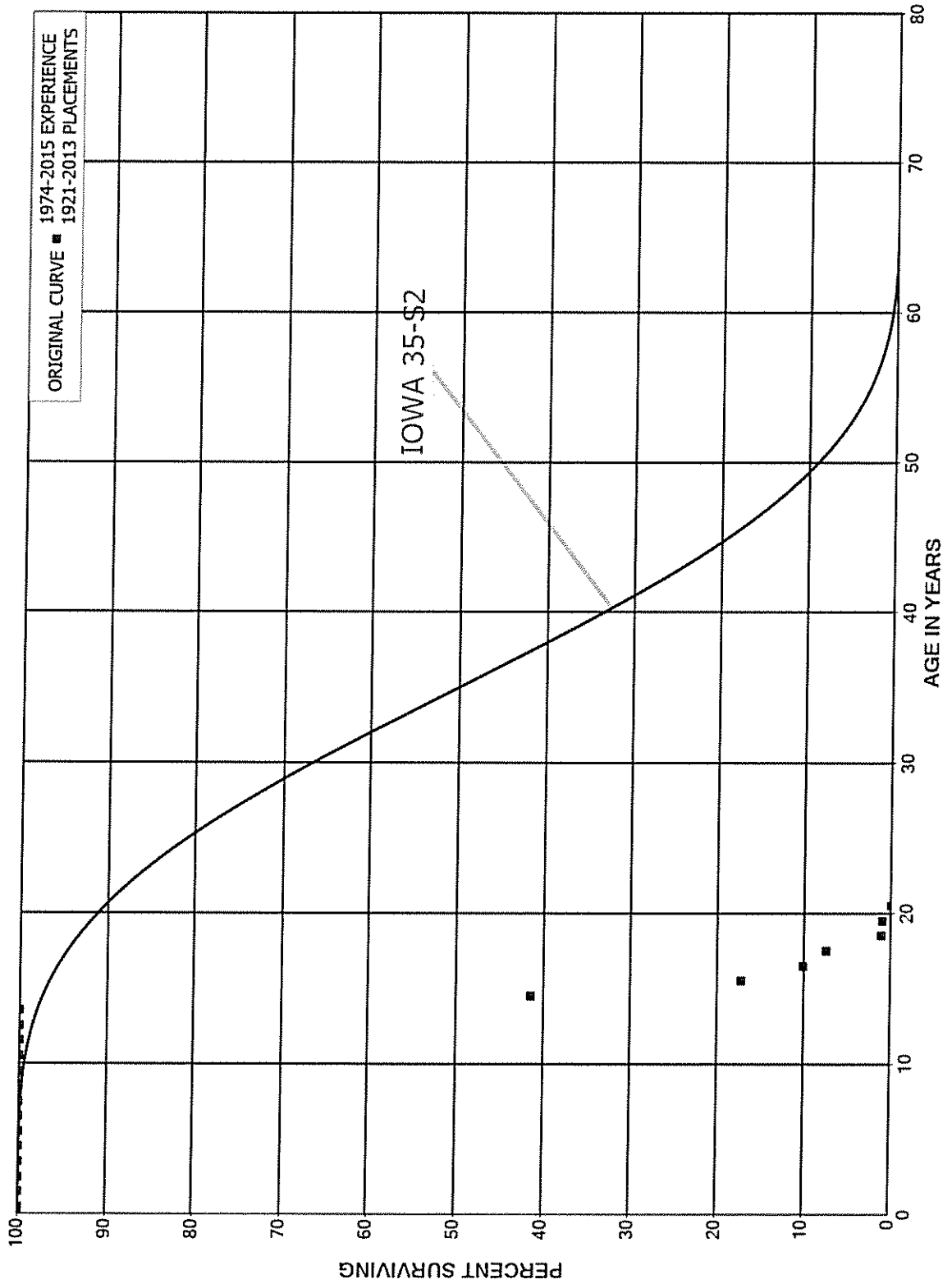
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1906-2015			EXPERIENCE BAND 1961-2015		
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	93,322,319	462,725	0.0050	0.9950	89.45
40.5	88,490,322	425,445	0.0048	0.9952	89.01
41.5	82,576,868	344,620	0.0042	0.9958	88.58
42.5	76,401,732	1,529,049	0.0200	0.9800	88.21
43.5	70,048,876	2,067,100	0.0295	0.9705	86.45
44.5	62,534,380	239,660	0.0038	0.9962	83.90
45.5	57,538,746	310,769	0.0054	0.9946	83.58
46.5	51,949,531	308,756	0.0059	0.9941	83.12
47.5	46,299,514	376,635	0.0081	0.9919	82.63
48.5	41,354,974	508,780	0.0123	0.9877	81.96
49.5	34,427,467	249,845	0.0073	0.9927	80.95
50.5	28,622,713	263,484	0.0092	0.9908	80.36
51.5	22,780,550	312,072	0.0137	0.9863	79.62
52.5	17,885,461	227,450	0.0127	0.9873	78.53
53.5	16,474,828	175,112	0.0106	0.9894	77.53
54.5	12,982,955	86,240	0.0066	0.9934	76.71
55.5	9,500,795	67,938	0.0072	0.9928	76.20
56.5	7,339,188	114,038	0.0155	0.9845	75.65
57.5	5,305,728	130,733	0.0246	0.9754	74.48
58.5	4,086,471	139,348	0.0341	0.9659	72.64
59.5	1,744,679	134,895	0.0773	0.9227	70.17
60.5	1,521,647	90,810	0.0597	0.9403	64.74
61.5	1,408,306	45,876	0.0326	0.9674	60.88
62.5	1,324,946	159,256	0.1202	0.8798	58.89
63.5	1,125,092	20,988	0.0187	0.9813	51.82
64.5	1,091,538	81,978	0.0751	0.9249	50.85
65.5	992,658	31,261	0.0315	0.9685	47.03
66.5	940,595	49,289	0.0524	0.9476	45.55
67.5	857,055	27,934	0.0326	0.9674	43.16
68.5	680,691	28,700	0.0422	0.9578	41.76
69.5	633,081	35,007	0.0553	0.9447	39.99
70.5	593,737	39,112	0.0659	0.9341	37.78
71.5	552,362	34,923	0.0632	0.9368	35.29
72.5	517,446	24,013	0.0464	0.9536	33.06
73.5	485,871	19,045	0.0392	0.9608	31.53
74.5	461,462	22,024	0.0477	0.9523	30.29
75.5	434,553	51,180	0.1178	0.8822	28.85
76.5	387,127	16,842	0.0435	0.9565	25.45
77.5	361,713	10,588	0.0293	0.9707	24.34
78.5	348,896	13,710	0.0393	0.9607	23.63

NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 376.11 AND 376.12 MAINS - HP
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1906-2015			EXPERIENCE BAND 1961-2015			
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	341,737	10,524	0.0308	0.9692	22.70	
80.5	333,563	23,330	0.0699	0.9301	22.00	
81.5	315,965	28,304	0.0896	0.9104	20.46	
82.5	287,079	10,767	0.0375	0.9625	18.63	
83.5	290,057	1,164	0.0040	0.9960	17.93	
84.5	302,338	14,785	0.0489	0.9511	17.86	
85.5	234,077	763	0.0033	0.9967	16.99	
86.5	231,072		0.0000	1.0000	16.93	
87.5	213,925	294	0.0014	0.9986	16.93	
88.5	205,950	8,018	0.0389	0.9611	16.91	
89.5	172,148	3,684	0.0214	0.9786	16.25	
90.5	151,227	2,017	0.0133	0.9867	15.90	
91.5	143,628	9,320	0.0649	0.9351	15.69	
92.5	115,614	500	0.0043	0.9957	14.67	
93.5	96,332	33	0.0003	0.9997	14.61	
94.5	79,430	113	0.0014	0.9986	14.60	
95.5	69,989	252	0.0036	0.9964	14.58	
96.5	91,750	460	0.0050	0.9950	14.53	
97.5	86,957	2,709	0.0311	0.9689	14.46	
98.5	81,445	4,135	0.0508	0.9492	14.01	
99.5	66,934	913	0.0136	0.9864	13.30	
100.5	64,912	4,783	0.0737	0.9263	13.11	
101.5	60,534	5,719	0.0945	0.9055	12.15	
102.5	36,713	4,399	0.1198	0.8802	11.00	
103.5	28,733	52	0.0018	0.9982	9.68	
104.5	31,249	16	0.0005	0.9995	9.66	
105.5	12,111		0.0000	1.0000	9.66	
106.5	38		0.0000	1.0000	9.66	
107.5	38		0.0000	1.0000	9.66	
108.5	38		0.0000	1.0000	9.66	
109.5					9.66	

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 377 COMPRESSOR STATION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 377 COMPRESSOR STATION EQUIPMENT

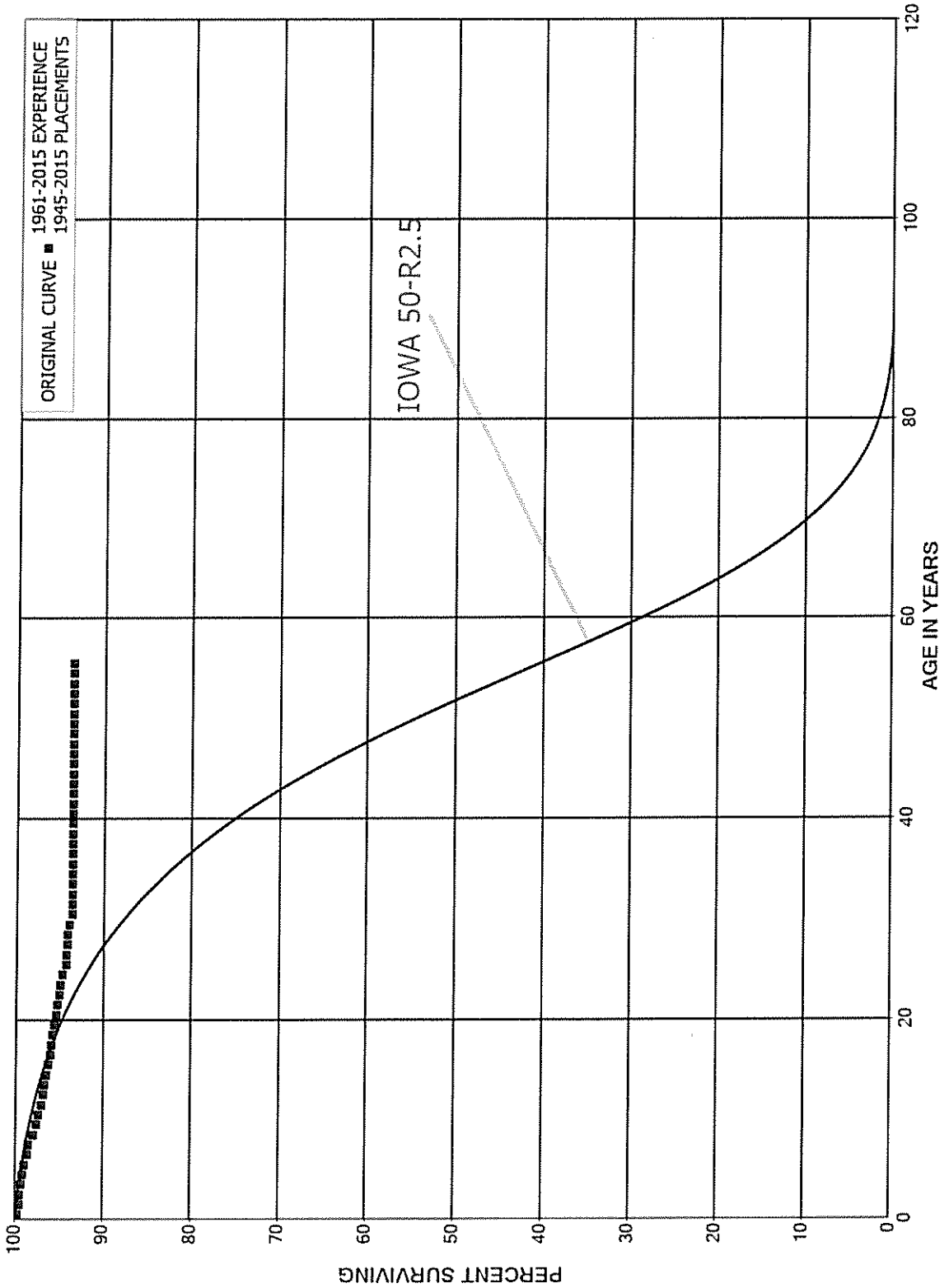
ORIGINAL LIFE TABLE

PLACEMENT BAND 1921-2013			EXPERIENCE BAND 1974-2015		
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	969,942		0.0000	1.0000	100.00
0.5	969,942		0.0000	1.0000	100.00
1.5	969,942		0.0000	1.0000	100.00
2.5	818,380		0.0000	1.0000	100.00
3.5	818,380		0.0000	1.0000	100.00
4.5	818,380		0.0000	1.0000	100.00
5.5	818,380		0.0000	1.0000	100.00
6.5	818,380		0.0000	1.0000	100.00
7.5	818,380		0.0000	1.0000	100.00
8.5	818,380		0.0000	1.0000	100.00
9.5	818,380		0.0000	1.0000	100.00
10.5	818,723		0.0000	1.0000	100.00
11.5	818,723	343	0.0004	0.9996	100.00
12.5	2,752		0.0000	1.0000	99.96
13.5	4,694	2,752	0.5863	0.4137	99.96
14.5	3,325	1,942	0.5841	0.4159	41.35
15.5	3,350	1,383	0.4128	0.5872	17.20
16.5	7,405	1,967	0.2656	0.7344	10.10
17.5	6,375	5,438	0.8530	0.1470	7.42
18.5	7,180	937	0.1305	0.8695	1.09
19.5	6,243	6,243	1.0000		0.95
20.5					
21.5					
22.5					
23.5	6,883		0.0000		
24.5	7,084	6,883	0.9716		
25.5	18,727	201	0.0107		
26.5	30,122	18,526	0.6150		
27.5	19,331	11,596	0.5999		
28.5	7,773	7,735	0.9951		
29.5	124,160	38	0.0003		
30.5	124,122	124,122	1.0000		
31.5					
32.5					
33.5					
34.5					
35.5	4,800		0.0000		
36.5	4,992	4,800	0.9615		
37.5	3,005	192	0.0639		
38.5	2,813	2,813	1.0000		

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 377 COMPRESSOR STATION EQUIPMENT
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1921-2013			EXPERIENCE BAND 1974-2015		
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	80		0.0000		
40.5	80	80	1.0000		
41.5					
42.5					
43.5					
44.5					
45.5					
46.5	8,347		0.0000		
47.5	8,347	8,347	1.0000		
48.5	1,078		0.0000		
49.5	1,078	1,078	1.0000		
50.5					
51.5					
52.5	496		0.0000		
53.5	496	496	1.0000		
54.5					

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 378 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 378 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL

ORIGINAL LIFE TABLE

PLACEMENT BAND 1945-2015

EXPERIENCE BAND 1961-2015

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	32,161,510	96,154	0.0030	0.9970	100.00
0.5	31,323,930	50,408	0.0016	0.9984	99.70
1.5	29,058,227	23,346	0.0008	0.9992	99.54
2.5	25,975,066	35,463	0.0014	0.9986	99.46
3.5	23,624,914	48,116	0.0020	0.9980	99.32
4.5	22,308,992	35,988	0.0016	0.9984	99.12
5.5	20,520,075	60,968	0.0030	0.9970	98.96
6.5	18,958,904	40,407	0.0021	0.9979	98.67
7.5	17,904,998	86,601	0.0048	0.9952	98.46
8.5	16,498,503	56,131	0.0034	0.9966	97.98
9.5	15,695,339	44,542	0.0028	0.9972	97.65
10.5	14,792,015	45,263	0.0031	0.9969	97.37
11.5	13,832,915	30,746	0.0022	0.9978	97.07
12.5	13,250,600	22,749	0.0017	0.9983	96.86
13.5	12,507,503	28,527	0.0023	0.9977	96.69
14.5	12,400,326	29,471	0.0024	0.9976	96.47
15.5	11,439,439	27,254	0.0024	0.9976	96.24
16.5	10,632,302	8,958	0.0008	0.9992	96.01
17.5	10,040,070	11,154	0.0011	0.9989	95.93
18.5	9,147,900	21,303	0.0023	0.9977	95.83
19.5	7,991,671	21,145	0.0026	0.9974	95.60
20.5	7,297,035	7,411	0.0010	0.9990	95.35
21.5	6,713,700	10,221	0.0015	0.9985	95.25
22.5	6,430,255	7,084	0.0011	0.9989	95.11
23.5	5,959,085	15,025	0.0025	0.9975	95.00
24.5	5,404,111	26,495	0.0049	0.9951	94.76
25.5	5,135,092	3,146	0.0006	0.9994	94.30
26.5	4,831,561	2,495	0.0005	0.9995	94.24
27.5	4,559,095	2,674	0.0006	0.9994	94.19
28.5	4,248,635	6,125	0.0014	0.9986	94.14
29.5	3,870,913	15,335	0.0040	0.9960	94.00
30.5	3,585,347	2,392	0.0007	0.9993	93.63
31.5	2,986,536		0.0000	1.0000	93.57
32.5	2,741,832		0.0000	1.0000	93.57
33.5	2,495,298		0.0000	1.0000	93.57
34.5	2,373,003		0.0000	1.0000	93.57
35.5	2,213,567		0.0000	1.0000	93.57
36.5	2,054,315		0.0000	1.0000	93.57
37.5	2,011,767		0.0000	1.0000	93.57
38.5	1,802,340		0.0000	1.0000	93.57

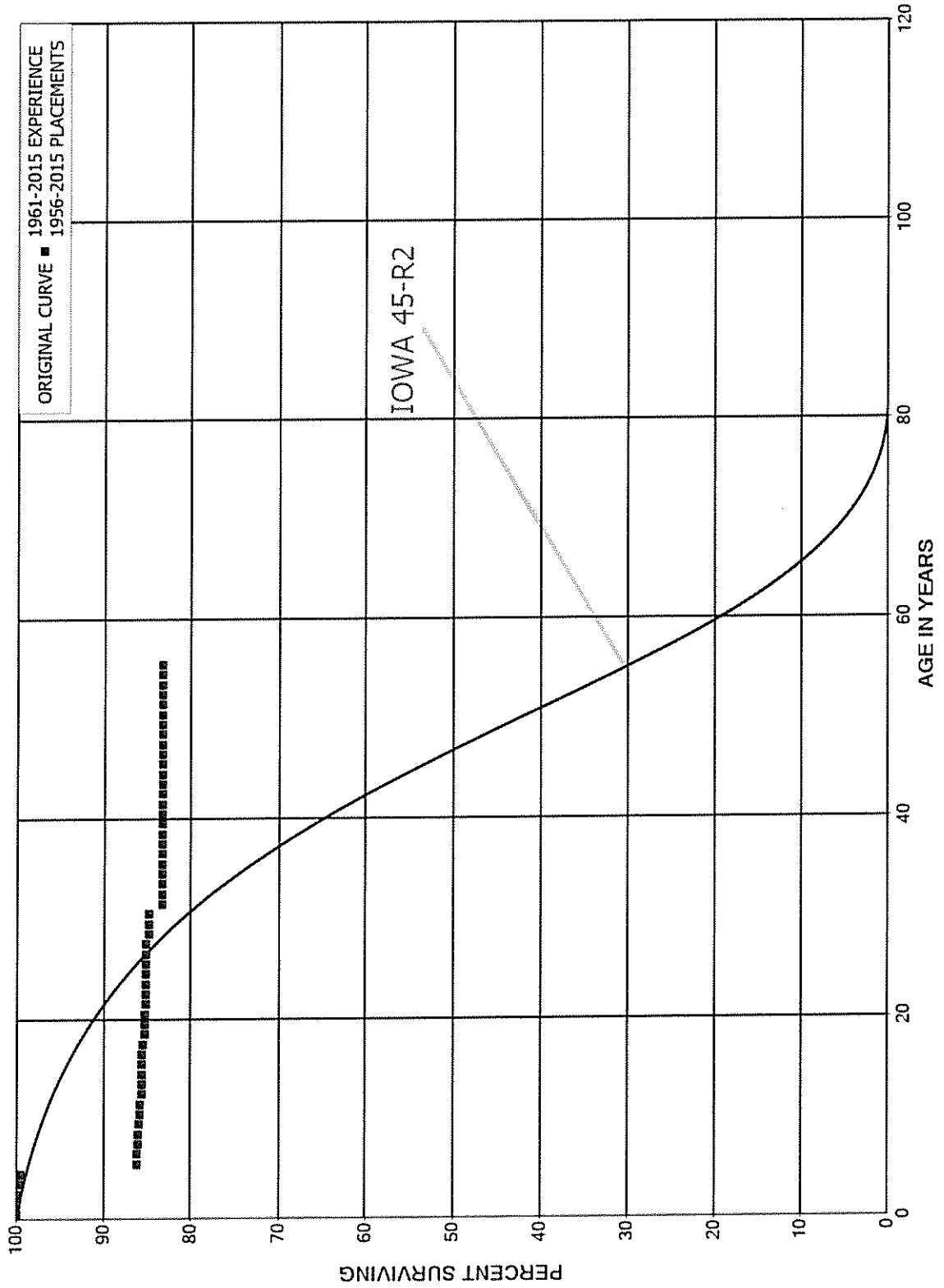
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 378 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1945-2015			EXPERIENCE BAND 1961-2015		
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	1,755,842		0.0000	1.0000	93.57
40.5	1,708,116		0.0000	1.0000	93.57
41.5	1,639,403		0.0000	1.0000	93.57
42.5	1,511,705		0.0000	1.0000	93.57
43.5	1,357,468		0.0000	1.0000	93.57
44.5	1,253,312		0.0000	1.0000	93.57
45.5	1,208,496		0.0000	1.0000	93.57
46.5	1,104,792		0.0000	1.0000	93.57
47.5	987,855		0.0000	1.0000	93.57
48.5	892,844		0.0000	1.0000	93.57
49.5	725,427		0.0000	1.0000	93.57
50.5	570,056		0.0000	1.0000	93.57
51.5	487,461		0.0000	1.0000	93.57
52.5	420,586		0.0000	1.0000	93.57
53.5	376,889		0.0000	1.0000	93.57
54.5	310,232		0.0000	1.0000	93.57
55.5	203,029		0.0000	1.0000	93.57
56.5	166,720		0.0000	1.0000	93.57
57.5	123,845		0.0000	1.0000	93.57
58.5	93,005		0.0000	1.0000	93.57
59.5	44,547		0.0000	1.0000	93.57
60.5	31,141		0.0000	1.0000	93.57
61.5	27,206		0.0000	1.0000	93.57
62.5	19,633		0.0000	1.0000	93.57
63.5	15,732		0.0000	1.0000	93.57
64.5	15,732		0.0000	1.0000	93.57
65.5	13,147		0.0000	1.0000	93.57
66.5					93.57

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 379 MEASURING AND REGULATING STATION EQUIPMENT - CITY GATE
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 379 MEASURING AND REGULATING STATION EQUIPMENT - CITY GATE

ORIGINAL LIFE TABLE

PLACEMENT BAND 1956-2015

EXPERIENCE BAND 1961-2015

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	5,671,268	110	0.0000	1.0000	100.00
0.5	4,897,452	235	0.0000	1.0000	100.00
1.5	4,148,307	1,228	0.0003	0.9997	99.99
2.5	2,108,188	4,769	0.0023	0.9977	99.96
3.5	2,029,475	4,411	0.0022	0.9978	99.74
4.5	2,042,064	273,564	0.1340	0.8660	99.52
5.5	1,657,164	1,235	0.0007	0.9993	86.19
6.5	1,529,122	838	0.0005	0.9995	86.12
7.5	1,528,884	881	0.0006	0.9994	86.08
8.5	1,528,789	1,074	0.0007	0.9993	86.03
9.5	1,528,789	1,551	0.0010	0.9990	85.97
10.5	1,373,232		0.0000	1.0000	85.88
11.5	1,372,930	4,000	0.0029	0.9971	85.88
12.5	1,368,930		0.0000	1.0000	85.63
13.5	1,368,710		0.0000	1.0000	85.63
14.5	1,328,071		0.0000	1.0000	85.63
15.5	1,121,263		0.0000	1.0000	85.63
16.5	1,121,263	1,383	0.0012	0.9988	85.63
17.5	1,119,880	3,498	0.0031	0.9969	85.52
18.5	1,119,880		0.0000	1.0000	85.26
19.5	1,091,179		0.0000	1.0000	85.26
20.5	1,091,179	831	0.0008	0.9992	85.26
21.5	1,090,348	116	0.0001	0.9999	85.19
22.5	1,089,253	520	0.0005	0.9995	85.18
23.5	1,086,903		0.0000	1.0000	85.14
24.5	1,051,944		0.0000	1.0000	85.14
25.5	1,049,206		0.0000	1.0000	85.14
26.5	1,044,268		0.0000	1.0000	85.14
27.5	1,012,273	4,292	0.0042	0.9958	85.14
28.5	995,461		0.0000	1.0000	84.78
29.5	911,348		0.0000	1.0000	84.78
30.5	911,348	15,797	0.0173	0.9827	84.78
31.5	866,500		0.0000	1.0000	83.31
32.5	859,527		0.0000	1.0000	83.31
33.5	830,451		0.0000	1.0000	83.31
34.5	793,737		0.0000	1.0000	83.31
35.5	696,182		0.0000	1.0000	83.31
36.5	696,182		0.0000	1.0000	83.31
37.5	696,182		0.0000	1.0000	83.31
38.5	648,984		0.0000	1.0000	83.31

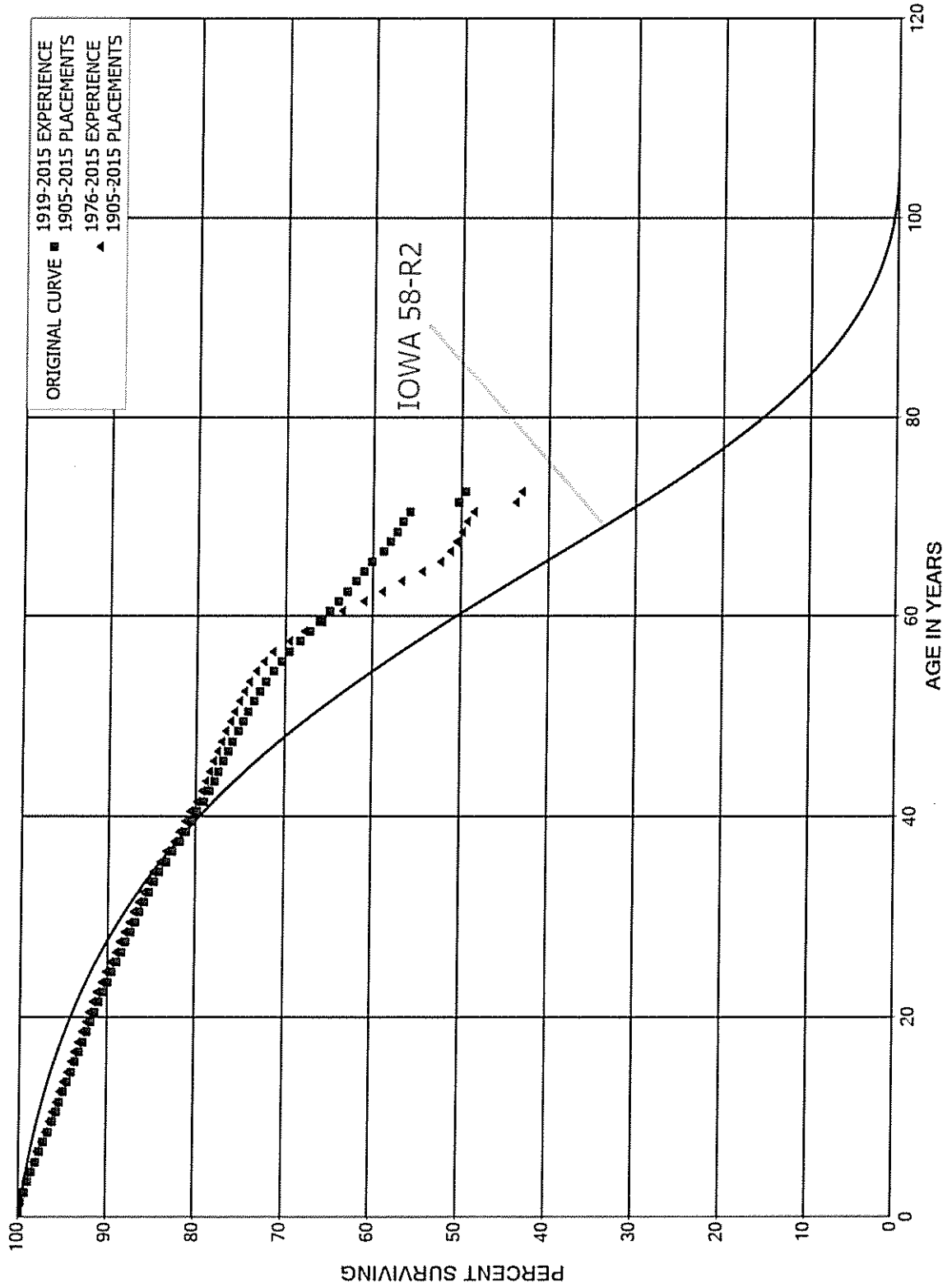
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 379 MEASURING AND REGULATING STATION EQUIPMENT - CITY GATE

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1956-2015			EXPERIENCE BAND 1961-2015		
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	629,219		0.0000	1.0000	83.31
40.5	617,455		0.0000	1.0000	83.31
41.5	608,726		0.0000	1.0000	83.31
42.5	580,682		0.0000	1.0000	83.31
43.5	495,890		0.0000	1.0000	83.31
44.5	466,037		0.0000	1.0000	83.31
45.5	456,050		0.0000	1.0000	83.31
46.5	420,982		0.0000	1.0000	83.31
47.5	408,617		0.0000	1.0000	83.31
48.5	400,659		0.0000	1.0000	83.31
49.5	380,063		0.0000	1.0000	83.31
50.5	323,399		0.0000	1.0000	83.31
51.5	259,255		0.0000	1.0000	83.31
52.5	241,009		0.0000	1.0000	83.31
53.5	232,890		0.0000	1.0000	83.31
54.5	223,874		0.0000	1.0000	83.31
55.5	97,566		0.0000	1.0000	83.31
56.5	97,426		0.0000	1.0000	83.31
57.5	90,855		0.0000	1.0000	83.31
58.5	90,440		0.0000	1.0000	83.31
59.5					83.31

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 380 SERVICES
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1905-2015

EXPERIENCE BAND 1919-2015

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	764,722,727	672,609	0.0009	0.9991	100.00
0.5	736,716,279	1,579,505	0.0021	0.9979	99.91
1.5	707,993,596	2,626,443	0.0037	0.9963	99.70
2.5	680,480,556	2,712,054	0.0040	0.9960	99.33
3.5	658,405,055	2,783,730	0.0042	0.9958	98.93
4.5	639,120,108	2,748,881	0.0043	0.9957	98.51
5.5	622,584,651	2,939,478	0.0047	0.9953	98.09
6.5	600,083,466	2,988,902	0.0050	0.9950	97.63
7.5	577,095,302	2,960,638	0.0051	0.9949	97.14
8.5	555,973,883	2,672,697	0.0048	0.9952	96.64
9.5	530,534,908	2,274,875	0.0043	0.9957	96.18
10.5	506,440,652	2,123,331	0.0042	0.9958	95.77
11.5	480,728,516	2,074,641	0.0043	0.9957	95.36
12.5	453,217,749	1,993,054	0.0044	0.9956	94.95
13.5	427,152,815	2,279,101	0.0053	0.9947	94.53
14.5	401,861,211	1,839,803	0.0046	0.9954	94.03
15.5	377,109,270	1,795,086	0.0048	0.9952	93.60
16.5	349,127,903	1,690,110	0.0048	0.9952	93.15
17.5	323,389,781	1,444,846	0.0045	0.9955	92.70
18.5	296,964,875	1,443,635	0.0049	0.9951	92.29
19.5	272,529,905	1,282,976	0.0047	0.9953	91.84
20.5	250,985,742	1,160,737	0.0046	0.9954	91.41
21.5	227,894,049	1,068,666	0.0047	0.9953	90.99
22.5	205,366,531	1,263,077	0.0062	0.9938	90.56
23.5	184,958,298	965,414	0.0052	0.9948	90.00
24.5	165,422,869	1,070,676	0.0065	0.9935	89.53
25.5	147,366,548	880,665	0.0060	0.9940	88.95
26.5	131,541,898	754,930	0.0057	0.9943	88.42
27.5	119,400,405	715,018	0.0060	0.9940	87.91
28.5	108,657,950	624,267	0.0057	0.9943	87.39
29.5	98,401,619	565,978	0.0058	0.9942	86.89
30.5	87,750,677	536,567	0.0061	0.9939	86.39
31.5	78,891,858	532,656	0.0068	0.9932	85.86
32.5	71,912,051	475,552	0.0066	0.9934	85.28
33.5	65,587,844	452,789	0.0069	0.9931	84.71
34.5	57,826,106	475,709	0.0082	0.9918	84.13
35.5	50,174,539	452,330	0.0090	0.9910	83.44
36.5	43,955,167	445,079	0.0101	0.9899	82.68
37.5	38,849,157	318,026	0.0082	0.9918	81.85
38.5	35,273,459	289,390	0.0082	0.9918	81.18

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1905-2015

EXPERIENCE BAND 1919-2015

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	32,280,117	231,704	0.0072	0.9928	80.51
40.5	29,873,056	285,634	0.0096	0.9904	79.93
41.5	27,198,079	225,365	0.0083	0.9917	79.17
42.5	24,270,850	165,252	0.0068	0.9932	78.51
43.5	21,558,097	137,956	0.0064	0.9936	77.98
44.5	19,124,925	133,375	0.0070	0.9930	77.48
45.5	16,979,907	111,569	0.0066	0.9934	76.94
46.5	14,897,838	101,536	0.0068	0.9932	76.43
47.5	13,066,070	100,908	0.0077	0.9923	75.91
48.5	11,349,103	87,642	0.0077	0.9923	75.33
49.5	9,652,558	67,075	0.0069	0.9931	74.74
50.5	8,208,547	74,359	0.0091	0.9909	74.23
51.5	6,970,417	69,233	0.0099	0.9901	73.55
52.5	5,959,373	55,168	0.0093	0.9907	72.82
53.5	5,120,059	61,187	0.0120	0.9880	72.15
54.5	4,336,075	55,117	0.0127	0.9873	71.29
55.5	3,672,287	44,760	0.0122	0.9878	70.38
56.5	3,368,184	61,710	0.0183	0.9817	69.52
57.5	3,280,266	49,069	0.0150	0.9850	68.25
58.5	3,038,553	52,392	0.0172	0.9828	67.23
59.5	2,783,512	45,120	0.0162	0.9838	66.07
60.5	2,738,784	45,753	0.0167	0.9833	65.00
61.5	2,692,966	41,715	0.0155	0.9845	63.91
62.5	2,578,557	40,139	0.0156	0.9844	62.92
63.5	2,533,909	37,164	0.0147	0.9853	61.94
64.5	2,447,725	35,010	0.0143	0.9857	61.03
65.5	2,395,323	50,900	0.0212	0.9788	60.16
66.5	2,317,825	32,520	0.0140	0.9860	58.88
67.5	2,266,007	29,278	0.0129	0.9871	58.06
68.5	2,199,274	26,661	0.0121	0.9879	57.31
69.5	2,124,408	30,528	0.0144	0.9856	56.61
70.5	2,070,456	203,609	0.0983	0.9017	55.80
71.5	1,847,958	31,271	0.0169	0.9831	50.31
72.5	1,810,837	21,566	0.0119	0.9881	49.46
73.5	1,766,591	44,480	0.0252	0.9748	48.87
74.5	1,706,409	41,073	0.0241	0.9759	47.64
75.5	244,204	13,662	0.0559	0.9441	46.49
76.5	211,607	17,239	0.0815	0.9185	43.89
77.5	179,262	11,267	0.0628	0.9372	40.32
78.5	158,772	8,357	0.0526	0.9474	37.78

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1905-2015			EXPERIENCE BAND 1919-2015			
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	143,868	5,341	0.0371	0.9629	35.79	
80.5	130,711	5,854	0.0448	0.9552	34.46	
81.5	120,916	6,306	0.0521	0.9479	32.92	
82.5	111,065	6,129	0.0552	0.9448	31.20	
83.5	96,225	3,884	0.0404	0.9596	29.48	
84.5	79,509	3,448	0.0434	0.9566	28.29	
85.5	72,134	3,673	0.0509	0.9491	27.07	
86.5	64,768	2,003	0.0309	0.9691	25.69	
87.5	60,626	1,950	0.0322	0.9678	24.89	
88.5	61,396	540	0.0088	0.9912	24.09	
89.5	56,762	457	0.0080	0.9920	23.88	
90.5	48,959	17,083	0.3489	0.6511	23.69	
91.5	25,789	3,288	0.1275	0.8725	15.42	
92.5	21,289	1,630	0.0766	0.9234	13.46	
93.5	18,297	1,781	0.0973	0.9027	12.43	
94.5	16,517	4,059	0.2458	0.7542	11.22	
95.5	11,039	1,251	0.1133	0.8867	8.46	
96.5	8,652	584	0.0675	0.9325	7.50	
97.5	7,016	298	0.0424	0.9576	6.99	
98.5	6,430	184	0.0286	0.9714	6.70	
99.5	6,247	308	0.0492	0.9508	6.51	
100.5	5,903	411	0.0696	0.9304	6.19	
101.5	4,519	191	0.0423	0.9577	5.76	
102.5	4,376	130	0.0298	0.9702	5.51	
103.5	3,568	60	0.0168	0.9832	5.35	
104.5	3,508	98	0.0278	0.9722	5.26	
105.5	2,133		0.0000	1.0000	5.11	
106.5	2,080	37	0.0178	0.9822	5.11	
107.5	1,475	29	0.0195	0.9805	5.02	
108.5	1,446		0.0000	1.0000	4.92	
109.5	1,313	42	0.0322	0.9678	4.92	
110.5					4.77	

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1905-2015

EXPERIENCE BAND 1976-2015

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	720,569,073	568,357	0.0008	0.9992	100.00
0.5	695,606,161	1,319,582	0.0019	0.9981	99.92
1.5	670,172,738	2,325,246	0.0035	0.9965	99.73
2.5	646,207,669	2,426,756	0.0038	0.9962	99.39
3.5	627,518,324	2,497,748	0.0040	0.9960	99.01
4.5	611,474,574	2,472,689	0.0040	0.9960	98.62
5.5	597,997,080	2,659,992	0.0044	0.9956	98.22
6.5	578,494,534	2,715,397	0.0047	0.9953	97.78
7.5	557,994,341	2,676,125	0.0048	0.9952	97.32
8.5	537,545,260	2,410,751	0.0045	0.9955	96.86
9.5	514,495,328	2,077,535	0.0040	0.9960	96.42
10.5	492,436,156	1,938,105	0.0039	0.9961	96.03
11.5	468,676,863	1,885,282	0.0040	0.9960	95.66
12.5	442,867,326	1,821,114	0.0041	0.9959	95.27
13.5	418,275,210	2,121,702	0.0051	0.9949	94.88
14.5	394,205,527	1,696,741	0.0043	0.9957	94.40
15.5	370,573,726	1,634,305	0.0044	0.9956	93.99
16.5	343,550,694	1,579,612	0.0046	0.9954	93.58
17.5	318,443,478	1,352,378	0.0042	0.9958	93.15
18.5	292,656,096	1,372,112	0.0047	0.9953	92.75
19.5	268,738,218	1,226,661	0.0046	0.9954	92.32
20.5	247,325,684	1,104,720	0.0045	0.9955	91.89
21.5	224,300,630	1,026,199	0.0046	0.9954	91.48
22.5	201,968,171	1,221,880	0.0060	0.9940	91.07
23.5	181,633,202	924,927	0.0051	0.9949	90.51
24.5	162,206,271	1,038,777	0.0064	0.9936	90.05
25.5	144,233,499	849,065	0.0059	0.9941	89.48
26.5	128,475,042	722,228	0.0056	0.9944	88.95
27.5	116,388,458	688,326	0.0059	0.9941	88.45
28.5	105,767,470	602,401	0.0057	0.9943	87.93
29.5	95,638,161	545,296	0.0057	0.9943	87.43
30.5	85,040,072	514,671	0.0061	0.9939	86.93
31.5	76,220,574	508,309	0.0067	0.9933	86.40
32.5	69,258,973	453,214	0.0065	0.9935	85.83
33.5	62,967,415	423,259	0.0067	0.9933	85.26
34.5	55,241,506	444,813	0.0081	0.9919	84.69
35.5	47,620,517	420,601	0.0088	0.9912	84.01
36.5	41,432,905	414,302	0.0100	0.9900	83.27
37.5	36,357,672	284,751	0.0078	0.9922	82.43
38.5	32,805,062	256,538	0.0078	0.9922	81.79

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1905-2015

EXPERIENCE BAND 1976-2015

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	29,832,670	197,897	0.0066	0.9934	81.15
40.5	27,443,601	250,959	0.0091	0.9909	80.61
41.5	24,780,872	188,191	0.0076	0.9924	79.87
42.5	21,864,865	129,411	0.0059	0.9941	79.27
43.5	19,173,375	103,663	0.0054	0.9946	78.80
44.5	16,782,571	95,564	0.0057	0.9943	78.37
45.5	14,665,560	74,650	0.0051	0.9949	77.93
46.5	12,632,510	71,023	0.0056	0.9944	77.53
47.5	10,839,117	74,557	0.0069	0.9931	77.09
48.5	9,168,585	60,559	0.0066	0.9934	76.56
49.5	7,515,019	41,650	0.0055	0.9945	76.06
50.5	6,126,298	48,594	0.0079	0.9921	75.64
51.5	4,947,090	37,454	0.0076	0.9924	75.04
52.5	3,978,340	29,080	0.0073	0.9927	74.47
53.5	3,180,816	33,901	0.0107	0.9893	73.92
54.5	2,427,732	28,099	0.0116	0.9884	73.14
55.5	1,785,196	23,591	0.0132	0.9868	72.29
56.5	1,500,171	40,874	0.0272	0.9728	71.33
57.5	1,417,941	34,434	0.0243	0.9757	69.39
58.5	1,196,766	36,150	0.0302	0.9698	67.70
59.5	951,708	32,807	0.0345	0.9655	65.66
60.5	923,173	35,754	0.0387	0.9613	63.40
61.5	893,669	31,566	0.0353	0.9647	60.94
62.5	800,503	30,164	0.0377	0.9623	58.79
63.5	780,431	31,842	0.0408	0.9592	56.57
64.5	736,744	27,775	0.0377	0.9623	54.26
65.5	2,391,756	50,900	0.0213	0.9787	52.22
66.5	2,314,311	32,520	0.0141	0.9859	51.11
67.5	2,263,668	29,278	0.0129	0.9871	50.39
68.5	2,196,935	26,661	0.0121	0.9879	49.74
69.5	2,122,259	30,528	0.0144	0.9856	49.13
70.5	2,070,456	203,609	0.0983	0.9017	48.43
71.5	1,847,958	31,271	0.0169	0.9831	43.67
72.5	1,810,837	21,566	0.0119	0.9881	42.93
73.5	1,766,591	44,480	0.0252	0.9748	42.42
74.5	1,706,409	41,073	0.0241	0.9759	41.35
75.5	244,204	13,662	0.0559	0.9441	40.35
76.5	211,607	17,239	0.0815	0.9185	38.09
77.5	179,262	11,267	0.0628	0.9372	34.99
78.5	158,772	8,357	0.0526	0.9474	32.79

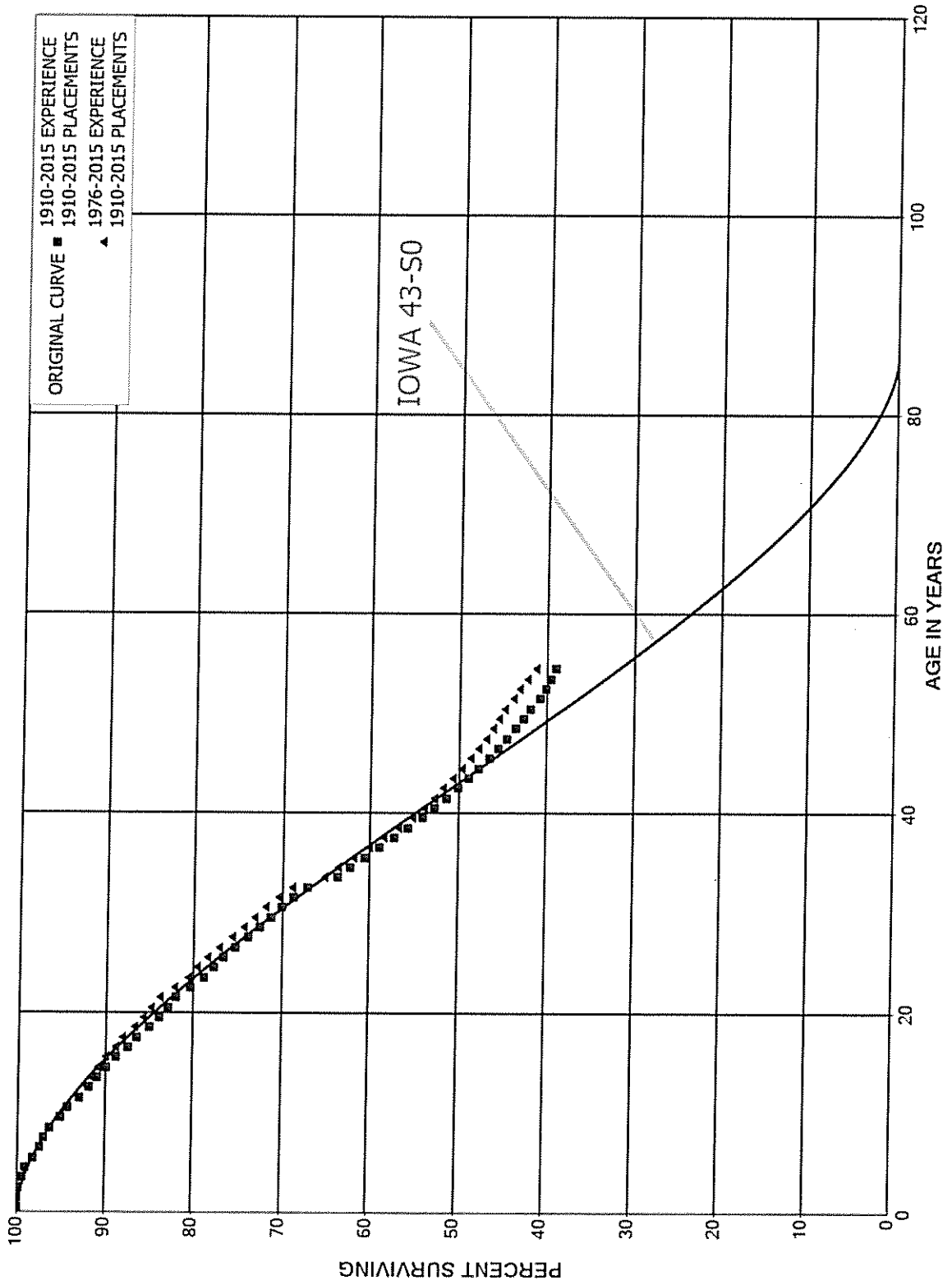
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1905-2015			EXPERIENCE BAND 1976-2015			
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	143,868	5,341	0.0371	0.9629	31.07	
80.5	130,711	5,854	0.0448	0.9552	29.91	
81.5	120,916	6,306	0.0521	0.9479	28.57	
82.5	111,065	6,129	0.0552	0.9448	27.08	
83.5	96,225	3,884	0.0404	0.9596	25.59	
84.5	79,509	3,448	0.0434	0.9566	24.56	
85.5	72,134	3,673	0.0509	0.9491	23.49	
86.5	64,768	2,003	0.0309	0.9691	22.29	
87.5	60,626	1,950	0.0322	0.9678	21.60	
88.5	61,396	540	0.0088	0.9912	20.91	
89.5	56,762	457	0.0080	0.9920	20.73	
90.5	48,959	17,083	0.3489	0.6511	20.56	
91.5	25,789	3,288	0.1275	0.8725	13.39	
92.5	21,289	1,630	0.0766	0.9234	11.68	
93.5	18,297	1,781	0.0973	0.9027	10.78	
94.5	16,517	4,059	0.2458	0.7542	9.74	
95.5	11,039	1,251	0.1133	0.8867	7.34	
96.5	8,652	584	0.0675	0.9325	6.51	
97.5	7,016	298	0.0424	0.9576	6.07	
98.5	6,430	184	0.0286	0.9714	5.81	
99.5	6,247	308	0.0492	0.9508	5.65	
100.5	5,903	411	0.0696	0.9304	5.37	
101.5	4,519	191	0.0423	0.9577	5.00	
102.5	4,376	130	0.0298	0.9702	4.78	
103.5	3,568	60	0.0168	0.9832	4.64	
104.5	3,508	98	0.0278	0.9722	4.56	
105.5	2,133		0.0000	1.0000	4.44	
106.5	2,080	37	0.0178	0.9822	4.44	
107.5	1,475	29	0.0195	0.9805	4.36	
108.5	1,446		0.0000	1.0000	4.27	
109.5	1,313	42	0.0322	0.9678	4.27	
110.5					4.14	

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 381 METERS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2015

EXPERIENCE BAND 1910-2015

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	96,712,310	12,947	0.0001	0.9999	100.00
0.5	93,131,457	38,641	0.0004	0.9996	99.99
1.5	89,207,681	104,889	0.0012	0.9988	99.95
2.5	86,157,682	377,790	0.0044	0.9956	99.83
3.5	81,810,095	222,970	0.0027	0.9973	99.39
4.5	79,047,235	758,805	0.0096	0.9904	99.12
5.5	76,003,582	577,318	0.0076	0.9924	98.17
6.5	74,232,686	371,450	0.0050	0.9950	97.42
7.5	64,689,195	426,740	0.0066	0.9934	96.93
8.5	57,266,772	701,286	0.0122	0.9878	96.29
9.5	47,536,030	394,485	0.0083	0.9917	95.12
10.5	44,915,478	667,559	0.0149	0.9851	94.33
11.5	40,823,688	473,260	0.0116	0.9884	92.92
12.5	37,245,645	343,251	0.0092	0.9908	91.85
13.5	35,078,197	413,233	0.0118	0.9882	91.00
14.5	32,908,735	414,234	0.0126	0.9874	89.93
15.5	31,153,829	445,225	0.0143	0.9857	88.80
16.5	29,297,683	338,590	0.0116	0.9884	87.53
17.5	27,557,066	453,214	0.0164	0.9836	86.52
18.5	25,286,025	328,150	0.0130	0.9870	85.09
19.5	23,547,884	277,120	0.0118	0.9882	83.99
20.5	21,991,926	259,855	0.0118	0.9882	83.00
21.5	20,641,577	417,329	0.0202	0.9798	82.02
22.5	19,152,571	362,682	0.0189	0.9811	80.36
23.5	17,660,809	243,967	0.0138	0.9862	78.84
24.5	16,779,878	255,391	0.0152	0.9848	77.75
25.5	15,390,621	265,162	0.0172	0.9828	76.57
26.5	14,421,160	279,525	0.0194	0.9806	75.25
27.5	13,656,267	239,385	0.0175	0.9825	73.79
28.5	13,370,859	216,300	0.0162	0.9838	72.50
29.5	12,384,127	223,974	0.0181	0.9819	71.32
30.5	11,727,646	224,949	0.0192	0.9808	70.03
31.5	11,226,666	245,117	0.0218	0.9782	68.69
32.5	10,773,573	549,574	0.0510	0.9490	67.19
33.5	9,572,175	225,892	0.0236	0.9764	63.76
34.5	8,544,777	226,368	0.0265	0.9735	62.26
35.5	7,810,662	214,719	0.0275	0.9725	60.61
36.5	7,034,134	195,272	0.0278	0.9722	58.94
37.5	6,510,354	177,163	0.0272	0.9728	57.31
38.5	6,015,333	177,669	0.0295	0.9705	55.75

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015

EXPERIENCE BAND 1910-2015

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	5,856,362	148,482	0.0254	0.9746	54.10
40.5	5,668,031	146,973	0.0259	0.9741	52.73
41.5	5,060,933	124,503	0.0246	0.9754	51.36
42.5	4,596,108	115,280	0.0251	0.9749	50.10
43.5	3,805,781	90,018	0.0237	0.9763	48.84
44.5	3,347,846	83,562	0.0250	0.9750	47.69
45.5	2,947,617	65,227	0.0221	0.9779	46.50
46.5	2,685,148	57,678	0.0215	0.9785	45.47
47.5	2,351,966	50,886	0.0216	0.9784	44.49
48.5	1,974,378	40,433	0.0205	0.9795	43.53
49.5	1,742,771	34,309	0.0197	0.9803	42.64
50.5	1,406,693	34,450	0.0245	0.9755	41.80
51.5	1,139,269	20,192	0.0177	0.9823	40.77
52.5	880,970	12,244	0.0139	0.9861	40.05
53.5	665,663	8,569	0.0129	0.9871	39.49
54.5	506,512	5,020	0.0099	0.9901	38.99
55.5	496,177	7,336	0.0148	0.9852	38.60
56.5	490,667	1,775	0.0036	0.9964	38.03
57.5	475,251	1,379	0.0029	0.9971	37.89
58.5	453,904	708	0.0016	0.9984	37.78
59.5	433,319	381	0.0009	0.9991	37.72
60.5	432,730	152	0.0004	0.9996	37.69
61.5	432,328	166	0.0004	0.9996	37.68
62.5	431,723	142	0.0003	0.9997	37.66
63.5	431,259	75	0.0002	0.9998	37.65
64.5	431,118	59	0.0001	0.9999	37.64
65.5	430,934	200	0.0005	0.9995	37.64
66.5	430,734	128	0.0003	0.9997	37.62
67.5	430,433	140	0.0003	0.9997	37.61
68.5	429,634	15	0.0000	1.0000	37.60
69.5	427,887		0.0000	1.0000	37.60
70.5	427,207	12,553	0.0294	0.9706	37.60
71.5	414,005	72	0.0002	0.9998	36.49
72.5	400,309	8	0.0000	1.0000	36.48
73.5	400,300	2,962	0.0074	0.9926	36.48
74.5	397,183		0.0000	1.0000	36.21
75.5	124,715	6	0.0000	1.0000	36.21
76.5	124,675		0.0000	1.0000	36.21
77.5	124,675		0.0000	1.0000	36.21
78.5	124,641		0.0000	1.0000	36.21

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1910-2015		
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	124,641		0.0000	1.0000	36.21
80.5	124,641		0.0000	1.0000	36.21
81.5	124,641		0.0000	1.0000	36.21
82.5	124,641		0.0000	1.0000	36.21
83.5	124,641	2,500	0.0201	0.9799	36.21
84.5	122,054		0.0000	1.0000	35.49
85.5	122,054		0.0000	1.0000	35.49
86.5	121,714		0.0000	1.0000	35.49
87.5	121,714		0.0000	1.0000	35.49
88.5	121,261		0.0000	1.0000	35.49
89.5	120,551		0.0000	1.0000	35.49
90.5	119,772		0.0000	1.0000	35.49
91.5	119,304	129	0.0011	0.9989	35.49
92.5	118,888		0.0000	1.0000	35.45
93.5	118,888	100	0.0008	0.9992	35.45
94.5	118,788	1,639	0.0138	0.9862	35.42
95.5	117,149	3,869	0.0330	0.9670	34.93
96.5	113,280	9,143	0.0807	0.9193	33.77
97.5	104,137	6,898	0.0662	0.9338	31.05
98.5	97,239	2,496	0.0257	0.9743	28.99
99.5	94,743	2,878	0.0304	0.9696	28.25
100.5	91,864	1,720	0.0187	0.9813	27.39
101.5	90,145	1,660	0.0184	0.9816	26.88
102.5	88,485	2,410	0.0272	0.9728	26.38
103.5	86,075	2,640	0.0307	0.9693	25.66
104.5	83,436	1,770	0.0212	0.9788	24.88
105.5					24.35

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2015

EXPERIENCE BAND 1976-2015

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	87,873,209	8,035	0.0001	0.9999	100.00
0.5	84,484,911	31,863	0.0004	0.9996	99.99
1.5	81,329,218	100,464	0.0012	0.9988	99.95
2.5	78,865,041	368,629	0.0047	0.9953	99.83
3.5	75,358,388	209,175	0.0028	0.9972	99.36
4.5	73,335,973	730,683	0.0100	0.9900	99.09
5.5	70,790,971	568,036	0.0080	0.9920	98.10
6.5	69,596,596	347,528	0.0050	0.9950	97.31
7.5	60,532,061	412,736	0.0068	0.9932	96.83
8.5	53,586,334	675,795	0.0126	0.9874	96.17
9.5	44,360,936	348,763	0.0079	0.9921	94.95
10.5	42,269,144	598,443	0.0142	0.9858	94.21
11.5	38,663,408	361,270	0.0093	0.9907	92.87
12.5	35,578,342	204,478	0.0057	0.9943	92.01
13.5	33,784,480	278,640	0.0082	0.9918	91.48
14.5	31,965,994	312,480	0.0098	0.9902	90.72
15.5	30,395,270	361,876	0.0119	0.9881	89.84
16.5	28,577,118	278,522	0.0097	0.9903	88.77
17.5	26,881,239	388,706	0.0145	0.9855	87.90
18.5	24,698,430	284,124	0.0115	0.9885	86.63
19.5	23,033,759	258,248	0.0112	0.9888	85.63
20.5	21,482,164	237,541	0.0111	0.9889	84.67
21.5	20,132,870	400,611	0.0199	0.9801	83.74
22.5	18,646,286	346,148	0.0186	0.9814	82.07
23.5	17,160,936	231,145	0.0135	0.9865	80.55
24.5	16,282,319	242,976	0.0149	0.9851	79.46
25.5	14,894,404	253,994	0.0171	0.9829	78.28
26.5	13,925,269	266,709	0.0192	0.9808	76.94
27.5	13,160,567	225,871	0.0172	0.9828	75.47
28.5	12,882,425	204,162	0.0158	0.9842	74.17
29.5	11,908,969	214,826	0.0180	0.9820	73.00
30.5	11,260,734	219,314	0.0195	0.9805	71.68
31.5	10,764,186	240,275	0.0223	0.9777	70.28
32.5	10,313,618	547,539	0.0531	0.9469	68.72
33.5	9,116,808	223,229	0.0245	0.9755	65.07
34.5	8,090,784	222,817	0.0275	0.9725	63.47
35.5	7,357,708	210,620	0.0286	0.9714	61.73
36.5	6,582,057	185,626	0.0282	0.9718	59.96
37.5	6,058,730	169,059	0.0279	0.9721	58.27
38.5	5,563,859	159,301	0.0286	0.9714	56.64

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1976-2015		
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	5,404,888	125,003	0.0231	0.9769	55.02
40.5	5,216,557	110,804	0.0212	0.9788	53.75
41.5	4,609,459	90,735	0.0197	0.9803	52.61
42.5	4,144,634	82,425	0.0199	0.9801	51.57
43.5	3,354,317	67,183	0.0200	0.9800	50.55
44.5	2,898,125	62,210	0.0215	0.9785	49.53
45.5	2,497,906	45,729	0.0183	0.9817	48.47
46.5	2,237,441	38,670	0.0173	0.9827	47.58
47.5	1,904,268	31,624	0.0166	0.9834	46.76
48.5	1,531,242	23,096	0.0151	0.9849	45.98
49.5	1,304,869	19,869	0.0152	0.9848	45.29
50.5	975,492	20,713	0.0212	0.9788	44.60
51.5	713,811	11,365	0.0159	0.9841	43.65
52.5	459,385	9,026	0.0196	0.9804	42.96
53.5	244,264	5,810	0.0238	0.9762	42.11
54.5	85,211	2,666	0.0313	0.9687	41.11
55.5	75,169	1,837	0.0244	0.9756	39.83
56.5	69,769	1,167	0.0167	0.9833	38.85
57.5	54,389	933	0.0172	0.9828	38.20
58.5	33,066	476	0.0144	0.9856	37.55
59.5	12,611	244	0.0193	0.9807	37.01
60.5	12,110	70	0.0058	0.9942	36.29
61.5	11,765	39	0.0033	0.9967	36.08
62.5	11,165	124	0.0111	0.9889	35.96
63.5	10,778	57	0.0053	0.9947	35.56
64.5	10,667	59	0.0055	0.9945	35.37
65.5	430,934	200	0.0005	0.9995	35.18
66.5	430,734	128	0.0003	0.9997	35.16
67.5	430,433	140	0.0003	0.9997	35.15
68.5	429,634	15	0.0000	1.0000	35.14
69.5	427,887		0.0000	1.0000	35.14
70.5	427,207	12,553	0.0294	0.9706	35.14
71.5	414,005	72	0.0002	0.9998	34.11
72.5	400,309	8	0.0000	1.0000	34.10
73.5	400,300	2,962	0.0074	0.9926	34.10
74.5	397,183		0.0000	1.0000	33.85
75.5	124,715	6	0.0000	1.0000	33.85
76.5	124,675		0.0000	1.0000	33.85
77.5	124,675		0.0000	1.0000	33.85
78.5	124,641		0.0000	1.0000	33.85

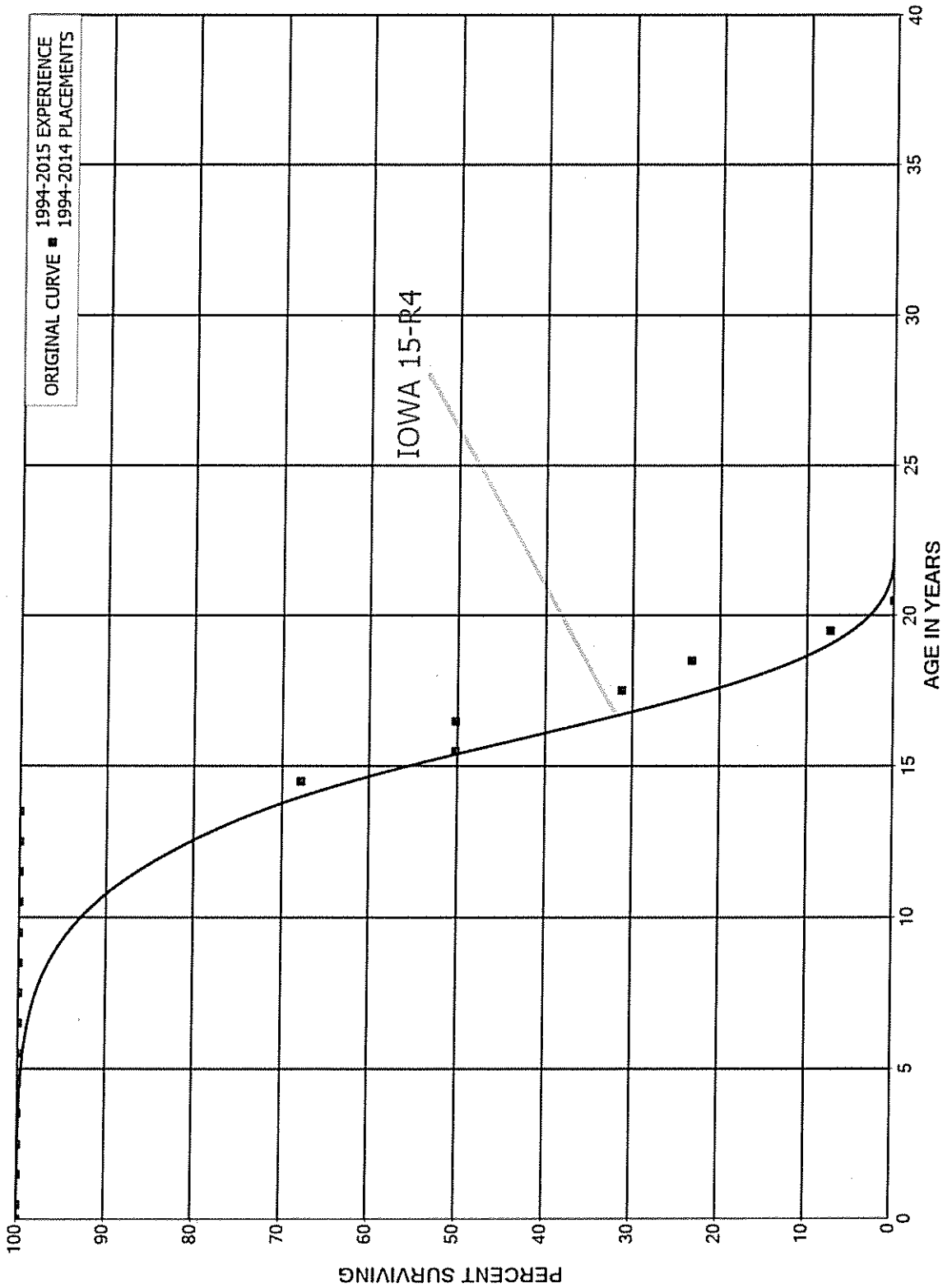
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1976-2015		
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	124,641		0.0000	1.0000	33.85
80.5	124,641		0.0000	1.0000	33.85
81.5	124,641		0.0000	1.0000	33.85
82.5	124,641		0.0000	1.0000	33.85
83.5	124,641	2,500	0.0201	0.9799	33.85
84.5	122,054		0.0000	1.0000	33.17
85.5	122,054		0.0000	1.0000	33.17
86.5	121,714		0.0000	1.0000	33.17
87.5	121,714		0.0000	1.0000	33.17
88.5	121,261		0.0000	1.0000	33.17
89.5	120,551		0.0000	1.0000	33.17
90.5	119,772		0.0000	1.0000	33.17
91.5	119,304	129	0.0011	0.9989	33.17
92.5	118,888		0.0000	1.0000	33.13
93.5	118,888	100	0.0008	0.9992	33.13
94.5	118,788	1,639	0.0138	0.9862	33.10
95.5	117,149	3,869	0.0330	0.9670	32.65
96.5	113,280	9,143	0.0807	0.9193	31.57
97.5	104,137	6,898	0.0662	0.9338	29.02
98.5	97,239	2,496	0.0257	0.9743	27.10
99.5	94,743	2,878	0.0304	0.9696	26.40
100.5	91,864	1,720	0.0187	0.9813	25.60
101.5	90,145	1,660	0.0184	0.9816	25.12
102.5	88,485	2,410	0.0272	0.9728	24.66
103.5	86,075	2,640	0.0307	0.9693	23.99
104.5	83,436	1,770	0.0212	0.9788	23.25
105.5					22.76

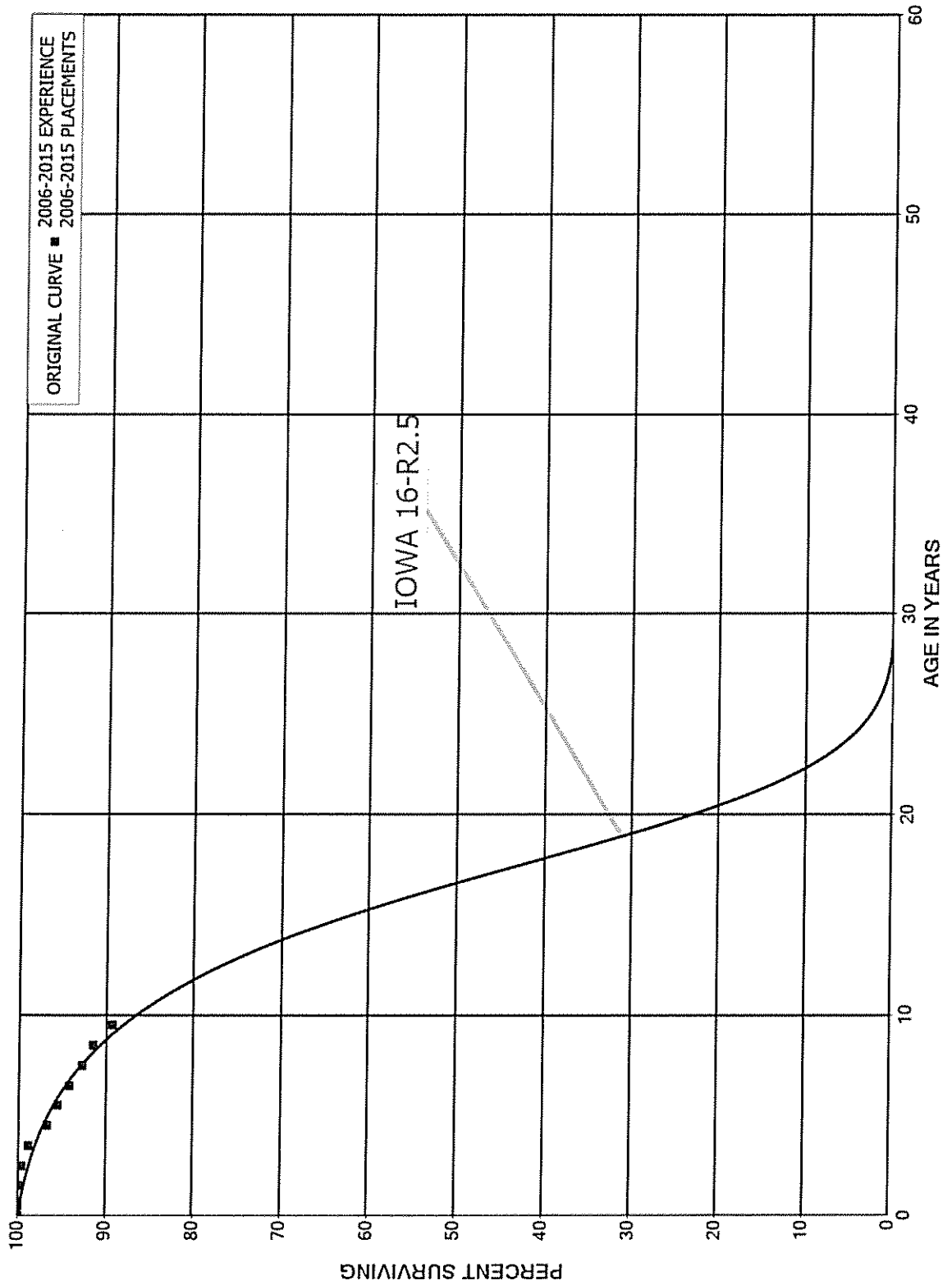
NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 381.1 METERS - ELECTRIC
 ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY
ACCOUNT 381.1 METERS - ELECTRIC
ORIGINAL LIFE TABLE

PLACEMENT BAND 1994-2014			EXPERIENCE BAND 1994-2015		
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	2,076,174		0.0000	1.0000	100.00
0.5	2,076,174		0.0000	1.0000	100.00
1.5	3,457,546		0.0000	1.0000	100.00
2.5	550,226		0.0000	1.0000	100.00
3.5	507,007		0.0000	1.0000	100.00
4.5	507,007		0.0000	1.0000	100.00
5.5	507,007		0.0000	1.0000	100.00
6.5	507,007		0.0000	1.0000	100.00
7.5	507,007		0.0000	1.0000	100.00
8.5	507,007		0.0000	1.0000	100.00
9.5	507,007		0.0000	1.0000	100.00
10.5	507,007		0.0000	1.0000	100.00
11.5	507,007		0.0000	1.0000	100.00
12.5	507,007		0.0000	1.0000	100.00
13.5	507,007	162,981	0.3215	0.6785	100.00
14.5	344,026	89,373	0.2598	0.7402	67.85
15.5	254,653		0.0000	1.0000	50.23
16.5	254,653	96,599	0.3793	0.6207	50.23
17.5	158,054	40,588	0.2568	0.7432	31.17
18.5	117,466	80,578	0.6860	0.3140	23.17
19.5	36,888	36,888	1.0000		7.28
20.5					

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 381.2 METERS - ERT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381.2 METERS - ERT

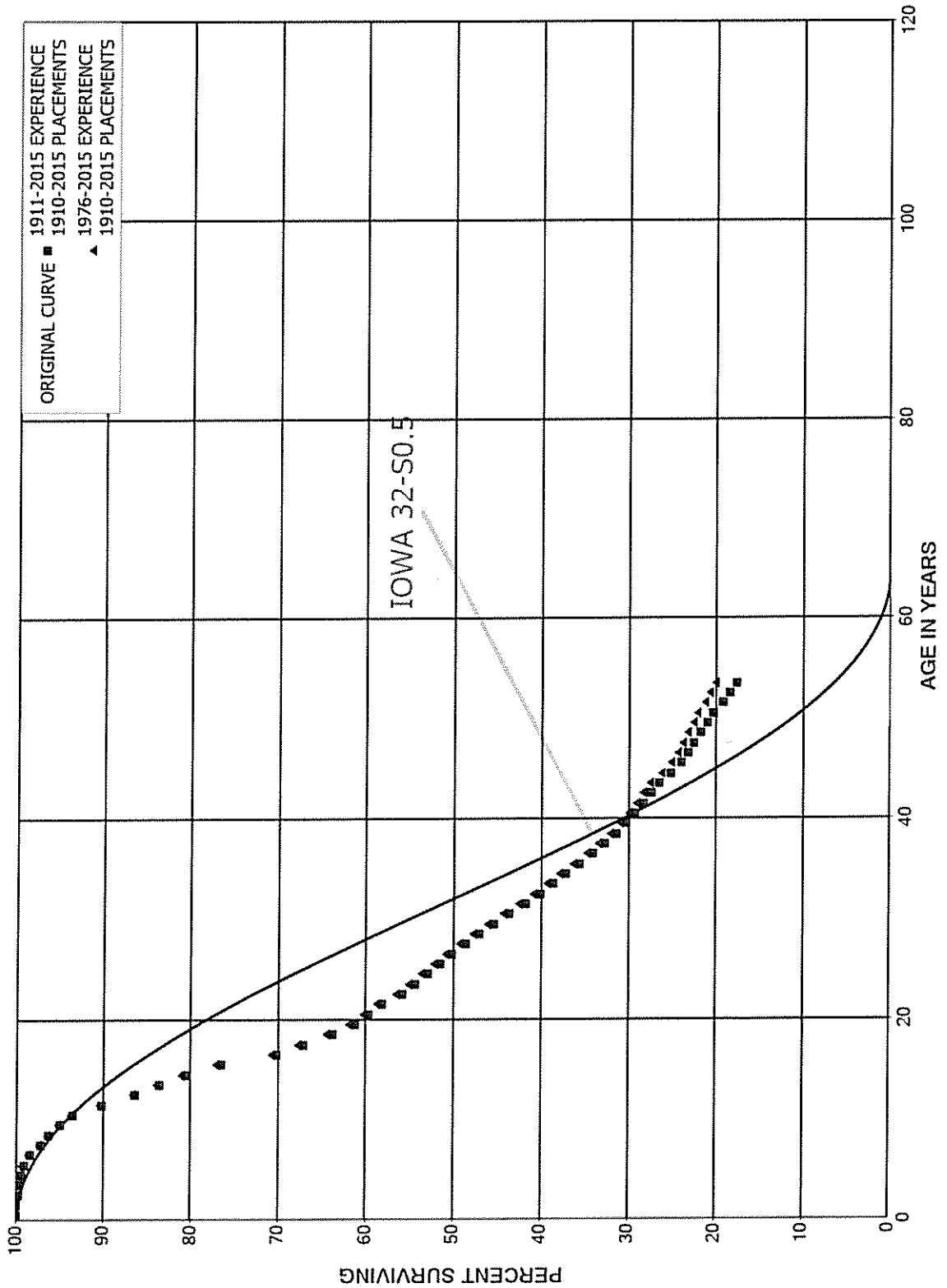
ORIGINAL LIFE TABLE

PLACEMENT BAND 2006-2015

EXPERIENCE BAND 2006-2015

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	42,601,967		0.0000	1.0000	100.00
0.5	40,395,927	18,697	0.0005	0.9995	100.00
1.5	39,995,623	118,718	0.0030	0.9970	99.95
2.5	36,981,154	295,882	0.0080	0.9920	99.66
3.5	36,009,301	773,674	0.0215	0.9785	98.86
4.5	34,706,319	437,832	0.0126	0.9874	96.74
5.5	33,646,530	464,243	0.0138	0.9862	95.52
6.5	22,338,486	336,761	0.0151	0.9849	94.20
7.5	14,511,254	201,282	0.0139	0.9861	92.78
8.5	10,910,596	267,001	0.0245	0.9755	91.49
9.5					89.25

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382 METER INSTALLATIONS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382 METER INSTALLATIONS
ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1911-2015		
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	97,325,194	27,952	0.0003	0.9997	100.00
0.5	92,590,427	65,226	0.0007	0.9993	99.97
1.5	89,713,032	136,064	0.0015	0.9985	99.90
2.5	87,410,745	148,416	0.0017	0.9983	99.75
3.5	84,223,363	130,126	0.0015	0.9985	99.58
4.5	81,796,301	268,022	0.0033	0.9967	99.43
5.5	79,456,238	589,978	0.0074	0.9926	99.10
6.5	78,331,445	972,915	0.0124	0.9876	98.36
7.5	75,704,523	705,451	0.0093	0.9907	97.14
8.5	72,452,767	933,499	0.0129	0.9871	96.24
9.5	70,113,610	1,084,393	0.0155	0.9845	95.00
10.5	66,460,133	2,375,435	0.0357	0.9643	93.53
11.5	59,402,575	2,485,643	0.0418	0.9582	90.19
12.5	55,953,987	1,807,435	0.0323	0.9677	86.41
13.5	53,073,463	1,902,829	0.0359	0.9641	83.62
14.5	48,632,960	2,452,300	0.0504	0.9496	80.62
15.5	44,006,303	3,648,241	0.0829	0.9171	76.56
16.5	39,296,506	1,704,379	0.0434	0.9566	70.21
17.5	36,811,165	1,811,604	0.0492	0.9508	67.17
18.5	32,466,933	1,314,543	0.0405	0.9595	63.86
19.5	30,351,380	791,176	0.0261	0.9739	61.27
20.5	28,804,106	739,419	0.0257	0.9743	59.68
21.5	27,704,000	1,088,090	0.0393	0.9607	58.14
22.5	26,622,057	681,563	0.0256	0.9744	55.86
23.5	24,479,554	666,421	0.0272	0.9728	54.43
24.5	22,871,164	600,686	0.0263	0.9737	52.95
25.5	19,946,753	541,619	0.0272	0.9728	51.56
26.5	17,526,375	531,764	0.0303	0.9697	50.16
27.5	15,745,363	505,562	0.0321	0.9679	48.64
28.5	15,260,557	539,129	0.0353	0.9647	47.08
29.5	13,340,138	540,891	0.0405	0.9595	45.41
30.5	12,688,184	525,301	0.0414	0.9586	43.57
31.5	12,170,107	481,076	0.0395	0.9605	41.77
32.5	11,177,793	430,622	0.0385	0.9615	40.12
33.5	10,062,305	368,477	0.0366	0.9634	38.57
34.5	8,631,127	364,399	0.0422	0.9578	37.16
35.5	7,248,118	312,506	0.0431	0.9569	35.59
36.5	6,625,482	257,280	0.0388	0.9612	34.05
37.5	5,666,999	234,201	0.0413	0.9587	32.73
38.5	5,420,109	195,306	0.0360	0.9640	31.38

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382 METER INSTALLATIONS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1911-2015		
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	4,929,117	164,700	0.0334	0.9666	30.25
40.5	4,768,342	155,552	0.0326	0.9674	29.24
41.5	4,219,635	125,522	0.0297	0.9703	28.28
42.5	3,696,566	119,078	0.0322	0.9678	27.44
43.5	2,840,854	146,582	0.0516	0.9484	26.56
44.5	2,425,568	114,153	0.0471	0.9529	25.19
45.5	2,071,325	70,350	0.0340	0.9660	24.00
46.5	1,971,909	61,298	0.0311	0.9689	23.19
47.5	1,565,178	50,756	0.0324	0.9676	22.47
48.5	1,161,538	42,384	0.0365	0.9635	21.74
49.5	920,486	31,153	0.0338	0.9662	20.95
50.5	604,754	32,051	0.0530	0.9470	20.24
51.5	395,173	15,126	0.0383	0.9617	19.16
52.5	222,803	9,593	0.0431	0.9569	18.43
53.5	56,454	5,978	0.1059	0.8941	17.64
54.5	32,449	3,191	0.0983	0.9017	15.77
55.5	26,491	1,963	0.0741	0.9259	14.22
56.5	24,088	942	0.0391	0.9609	13.17
57.5	23,825	1,771	0.0744	0.9256	12.65
58.5	22,573	3,377	0.1496	0.8504	11.71
59.5	19,420	1,347	0.0694	0.9306	9.96
60.5	18,245	128	0.0070	0.9930	9.27
61.5	18,285	152	0.0083	0.9917	9.20
62.5	18,223	113	0.0062	0.9938	9.13
63.5	18,131	68	0.0038	0.9962	9.07
64.5	18,063	86	0.0048	0.9952	9.04
65.5	17,984	14	0.0008	0.9992	8.99
66.5	17,970	29	0.0016	0.9984	8.99
67.5	17,941	66	0.0037	0.9963	8.97
68.5	17,889	14	0.0008	0.9992	8.94
69.5	17,882		0.0000	1.0000	8.93
70.5	17,882		0.0000	1.0000	8.93
71.5	17,882		0.0000	1.0000	8.93
72.5	17,882	7	0.0004	0.9996	8.93
73.5	17,875		0.0000	1.0000	8.93
74.5	17,875		0.0000	1.0000	8.93
75.5	17,875		0.0000	1.0000	8.93
76.5	17,875		0.0000	1.0000	8.93
77.5	17,875		0.0000	1.0000	8.93
78.5	17,875		0.0000	1.0000	8.93

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382 METER INSTALLATIONS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1911-2015		
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	17,875		0.0000	1.0000	8.93
80.5	17,875		0.0000	1.0000	8.93
81.5	17,875		0.0000	1.0000	8.93
82.5	17,875		0.0000	1.0000	8.93
83.5	17,875		0.0000	1.0000	8.93
84.5	17,875		0.0000	1.0000	8.93
85.5	17,875		0.0000	1.0000	8.93
86.5	17,875		0.0000	1.0000	8.93
87.5	17,875		0.0000	1.0000	8.93
88.5	17,875		0.0000	1.0000	8.93
89.5	17,875	7	0.0004	0.9996	8.93
90.5	17,868		0.0000	1.0000	8.92
91.5	17,868		0.0000	1.0000	8.92
92.5	17,868		0.0000	1.0000	8.92
93.5	17,868	69	0.0039	0.9961	8.92
94.5	17,799	188	0.0105	0.9895	8.89
95.5	17,611	808	0.0459	0.9541	8.80
96.5	16,804	1,136	0.0676	0.9324	8.39
97.5	15,668		0.0000	1.0000	7.82
98.5	15,668	850	0.0542	0.9458	7.82
99.5	14,818	13,591	0.9172	0.0828	7.40
100.5	1,227	830	0.6762	0.3238	0.61
101.5	398	398	1.0000		0.20
102.5					

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382 METER INSTALLATIONS
ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1976-2015		
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	88,805,078	19,004	0.0002	0.9998	100.00
0.5	84,233,217	38,734	0.0005	0.9995	99.98
1.5	82,176,667	112,041	0.0014	0.9986	99.93
2.5	80,563,540	120,653	0.0015	0.9985	99.80
3.5	78,336,756	76,613	0.0010	0.9990	99.65
4.5	76,607,241	227,629	0.0030	0.9970	99.55
5.5	74,728,396	564,774	0.0076	0.9924	99.25
6.5	74,163,698	948,014	0.0128	0.9872	98.50
7.5	72,115,623	684,807	0.0095	0.9905	97.24
8.5	69,386,547	908,415	0.0131	0.9869	96.32
9.5	67,599,068	1,039,509	0.0154	0.9846	95.06
10.5	64,478,890	2,318,785	0.0360	0.9640	93.60
11.5	57,898,283	2,381,550	0.0411	0.9589	90.23
12.5	54,868,594	1,700,689	0.0310	0.9690	86.52
13.5	52,306,785	1,794,256	0.0343	0.9657	83.84
14.5	48,048,056	2,377,443	0.0495	0.9505	80.96
15.5	43,681,364	3,588,351	0.0821	0.9179	76.96
16.5	39,014,833	1,665,813	0.0427	0.9573	70.63
17.5	36,576,993	1,768,170	0.0483	0.9517	67.62
18.5	32,325,820	1,287,918	0.0398	0.9602	64.35
19.5	30,268,395	782,740	0.0259	0.9741	61.79
20.5	28,725,900	727,059	0.0253	0.9747	60.19
21.5	27,626,408	1,073,440	0.0389	0.9611	58.67
22.5	26,546,830	669,360	0.0252	0.9748	56.39
23.5	24,406,510	654,230	0.0268	0.9732	54.96
24.5	22,799,642	588,555	0.0258	0.9742	53.49
25.5	19,875,847	530,163	0.0267	0.9733	52.11
26.5	17,456,037	520,457	0.0298	0.9702	50.72
27.5	15,675,132	492,750	0.0314	0.9686	49.21
28.5	15,193,947	526,684	0.0347	0.9653	47.66
29.5	13,281,390	528,796	0.0398	0.9602	46.01
30.5	12,635,524	515,589	0.0408	0.9592	44.18
31.5	12,120,732	472,312	0.0390	0.9610	42.37
32.5	11,130,281	423,885	0.0381	0.9619	40.72
33.5	10,020,207	363,108	0.0362	0.9638	39.17
34.5	8,589,777	359,714	0.0419	0.9581	37.75
35.5	7,207,223	309,478	0.0429	0.9571	36.17
36.5	6,584,829	251,874	0.0383	0.9617	34.62
37.5	5,626,600	229,197	0.0407	0.9593	33.29
38.5	5,379,789	187,978	0.0349	0.9651	31.94

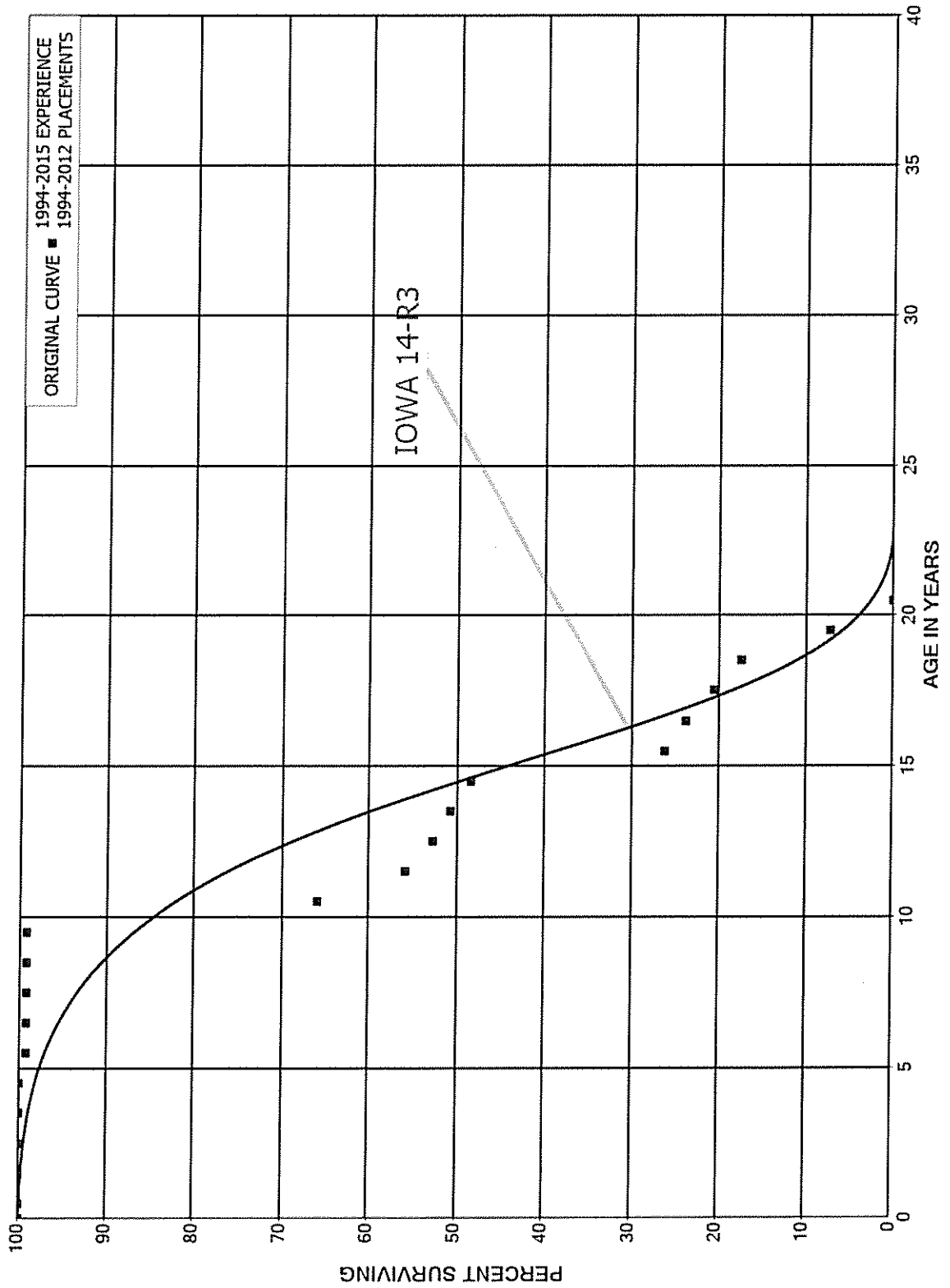
NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382 METER INSTALLATIONS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1976-2015		
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	4,888,797	154,941	0.0317	0.9683	30.82
40.5	4,728,022	143,149	0.0303	0.9697	29.85
41.5	4,179,315	112,499	0.0269	0.9731	28.94
42.5	3,656,246	105,990	0.0290	0.9710	28.16
43.5	2,800,541	134,759	0.0481	0.9519	27.35
44.5	2,386,437	101,642	0.0426	0.9574	26.03
45.5	2,032,201	57,540	0.0283	0.9717	24.92
46.5	1,934,130	47,738	0.0247	0.9753	24.22
47.5	1,527,406	37,404	0.0245	0.9755	23.62
48.5	1,127,021	29,246	0.0260	0.9740	23.04
49.5	889,878	20,977	0.0236	0.9764	22.44
50.5	579,073	22,593	0.0390	0.9610	21.91
51.5	373,702	9,048	0.0242	0.9758	21.06
52.5	204,048	6,876	0.0337	0.9663	20.55
53.5	37,823	4,024	0.1064	0.8936	19.86
54.5	13,880	1,842	0.1327	0.8673	17.74
55.5	8,097	850	0.1049	0.8951	15.39
56.5	5,774	397	0.0688	0.9312	13.77
57.5	5,553	1,411	0.2542	0.7458	12.83
58.5	4,335	3,132	0.7225	0.2775	9.57
59.5	1,318	1,202	0.9120	0.0880	2.65
60.5	240	42	0.1750	0.8250	0.23
61.5	339	62	0.1829	0.8171	0.19
62.5	284	92	0.3239	0.6761	0.16
63.5	235	47	0.2000	0.8000	0.11
64.5	202	86	0.4257	0.5743	0.09
65.5	17,984	14	0.0008	0.9992	0.05
66.5	17,970	29	0.0016	0.9984	0.05
67.5	17,941	66	0.0037	0.9963	0.05
68.5	17,889	14	0.0008	0.9992	0.05
69.5	17,882		0.0000	1.0000	0.05
70.5	17,882		0.0000	1.0000	0.05
71.5	17,882		0.0000	1.0000	0.05
72.5	17,882	7	0.0004	0.9996	0.05
73.5	17,875		0.0000	1.0000	0.05
74.5	17,875		0.0000	1.0000	0.05
75.5	17,875		0.0000	1.0000	0.05
76.5	17,875		0.0000	1.0000	0.05
77.5	17,875		0.0000	1.0000	0.05
78.5	17,875		0.0000	1.0000	0.05

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382 METER INSTALLATIONS
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1976-2015		
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	17,875		0.0000	1.0000	0.05
80.5	17,875		0.0000	1.0000	0.05
81.5	17,875		0.0000	1.0000	0.05
82.5	17,875		0.0000	1.0000	0.05
83.5	17,875		0.0000	1.0000	0.05
84.5	17,875		0.0000	1.0000	0.05
85.5	17,875		0.0000	1.0000	0.05
86.5	17,875		0.0000	1.0000	0.05
87.5	17,875		0.0000	1.0000	0.05
88.5	17,875		0.0000	1.0000	0.05
89.5	17,875	7	0.0004	0.9996	0.05
90.5	17,868		0.0000	1.0000	0.05
91.5	17,868		0.0000	1.0000	0.05
92.5	17,868		0.0000	1.0000	0.05
93.5	17,868	69	0.0039	0.9961	0.05
94.5	17,799	188	0.0105	0.9895	0.05
95.5	17,611	808	0.0459	0.9541	0.05
96.5	16,804	1,136	0.0676	0.9324	0.05
97.5	15,668		0.0000	1.0000	0.04
98.5	15,668	850	0.0542	0.9458	0.04
99.5	14,818	13,591	0.9172	0.0828	0.04
100.5	1,227	830	0.6762	0.3238	0.00
101.5	398	398	1.0000		0.00
102.5					

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382.1 METER INSTALLATIONS - ELECTRIC
ORIGINAL AND SMOOTH SURVIVOR CURVES



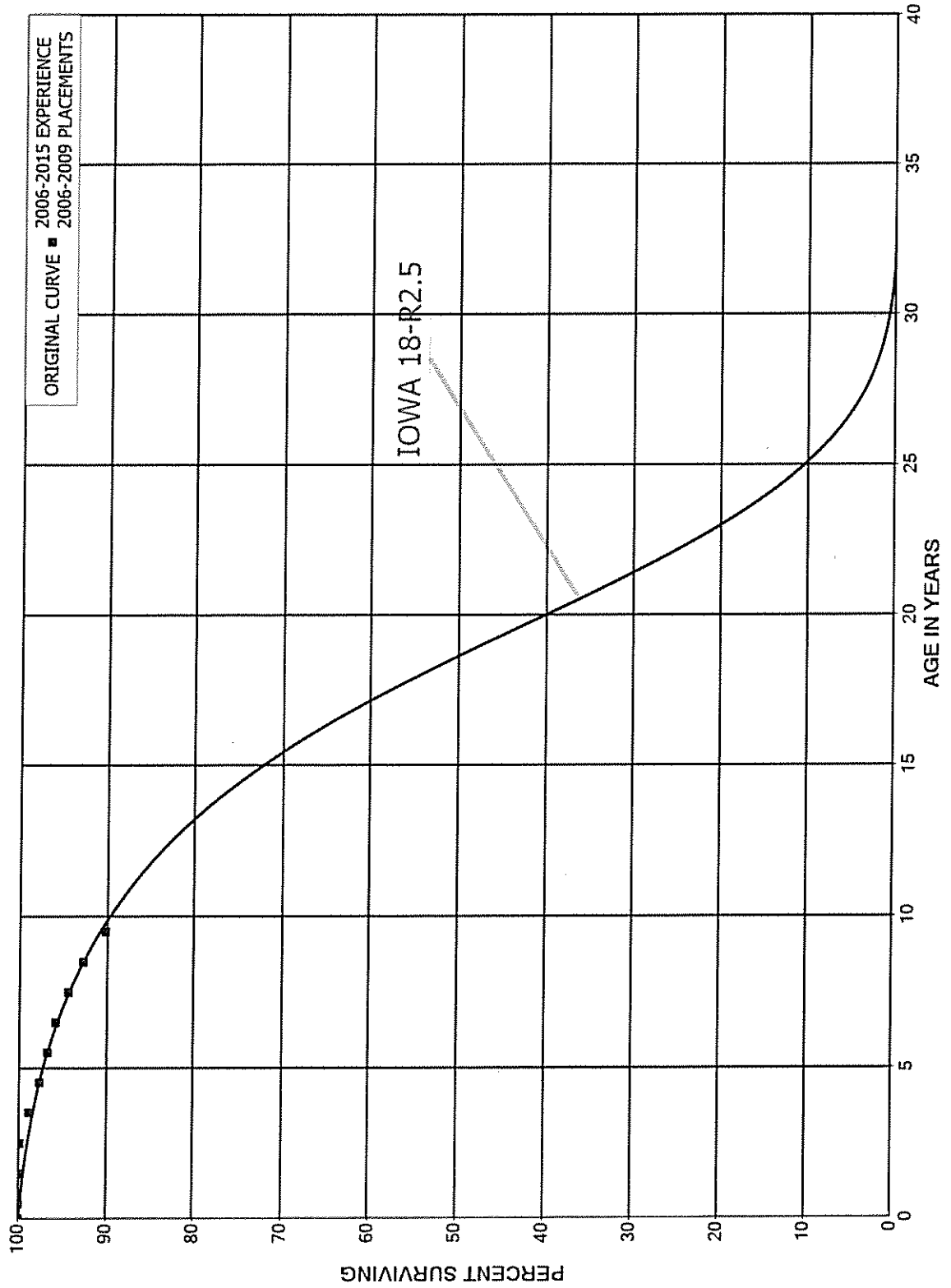
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 382.1 METER INSTALLATIONS - ELECTRIC

ORIGINAL LIFE TABLE

PLACEMENT BAND 1994-2012			EXPERIENCE BAND 1994-2015		
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	999,397		0.0000	1.0000	100.00
0.5	999,397		0.0000	1.0000	100.00
1.5	999,397		0.0000	1.0000	100.00
2.5	999,397		0.0000	1.0000	100.00
3.5	518,377		0.0000	1.0000	100.00
4.5	518,377	4,559	0.0088	0.9912	100.00
5.5	513,818		0.0000	1.0000	99.12
6.5	513,818		0.0000	1.0000	99.12
7.5	513,818		0.0000	1.0000	99.12
8.5	513,818		0.0000	1.0000	99.12
9.5	513,818	171,671	0.3341	0.6659	99.12
10.5	342,147	52,429	0.1532	0.8468	66.00
11.5	289,718	16,259	0.0561	0.9439	55.89
12.5	273,459	10,720	0.0392	0.9608	52.75
13.5	262,739	11,880	0.0452	0.9548	50.68
14.5	250,859	114,955	0.4582	0.5418	48.39
15.5	135,904	13,170	0.0969	0.9031	26.22
16.5	122,734	16,477	0.1342	0.8658	23.68
17.5	106,257	15,824	0.1489	0.8511	20.50
18.5	90,433	53,374	0.5902	0.4098	17.45
19.5	37,059	37,059	1.0000		7.15
20.5					

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382.2 METER INSTALLATIONS - ERT
ORIGINAL AND SMOOTH SURVIVOR CURVES

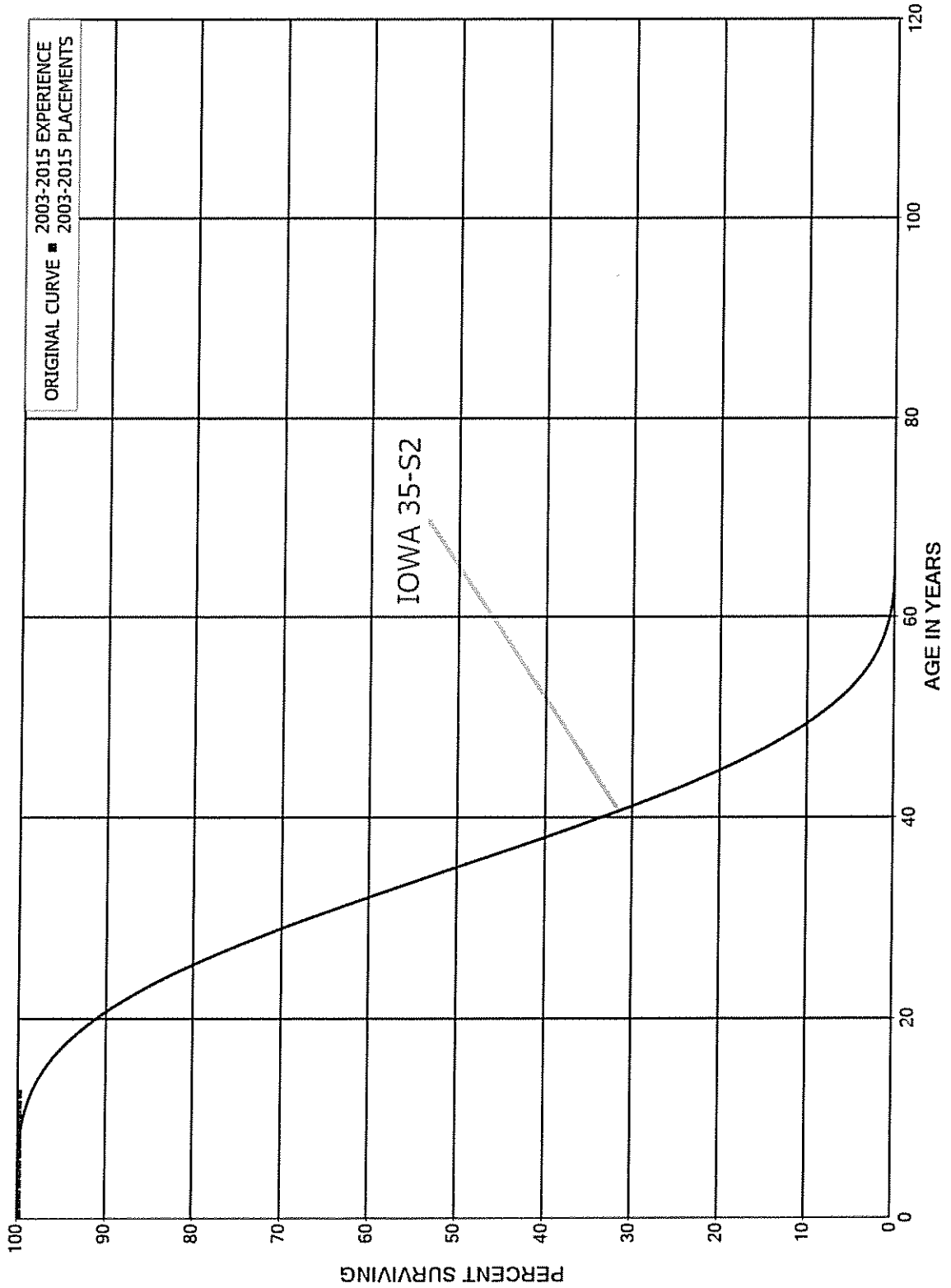


NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382.2 METER INSTALLATIONS - ERT

ORIGINAL LIFE TABLE

PLACEMENT BAND 2006-2009			EXPERIENCE BAND 2006-2015		
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	10,052,566		0.0000	1.0000	100.00
0.5	10,052,566		0.0000	1.0000	100.00
1.5	10,052,566	19,112	0.0019	0.9981	100.00
2.5	10,033,455	93,865	0.0094	0.9906	99.81
3.5	9,939,590	129,762	0.0131	0.9869	98.88
4.5	9,809,828	87,139	0.0089	0.9911	97.59
5.5	9,722,689	92,939	0.0096	0.9904	96.72
6.5	4,569,130	68,854	0.0151	0.9849	95.79
7.5	3,110,454	54,548	0.0175	0.9825	94.35
8.5	1,242,960	33,180	0.0267	0.9733	92.70
9.5					90.22

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 383 HOUSE REGULATORS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 383 HOUSE REGULATORS

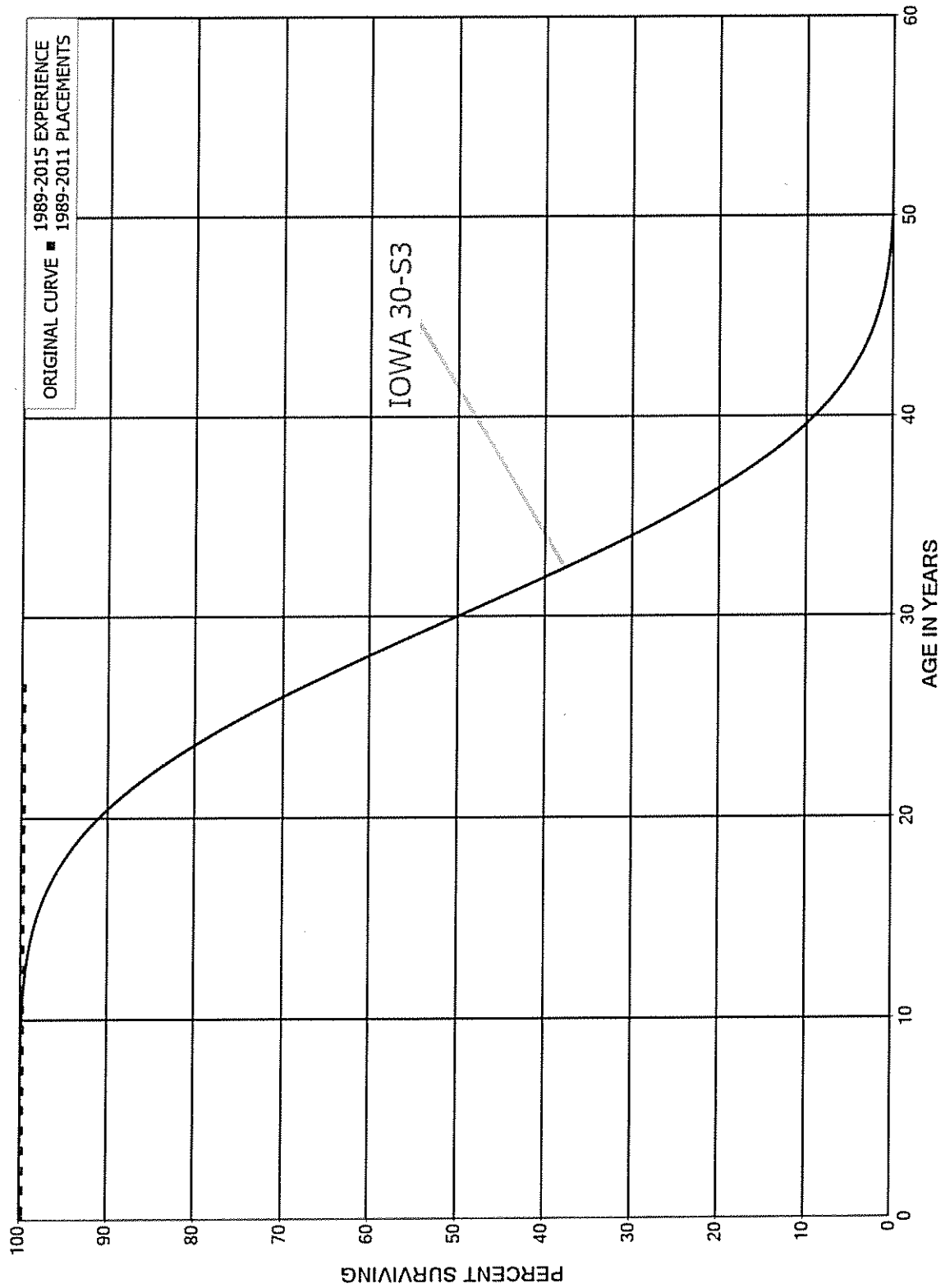
ORIGINAL LIFE TABLE

PLACEMENT BAND 2003-2015

EXPERIENCE BAND 2003-2015

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	1,484,678		0.0000	1.0000	100.00
0.5	1,285,136		0.0000	1.0000	100.00
1.5	1,115,746		0.0000	1.0000	100.00
2.5	775,208		0.0000	1.0000	100.00
3.5	619,596		0.0000	1.0000	100.00
4.5	569,858		0.0000	1.0000	100.00
5.5	487,625		0.0000	1.0000	100.00
6.5	451,511		0.0000	1.0000	100.00
7.5	364,686		0.0000	1.0000	100.00
8.5	258,519		0.0000	1.0000	100.00
9.5	163,930		0.0000	1.0000	100.00
10.5	52,920		0.0000	1.0000	100.00
11.5	1,945		0.0000	1.0000	100.00
12.5					100.00

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 387.1 OTHER EQUIPMENT - CATHODIC PROTECTION TESTING
 ORIGINAL AND SMOOTH SURVIVOR CURVES



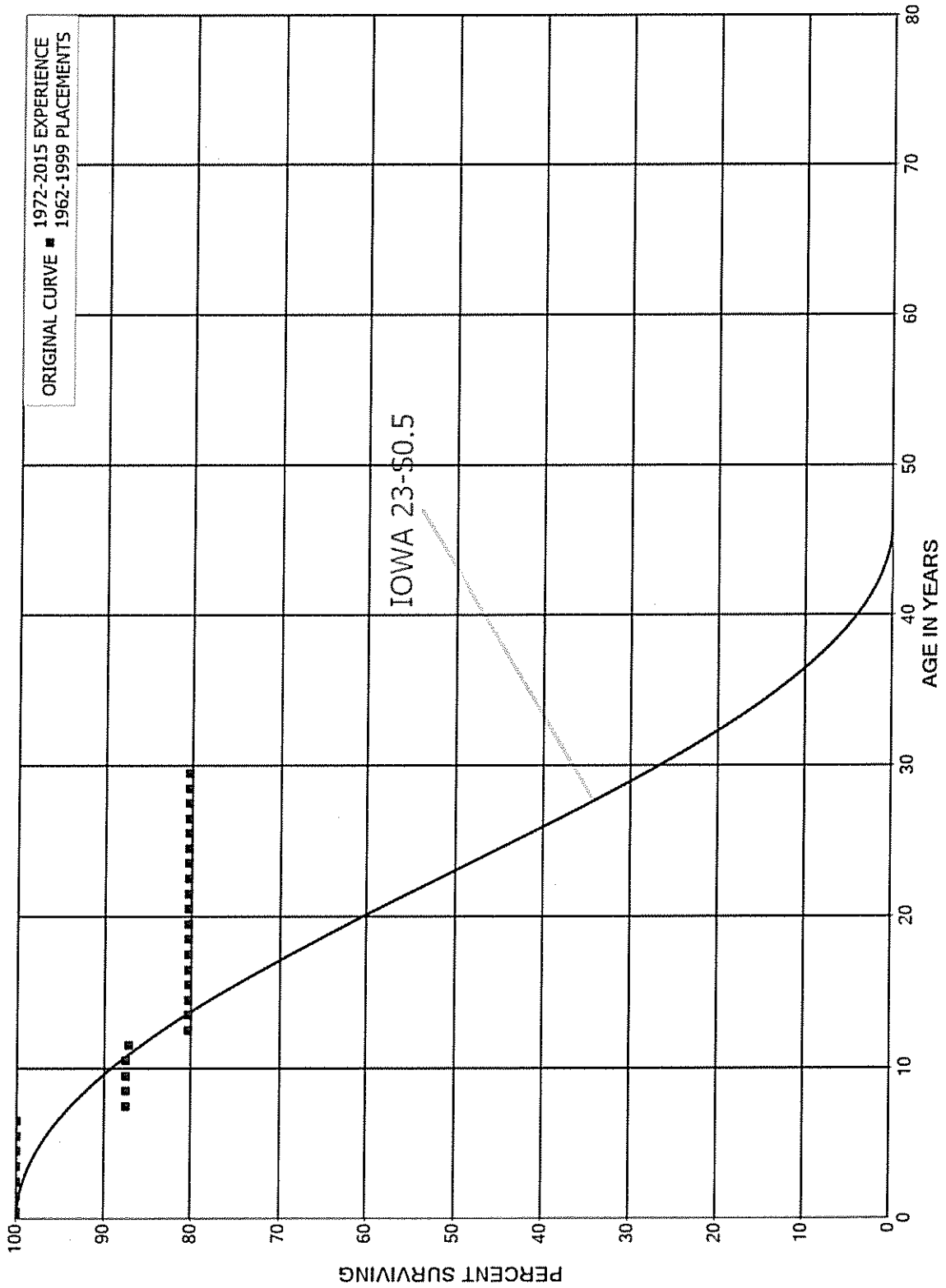
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 387.1 OTHER EQUIPMENT - CATHODIC PROTECTION TESTING

ORIGINAL LIFE TABLE

PLACEMENT BAND 1989-2011			EXPERIENCE BAND 1989-2015		
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	173,859		0.0000	1.0000	100.00
0.5	173,859		0.0000	1.0000	100.00
1.5	173,859		0.0000	1.0000	100.00
2.5	173,859		0.0000	1.0000	100.00
3.5	173,859		0.0000	1.0000	100.00
4.5	138,950		0.0000	1.0000	100.00
5.5	138,950		0.0000	1.0000	100.00
6.5	138,950		0.0000	1.0000	100.00
7.5	138,950		0.0000	1.0000	100.00
8.5	138,950		0.0000	1.0000	100.00
9.5	138,950		0.0000	1.0000	100.00
10.5	129,084		0.0000	1.0000	100.00
11.5	129,084		0.0000	1.0000	100.00
12.5	129,084		0.0000	1.0000	100.00
13.5	129,084		0.0000	1.0000	100.00
14.5	129,084		0.0000	1.0000	100.00
15.5	129,084		0.0000	1.0000	100.00
16.5	129,084		0.0000	1.0000	100.00
17.5	129,084		0.0000	1.0000	100.00
18.5	129,084		0.0000	1.0000	100.00
19.5	129,084		0.0000	1.0000	100.00
20.5	129,084		0.0000	1.0000	100.00
21.5	129,084		0.0000	1.0000	100.00
22.5	129,084		0.0000	1.0000	100.00
23.5	46,148		0.0000	1.0000	100.00
24.5	27,929		0.0000	1.0000	100.00
25.5	18,825		0.0000	1.0000	100.00
26.5					100.00

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 387.2 OTHER EQUIPMENT - CALORIMETERS AT GATE STATION
 ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 387.2 OTHER EQUIPMENT - CALORIMETERS AT GATE STATION

ORIGINAL LIFE TABLE

PLACEMENT BAND 1962-1999

EXPERIENCE BAND 1972-2015

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	107,454		0.0000	1.0000	100.00
0.5	107,454	25	0.0002	0.9998	100.00
1.5	107,454		0.0000	1.0000	99.98
2.5	107,454		0.0000	1.0000	99.98
3.5	107,454		0.0000	1.0000	99.98
4.5	107,454		0.0000	1.0000	99.98
5.5	107,454		0.0000	1.0000	99.98
6.5	107,454	13,401	0.1247	0.8753	99.98
7.5	107,824		0.0000	1.0000	87.51
8.5	115,988		0.0000	1.0000	87.51
9.5	116,853		0.0000	1.0000	87.51
10.5	104,958	370	0.0035	0.9965	87.51
11.5	104,588	8,164	0.0781	0.9219	87.20
12.5	96,424		0.0000	1.0000	80.39
13.5	96,424		0.0000	1.0000	80.39
14.5	96,424		0.0000	1.0000	80.39
15.5	96,424		0.0000	1.0000	80.39
16.5	93,709		0.0000	1.0000	80.39
17.5	89,269		0.0000	1.0000	80.39
18.5	76,317		0.0000	1.0000	80.39
19.5	73,945		0.0000	1.0000	80.39
20.5	71,691		0.0000	1.0000	80.39
21.5	64,033		0.0000	1.0000	80.39
22.5	59,167		0.0000	1.0000	80.39
23.5	59,167		0.0000	1.0000	80.39
24.5	37,876		0.0000	1.0000	80.39
25.5	37,624		0.0000	1.0000	80.39
26.5	37,624		0.0000	1.0000	80.39
27.5	37,624		0.0000	1.0000	80.39
28.5	37,624		0.0000	1.0000	80.39
29.5	11,859		0.0000	1.0000	80.39
30.5	11,859		0.0000	1.0000	80.39
31.5	11,859		0.0000	1.0000	80.39
32.5	11,859		0.0000	1.0000	80.39
33.5	11,859		0.0000	1.0000	80.39
34.5	11,859		0.0000	1.0000	80.39
35.5	11,859		0.0000	1.0000	80.39
36.5	11,859		0.0000	1.0000	80.39
37.5	11,859		0.0000	1.0000	80.39
38.5	11,859		0.0000	1.0000	80.39

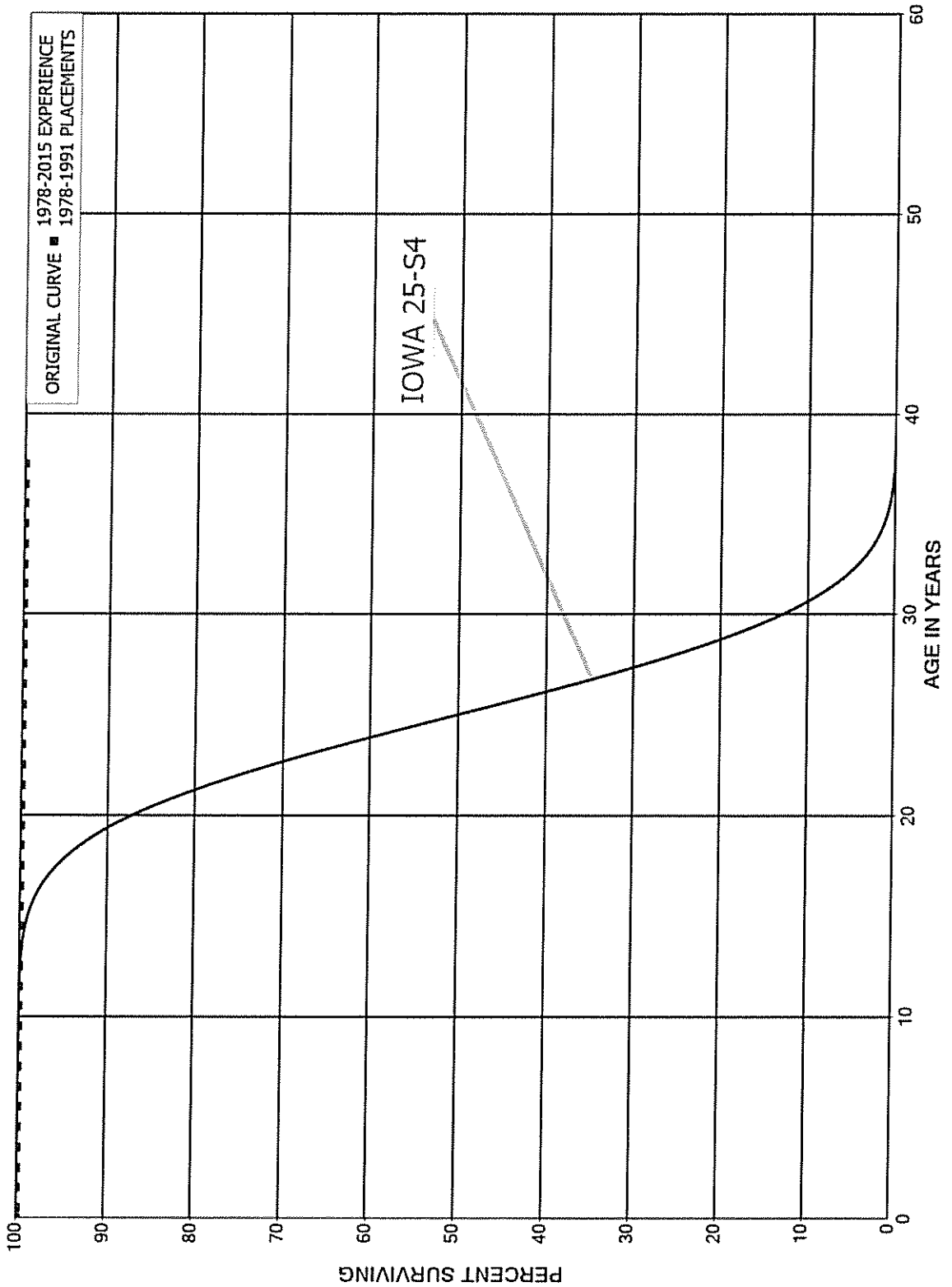
NORTHWEST NATURAL GAS COMPANY

ACCOUNT 387.2 OTHER EQUIPMENT - CALORIMETERS AT GATE STATION

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1962-1999			EXPERIENCE BAND 1972-2015		
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	11,859		0.0000	1.0000	80.39
40.5	11,859		0.0000	1.0000	80.39
41.5	11,859		0.0000	1.0000	80.39
42.5	11,859		0.0000	1.0000	80.39
43.5	865		0.0000	1.0000	80.39
44.5	865		0.0000	1.0000	80.39
45.5	865		0.0000	1.0000	80.39
46.5	865		0.0000	1.0000	80.39
47.5	865		0.0000	1.0000	80.39
48.5	865		0.0000	1.0000	80.39
49.5	865		0.0000	1.0000	80.39
50.5	865		0.0000	1.0000	80.39
51.5	865		0.0000	1.0000	80.39
52.5	865		0.0000	1.0000	80.39
53.5					80.39

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 387.3 OTHER EQUIPMENT - METER TESTING EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 387.3 OTHER EQUIPMENT - METER TESTING EQUIPMENT

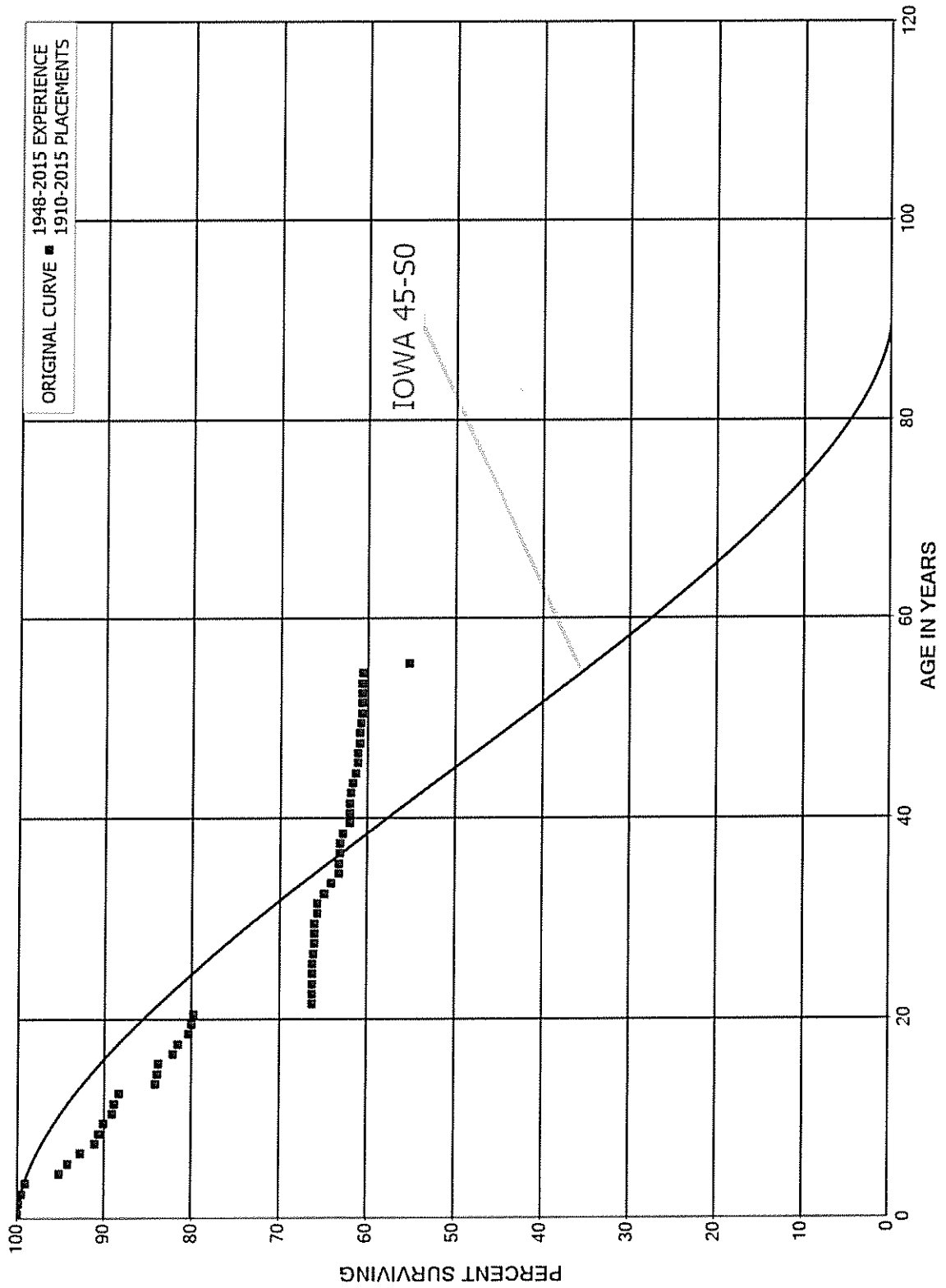
ORIGINAL LIFE TABLE

PLACEMENT BAND 1978-1991

EXPERIENCE BAND 1978-2015

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	60,776		0.0000	1.0000	100.00
0.5	60,776		0.0000	1.0000	100.00
1.5	60,776		0.0000	1.0000	100.00
2.5	60,776		0.0000	1.0000	100.00
3.5	60,776		0.0000	1.0000	100.00
4.5	60,776		0.0000	1.0000	100.00
5.5	60,776		0.0000	1.0000	100.00
6.5	60,776		0.0000	1.0000	100.00
7.5	60,776		0.0000	1.0000	100.00
8.5	60,776		0.0000	1.0000	100.00
9.5	60,776		0.0000	1.0000	100.00
10.5	72,671		0.0000	1.0000	100.00
11.5	72,671		0.0000	1.0000	100.00
12.5	72,671		0.0000	1.0000	100.00
13.5	72,671		0.0000	1.0000	100.00
14.5	72,671		0.0000	1.0000	100.00
15.5	72,671		0.0000	1.0000	100.00
16.5	72,671		0.0000	1.0000	100.00
17.5	72,671		0.0000	1.0000	100.00
18.5	72,671		0.0000	1.0000	100.00
19.5	72,671		0.0000	1.0000	100.00
20.5	72,671		0.0000	1.0000	100.00
21.5	72,671		0.0000	1.0000	100.00
22.5	72,671		0.0000	1.0000	100.00
23.5	72,671		0.0000	1.0000	100.00
24.5	60,776		0.0000	1.0000	100.00
25.5	60,170		0.0000	1.0000	100.00
26.5	60,170		0.0000	1.0000	100.00
27.5	60,170		0.0000	1.0000	100.00
28.5	58,537		0.0000	1.0000	100.00
29.5	57,190		0.0000	1.0000	100.00
30.5	16,792		0.0000	1.0000	100.00
31.5	15,567		0.0000	1.0000	100.00
32.5	15,567		0.0000	1.0000	100.00
33.5	15,567		0.0000	1.0000	100.00
34.5	15,567		0.0000	1.0000	100.00
35.5	15,567		0.0000	1.0000	100.00
36.5	6,819		0.0000	1.0000	100.00
37.5					100.00

NORTHWEST NATURAL GAS COMPANY
ACCOUNTS 390 AND 390.1 STRUCTURES AND IMPROVEMENTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 390 AND 390.1 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2015

EXPERIENCE BAND 1948-2015

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	91,249,774	39,299	0.0004	0.9996	100.00
0.5	87,960,378	63,712	0.0007	0.9993	99.96
1.5	77,770,746	278,632	0.0036	0.9964	99.88
2.5	43,003,373	192,359	0.0045	0.9955	99.53
3.5	33,543,459	1,337,593	0.0399	0.9601	99.08
4.5	28,556,117	300,827	0.0105	0.9895	95.13
5.5	27,459,477	393,787	0.0143	0.9857	94.13
6.5	26,456,973	475,102	0.0180	0.9820	92.78
7.5	25,849,155	126,822	0.0049	0.9951	91.11
8.5	25,622,895	163,031	0.0064	0.9936	90.67
9.5	24,282,251	280,746	0.0116	0.9884	90.09
10.5	22,675,480	66,400	0.0029	0.9971	89.05
11.5	18,381,641	99,411	0.0054	0.9946	88.79
12.5	16,979,230	789,433	0.0465	0.9535	88.31
13.5	15,912,377	38,768	0.0024	0.9976	84.20
14.5	15,411,574	24,337	0.0016	0.9984	84.00
15.5	15,128,770	294,764	0.0195	0.9805	83.86
16.5	14,056,268	100,550	0.0072	0.9928	82.23
17.5	12,939,652	200,374	0.0155	0.9845	81.64
18.5	12,361,708	49,847	0.0040	0.9960	80.38
19.5	11,741,440	23,841	0.0020	0.9980	80.05
20.5	10,856,647	1,843,884	0.1698	0.8302	79.89
21.5	8,677,043	913	0.0001	0.9999	66.32
22.5	8,071,617	4	0.0000	1.0000	66.31
23.5	7,599,520	1,426	0.0002	0.9998	66.31
24.5	7,437,401	3,587	0.0005	0.9995	66.30
25.5	7,153,364	9,617	0.0013	0.9987	66.27
26.5	6,910,922	9,618	0.0014	0.9986	66.18
27.5	6,820,233	3,094	0.0005	0.9995	66.09
28.5	6,735,452	2,415	0.0004	0.9996	66.06
29.5	6,614,712	27,872	0.0042	0.9958	66.03
30.5	6,537,067	6,135	0.0009	0.9991	65.76
31.5	6,500,657	70,812	0.0109	0.9891	65.69
32.5	6,397,569	74,315	0.0116	0.9884	64.98
33.5	6,063,013	84,148	0.0139	0.9861	64.22
34.5	5,552,576	7,153	0.0013	0.9987	63.33
35.5	5,450,444	2,060	0.0004	0.9996	63.25
36.5	5,374,471	6,901	0.0013	0.9987	63.23
37.5	4,498,383	18,930	0.0042	0.9958	63.15
38.5	4,390,936	53,995	0.0123	0.9877	62.88

NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 390 AND 390.1 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1948-2015			
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	3,539,201	710	0.0002	0.9998	62.11	
40.5	3,243,354	3,798	0.0012	0.9988	62.09	
41.5	2,830,827	3,567	0.0013	0.9987	62.02	
42.5	2,590,662	9,479	0.0037	0.9963	61.94	
43.5	2,499,942	12,969	0.0052	0.9948	61.72	
44.5	2,465,236	8,014	0.0033	0.9967	61.40	
45.5	2,435,918	786	0.0003	0.9997	61.20	
46.5	1,403,266	4,086	0.0029	0.9971	61.18	
47.5	1,345,004	622	0.0005	0.9995	61.00	
48.5	1,315,740	3,943	0.0030	0.9970	60.97	
49.5	659,409	450	0.0007	0.9993	60.79	
50.5	382,918	28	0.0001	0.9999	60.75	
51.5	252,457		0.0000	1.0000	60.74	
52.5	245,249		0.0000	1.0000	60.74	
53.5	244,506	418	0.0017	0.9983	60.74	
54.5	236,981	20,908	0.0882	0.9118	60.64	
55.5	217,744	2,262	0.0104	0.9896	55.29	
56.5	219,098	558	0.0025	0.9975	54.71	
57.5	216,708	3,476	0.0160	0.9840	54.58	
58.5	209,413		0.0000	1.0000	53.70	
59.5	163,355	435	0.0027	0.9973	53.70	
60.5	121,064		0.0000	1.0000	53.56	
61.5	121,001		0.0000	1.0000	53.56	
62.5	109,641		0.0000	1.0000	53.56	
63.5	80,421		0.0000	1.0000	53.56	
64.5	119,819	14,542	0.1214	0.8786	53.56	
65.5	105,029	9,030	0.0860	0.9140	47.06	
66.5	87,656		0.0000	1.0000	43.01	
67.5	84,594		0.0000	1.0000	43.01	
68.5	77,813	8,917	0.1146	0.8854	43.01	
69.5	68,703		0.0000	1.0000	38.08	
70.5	67,941		0.0000	1.0000	38.08	
71.5	67,910		0.0000	1.0000	38.08	
72.5	64,852		0.0000	1.0000	38.08	
73.5	64,341		0.0000	1.0000	38.08	
74.5	62,997		0.0000	1.0000	38.08	
75.5	62,902		0.0000	1.0000	38.08	
76.5	62,795		0.0000	1.0000	38.08	
77.5	61,850		0.0000	1.0000	38.08	
78.5	61,614		0.0000	1.0000	38.08	

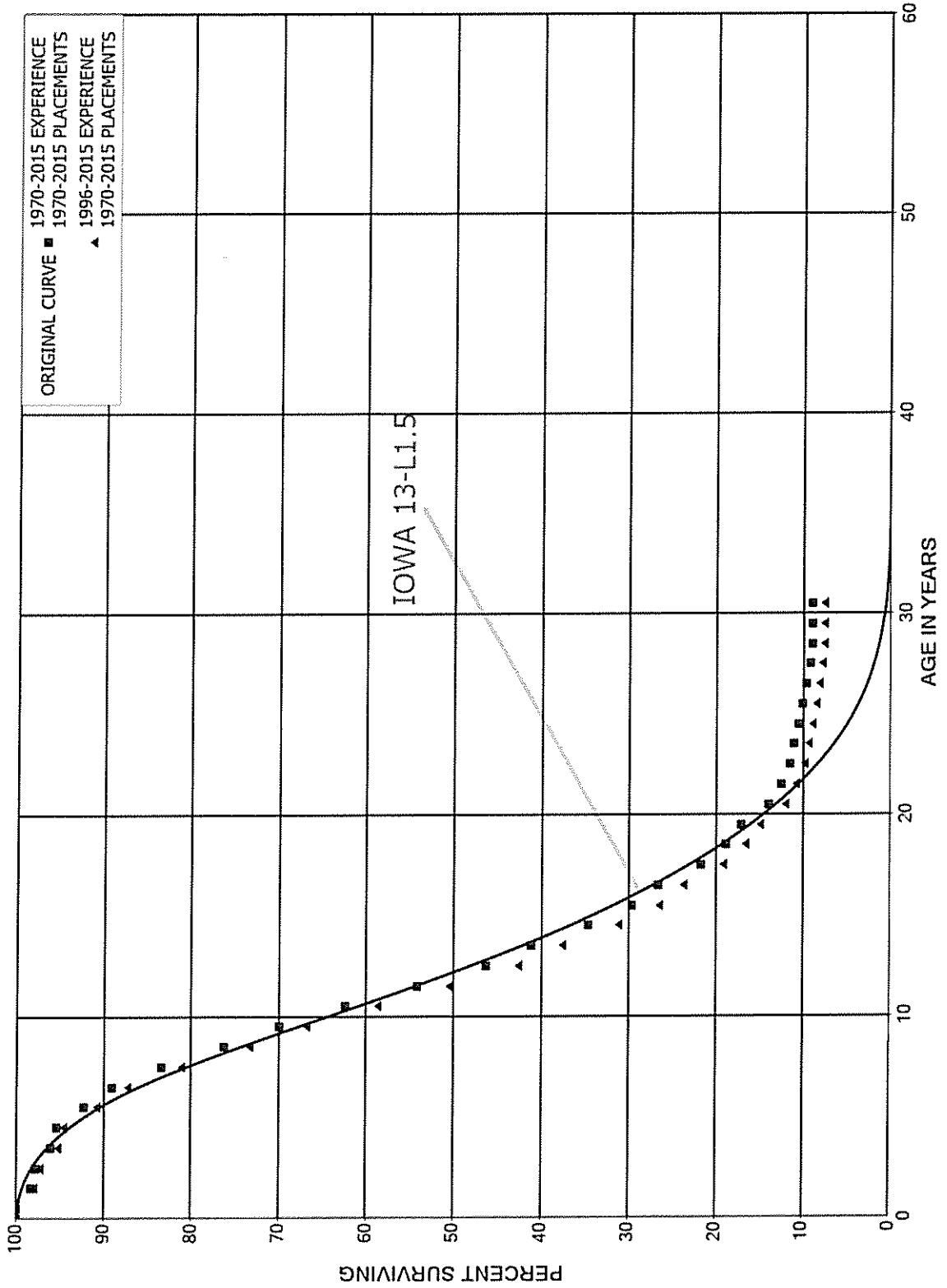
NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 390 AND 390.1 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2015			EXPERIENCE BAND 1948-2015		
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	61,581		0.0000	1.0000	38.08
80.5	61,581		0.0000	1.0000	38.08
81.5	61,581		0.0000	1.0000	38.08
82.5	61,581		0.0000	1.0000	38.08
83.5	61,581		0.0000	1.0000	38.08
84.5	61,581		0.0000	1.0000	38.08
85.5	61,404	416	0.0068	0.9932	38.08
86.5	60,988		0.0000	1.0000	37.82
87.5	60,988		0.0000	1.0000	37.82
88.5	60,443		0.0000	1.0000	37.82
89.5	60,443		0.0000	1.0000	37.82
90.5	60,351		0.0000	1.0000	37.82
91.5	60,340	4,535	0.0752	0.9248	37.82
92.5	55,738		0.0000	1.0000	34.98
93.5	55,228		0.0000	1.0000	34.98
94.5	55,228	5,153	0.0933	0.9067	34.98
95.5	49,651		0.0000	1.0000	31.72
96.5	49,651		0.0000	1.0000	31.72
97.5	49,651		0.0000	1.0000	31.72
98.5	49,651		0.0000	1.0000	31.72
99.5	49,651		0.0000	1.0000	31.72
100.5	49,479		0.0000	1.0000	31.72
101.5	49,479		0.0000	1.0000	31.72
102.5					31.72

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 392 TRANSPORTATION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY

ACCOUNT 392 TRANSPORTATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1970-2015

EXPERIENCE BAND 1970-2015

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	65,273,004		0.0000	1.0000	100.00
0.5	59,275,158	1,043,743	0.0176	0.9824	100.00
1.5	56,117,128	277,244	0.0049	0.9951	98.24
2.5	52,686,550	913,832	0.0173	0.9827	97.75
3.5	46,426,311	295,923	0.0064	0.9936	96.06
4.5	41,583,807	1,401,032	0.0337	0.9663	95.45
5.5	38,404,369	1,340,122	0.0349	0.9651	92.23
6.5	34,751,652	2,180,431	0.0627	0.9373	89.01
7.5	30,902,176	2,653,456	0.0859	0.9141	83.43
8.5	27,082,987	2,225,352	0.0822	0.9178	76.26
9.5	23,986,506	2,608,860	0.1088	0.8912	70.00
10.5	20,170,948	2,638,871	0.1308	0.8692	62.38
11.5	16,204,566	2,372,187	0.1464	0.8536	54.22
12.5	12,808,583	1,421,575	0.1110	0.8890	46.28
13.5	10,865,267	1,738,685	0.1600	0.8400	41.15
14.5	8,182,284	1,177,405	0.1439	0.8561	34.56
15.5	6,440,807	647,095	0.1005	0.8995	29.59
16.5	5,545,444	1,023,145	0.1845	0.8155	26.62
17.5	4,035,254	532,363	0.1319	0.8681	21.71
18.5	2,860,329	276,760	0.0968	0.9032	18.84
19.5	2,261,841	414,817	0.1834	0.8166	17.02
20.5	1,541,538	152,993	0.0992	0.9008	13.90
21.5	821,099	66,328	0.0808	0.9192	12.52
22.5	663,359	23,841	0.0359	0.9641	11.51
23.5	609,927	32,688	0.0536	0.9464	11.09
24.5	530,957	24,228	0.0456	0.9544	10.50
25.5	464,424	18,637	0.0401	0.9599	10.02
26.5	433,902	20,638	0.0476	0.9524	9.62
27.5	367,813	7,829	0.0213	0.9787	9.16
28.5	327,634		0.0000	1.0000	8.97
29.5	327,634		0.0000	1.0000	8.97
30.5	283,273	4,259	0.0150	0.9850	8.97
31.5	242,296	51,780	0.2137	0.7863	8.83
32.5	147,925	15,227	0.1029	0.8971	6.94
33.5	132,698		0.0000	1.0000	6.23
34.5	89,556		0.0000	1.0000	6.23
35.5	88,975		0.0000	1.0000	6.23
36.5	88,975		0.0000	1.0000	6.23
37.5	88,975		0.0000	1.0000	6.23
38.5	88,975	9,517	0.1070	0.8930	6.23

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 392 TRANSPORTATION EQUIPMENT
 ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1970-2015			EXPERIENCE BAND 1970-2015			
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	72,995	3,518	0.0482	0.9518	5.56	
40.5	69,477		0.0000	1.0000	5.29	
41.5	69,477		0.0000	1.0000	5.29	
42.5	69,477		0.0000	1.0000	5.29	
43.5					5.29	

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 392 TRANSPORTATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1970-2015

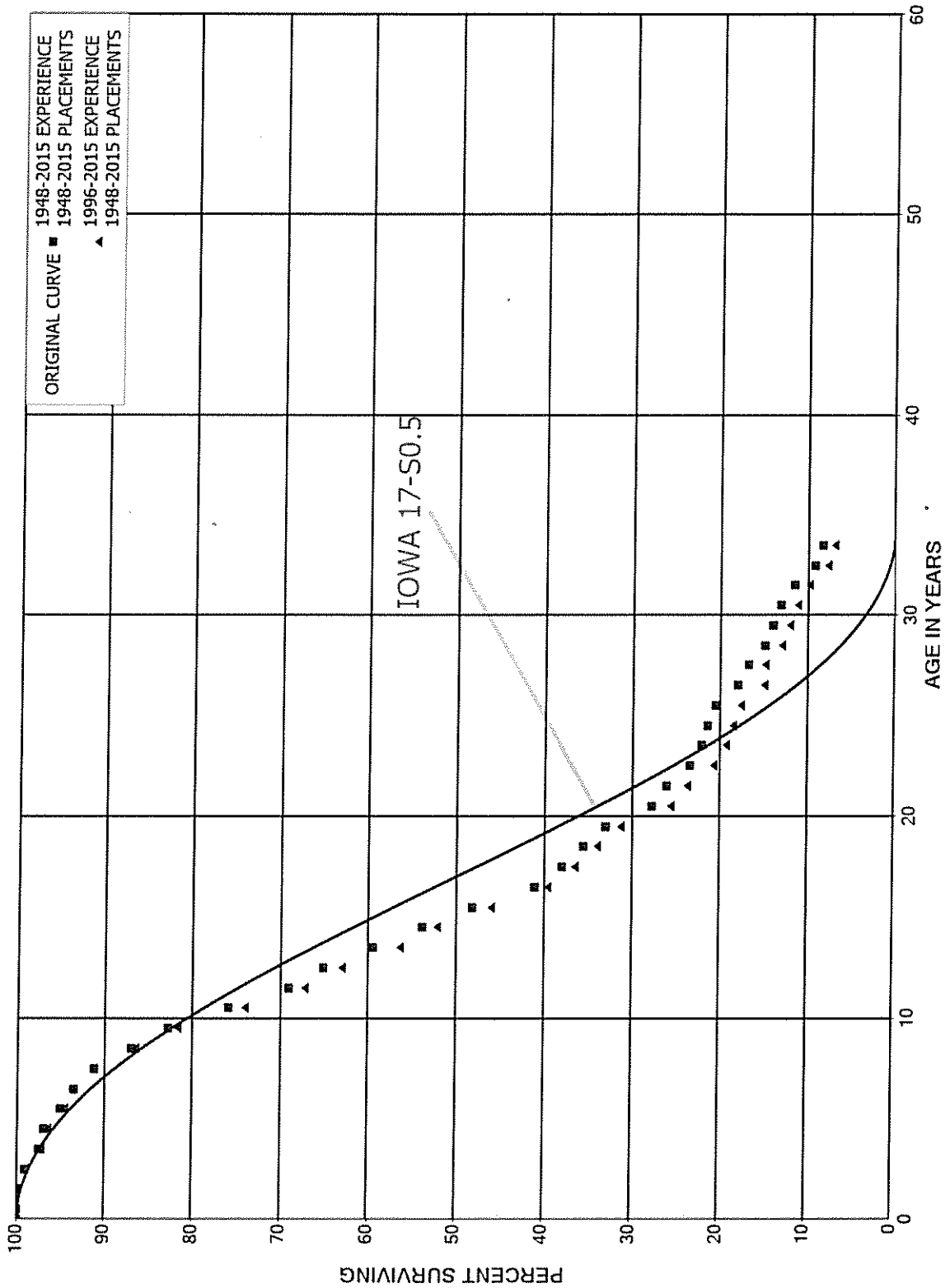
EXPERIENCE BAND 1996-2015

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	48,880,225		0.0000	1.0000	100.00
0.5	45,742,880	1,043,743	0.0228	0.9772	100.00
1.5	44,938,641	277,244	0.0062	0.9938	97.72
2.5	43,978,176	913,832	0.0208	0.9792	97.12
3.5	38,623,587	295,923	0.0077	0.9923	95.10
4.5	35,560,044	1,401,032	0.0394	0.9606	94.37
5.5	33,618,187	1,340,122	0.0399	0.9601	90.65
6.5	30,958,429	2,180,431	0.0704	0.9296	87.04
7.5	27,832,128	2,653,456	0.0953	0.9047	80.91
8.5	24,640,354	2,225,352	0.0903	0.9097	73.19
9.5	21,546,776	2,608,860	0.1211	0.8789	66.58
10.5	18,812,391	2,638,871	0.1403	0.8597	58.52
11.5	15,093,058	2,372,187	0.1572	0.8428	50.31
12.5	11,933,732	1,421,575	0.1191	0.8809	42.40
13.5	10,221,501	1,738,685	0.1701	0.8299	37.35
14.5	7,704,420	1,177,405	0.1528	0.8472	31.00
15.5	6,188,431	647,095	0.1046	0.8954	26.26
16.5	5,337,114	1,023,145	0.1917	0.8083	23.52
17.5	3,871,291	532,363	0.1375	0.8625	19.01
18.5	2,721,217	276,760	0.1017	0.8983	16.39
19.5	2,129,192	414,817	0.1948	0.8052	14.73
20.5	1,408,889	152,993	0.1086	0.8914	11.86
21.5	718,518	66,328	0.0923	0.9077	10.57
22.5	563,155	23,841	0.0423	0.9577	9.59
23.5	595,730	32,688	0.0549	0.9451	9.19
24.5	521,440	24,228	0.0465	0.9535	8.68
25.5	464,424	18,637	0.0401	0.9599	8.28
26.5	433,902	20,638	0.0476	0.9524	7.95
27.5	367,813	7,829	0.0213	0.9787	7.57
28.5	327,634		0.0000	1.0000	7.41
29.5	327,634		0.0000	1.0000	7.41
30.5	283,273	4,259	0.0150	0.9850	7.41
31.5	242,296	51,780	0.2137	0.7863	7.30
32.5	147,925	15,227	0.1029	0.8971	5.74
33.5	132,698		0.0000	1.0000	5.15
34.5	89,556		0.0000	1.0000	5.15
35.5	88,975		0.0000	1.0000	5.15
36.5	88,975		0.0000	1.0000	5.15
37.5	88,975		0.0000	1.0000	5.15
38.5	88,975	9,517	0.1070	0.8930	5.15

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 392 TRANSPORTATION EQUIPMENT
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1970-2015			EXPERIENCE BAND 1996-2015			
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	72,995	3,518	0.0482	0.9518	4.60	
40.5	69,477		0.0000	1.0000	4.38	
41.5	69,477		0.0000	1.0000	4.38	
42.5	69,477		0.0000	1.0000	4.38	
43.5					4.38	

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 396 POWER OPERATED EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



NORTHWEST NATURAL GAS COMPANY
ACCOUNT 396 POWER OPERATED EQUIPMENT
ORIGINAL LIFE TABLE

PLACEMENT BAND 1948-2015			EXPERIENCE BAND 1948-2015			
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	14,967,939	4,198	0.0003	0.9997	100.00	
0.5	13,840,607		0.0000	1.0000	99.97	
1.5	13,505,871	124,142	0.0092	0.9908	99.97	
2.5	12,065,474	183,314	0.0152	0.9848	99.05	
3.5	10,975,962	66,342	0.0060	0.9940	97.55	
4.5	10,214,603	198,255	0.0194	0.9806	96.96	
5.5	9,210,459	147,351	0.0160	0.9840	95.08	
6.5	9,102,745	227,096	0.0249	0.9751	93.56	
7.5	8,820,875	413,567	0.0469	0.9531	91.22	
8.5	8,116,790	379,244	0.0467	0.9533	86.94	
9.5	6,863,213	569,277	0.0829	0.9171	82.88	
10.5	5,099,800	466,358	0.0914	0.9086	76.01	
11.5	4,198,184	238,180	0.0567	0.9433	69.06	
12.5	3,779,662	325,295	0.0861	0.9139	65.14	
13.5	3,045,231	292,885	0.0962	0.9038	59.53	
14.5	2,713,471	285,887	0.1054	0.8946	53.81	
15.5	2,246,830	331,859	0.1477	0.8523	48.14	
16.5	1,858,472	141,027	0.0759	0.9241	41.03	
17.5	1,620,220	103,729	0.0640	0.9360	37.91	
18.5	1,367,390	95,556	0.0699	0.9301	35.49	
19.5	1,194,167	190,983	0.1599	0.8401	33.01	
20.5	899,952	54,760	0.0608	0.9392	27.73	
21.5	680,929	70,221	0.1031	0.8969	26.04	
22.5	588,835	32,578	0.0553	0.9447	23.36	
23.5	552,666	17,363	0.0314	0.9686	22.06	
24.5	467,817	20,056	0.0429	0.9571	21.37	
25.5	444,009	54,767	0.1233	0.8767	20.45	
26.5	357,260	23,924	0.0670	0.9330	17.93	
27.5	299,538	34,026	0.1136	0.8864	16.73	
28.5	239,944	13,825	0.0576	0.9424	14.83	
29.5	247,837	15,600	0.0629	0.9371	13.98	
30.5	165,501	19,501	0.1178	0.8822	13.10	
31.5	146,000	29,431	0.2016	0.7984	11.55	
32.5	116,569	12,255	0.1051	0.8949	9.22	
33.5	104,314	49,370	0.4733	0.5267	8.25	
34.5	54,944		0.0000	1.0000	4.35	
35.5	54,944		0.0000	1.0000	4.35	
36.5	54,944		0.0000	1.0000	4.35	
37.5	54,944		0.0000	1.0000	4.35	
38.5	54,944		0.0000	1.0000	4.35	

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 396 POWER OPERATED EQUIPMENT
 ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1948-2015			EXPERIENCE BAND 1948-2015		
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	54,944		0.0000	1.0000	4.35
40.5	54,944		0.0000	1.0000	4.35
41.5	30,054		0.0000	1.0000	4.35
42.5	30,054	20,334	0.6766	0.3234	4.35
43.5	1,025		0.0000	1.0000	1.41
44.5	1,025		0.0000	1.0000	1.41
45.5	1,025		0.0000	1.0000	1.41
46.5	1,025		0.0000	1.0000	1.41
47.5	1,025	1,025	1.0000		1.41
48.5					

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 396 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1948-2015			EXPERIENCE BAND 1996-2015			
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	11,787,449	4,198	0.0004	0.9996	100.00	
0.5	10,958,196		0.0000	1.0000	99.96	
1.5	11,101,595	124,142	0.0112	0.9888	99.96	
2.5	9,875,635	183,314	0.0186	0.9814	98.85	
3.5	8,993,267	66,342	0.0074	0.9926	97.01	
4.5	8,409,503	165,711	0.0197	0.9803	96.30	
5.5	7,601,746	61,958	0.0082	0.9918	94.40	
6.5	7,609,768	212,282	0.0279	0.9721	93.63	
7.5	7,492,401	392,084	0.0523	0.9477	91.02	
8.5	6,920,916	379,244	0.0548	0.9452	86.25	
9.5	5,789,977	547,682	0.0946	0.9054	81.53	
10.5	4,247,470	387,580	0.0912	0.9088	73.82	
11.5	3,459,447	219,140	0.0633	0.9367	67.08	
12.5	3,078,874	325,295	0.1057	0.8943	62.83	
13.5	2,355,605	180,024	0.0764	0.9236	56.19	
14.5	2,213,049	258,235	0.1167	0.8833	51.90	
15.5	1,863,148	262,335	0.1408	0.8592	45.84	
16.5	1,619,467	125,461	0.0775	0.9225	39.39	
17.5	1,461,518	103,729	0.0710	0.9290	36.34	
18.5	1,208,688	95,556	0.0791	0.9209	33.76	
19.5	1,035,465	190,983	0.1844	0.8156	31.09	
20.5	750,550	54,760	0.0730	0.9270	25.35	
21.5	551,028	70,221	0.1274	0.8726	23.50	
22.5	458,934	32,578	0.0710	0.9290	20.51	
23.5	422,765	17,363	0.0411	0.9589	19.05	
24.5	388,804	19,156	0.0493	0.9507	18.27	
25.5	365,896	54,767	0.1497	0.8503	17.37	
26.5	279,147	3,589	0.0129	0.9871	14.77	
27.5	262,094	34,026	0.1298	0.8702	14.58	
28.5	202,500	13,825	0.0683	0.9317	12.69	
29.5	213,227	15,600	0.0732	0.9268	11.82	
30.5	155,781	19,501	0.1252	0.8748	10.96	
31.5	136,280	29,431	0.2160	0.7840	9.59	
32.5	115,544	12,255	0.1061	0.8939	7.52	
33.5	103,289	49,370	0.4780	0.5220	6.72	
34.5	53,919		0.0000	1.0000	3.51	
35.5	53,919		0.0000	1.0000	3.51	
36.5	53,919		0.0000	1.0000	3.51	
37.5	53,919		0.0000	1.0000	3.51	
38.5	53,919		0.0000	1.0000	3.51	

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 396 POWER OPERATED EQUIPMENT
 ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1948-2015			EXPERIENCE BAND 1996-2015		
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	53,919		0.0000	1.0000	3.51
40.5	53,919		0.0000	1.0000	3.51
41.5	29,029		0.0000	1.0000	3.51
42.5	29,029	20,334	0.7005	0.2995	3.51
43.5					1.05
44.5					
45.5					
46.5					
47.5	1,025	1,025	1.0000		
48.5					

PART VIII. NET SALVAGE STATISTICS

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 376.11 MAINS - HP 4" AND LESS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
1993	1,069,005	177,357	17		0	177,357-	17-
1994	954,173	418,204	44		0	418,204-	44-
1995	109,033	352,767	324		0	352,767-	324-
1996	797,078	344,746	43		0	344,746-	43-
1997	1,032,715	360,247	35		0	360,247-	35-
1998	872,394	450,001	52		0	450,001-	52-
1999	780,557	428,214	55		0	428,214-	55-
2000	614,177	53,145	9		0	53,145-	9-
2001	1,512,573	573,397	38		0	573,397-	38-
2002	639,550	32,158	5	53,763-	8-	85,921-	13-
2003	512,999	898,396	175		0	898,396-	175-
2004	570,982	786,509	138		0	786,509-	138-
2005	607,308	587,334	97		0	587,334-	97-
2006	2,835,245	631,929	22		0	631,929-	22-
2007	785,195	780,504	99		0	780,504-	99-
2008	387,425	615,810	159		0	615,810-	159-
2009	390,386	658,330	169	9,882	3	648,448-	166-
2010	286,857	1,135,691	396	19,623	7	1,116,068-	389-
2011	333,155	1,288,166	387	24,368	7	1,263,798-	379-
2012	260,936	885,994	340	16,811	6	869,183-	333-
2013	403,624	1,208,352	299	14,186	4	1,194,166-	296-
2014	185,874	1,143,050	615	21,146	11	1,121,904-	604-
2015	308,781	1,175,395	381	9,810	3	1,165,585-	377-
TOTAL	16,250,022	14,985,696	92	62,063	0	14,923,633-	92-

THREE-YEAR MOVING AVERAGES

93-95	710,737	316,109	44		0	316,109-	44-
94-96	620,095	371,906	60		0	371,906-	60-
95-97	646,275	352,587	55		0	352,587-	55-
96-98	900,729	384,998	43		0	384,998-	43-
97-99	895,222	412,821	46		0	412,821-	46-
98-00	755,709	310,453	41		0	310,453-	41-
99-01	969,102	351,585	36		0	351,585-	36-
00-02	922,100	219,567	24	17,921-	2-	237,488-	26-
01-03	888,374	501,317	56	17,921-	2-	519,238-	58-
02-04	574,510	572,354	100	17,921-	3-	590,275-	103-
03-05	563,763	757,413	134		0	757,413-	134-
04-06	1,337,845	668,591	50		0	668,591-	50-
05-07	1,409,249	666,589	47		0	666,589-	47-
06-08	1,335,955	676,081	51		0	676,081-	51-
07-09	521,002	684,881	131	3,294	1	681,587-	131-

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 376.11 MAINS - HP 4" AND LESS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YEAR MOVING AVERAGES							
08-10	354,889	803,277	226	9,835	3	793,442-	224-
09-11	336,799	1,027,396	305	17,958	5	1,009,438-	300-
10-12	293,649	1,103,284	376	20,267	7	1,083,016-	369-
11-13	332,572	1,127,504	339	18,455	6	1,109,049-	333-
12-14	283,478	1,079,132	381	17,381	6	1,061,751-	375-
13-15	299,426	1,175,599	393	15,047	5	1,160,552-	388-
FIVE-YEAR AVERAGE							
11-15	298,474	1,140,191	382	17,264	6	1,122,927-	376-

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 376.12 MAINS - HP 4" AND OVER

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
1993	362,987	49,326	14		0	49,326-	14-
1994	388,205	85,704	22		0	85,704-	22-
1995	235,477	97,726	42		0	97,726-	42-
1996	301,050	162,705	54		0	162,705-	54-
1997	774,203	143,601	19		0	143,601-	19-
1998	662,018	134,937	20		0	134,937-	20-
1999	1,121,884	224,053	20		15-	224,068-	20-
2000	1,076,379	33,249	3		0	33,249-	3-
2001	717,276	233,612	33		0	233,612-	33-
2002	1,126,355	27,133	2		0	27,133-	2-
2003	465,309	321,137	69	3,457	1	317,680-	68-
2004	534,013	582,613	109		0	582,613-	109-
2005	993,327	618,759	62		0	618,759-	62-
2006	826,032	641,124	78		0	641,124-	78-
2007	592,612	537,151	91		0	537,151-	91-
2008	407,047	562,047	138		0	562,047-	138-
2009	595,583	717,428	120	21,416	4	696,012-	117-
2010	588,034	922,250	157	53,157	9	869,093-	148-
2011	766,859	884,831	115	25,686	3	859,145-	112-
2012	3,746,279	1,082,936	29	16,964	0	1,065,972-	28-
2013	506,464	620,719	123	27,246	5	593,473-	117-
2014	3,488,782	1,457,268	42	22,982	1	1,434,286-	41-
2015	531,012	1,669,460	314	10,734	2	1,658,726-	312-
TOTAL	20,807,187	11,809,769	57	181,627	1	11,628,142-	56-

THREE-YEAR MOVING AVERAGES

93-95	328,890	77,585	24		0	77,585-	24-
94-96	308,244	115,378	37		0	115,378-	37-
95-97	436,910	134,677	31		0	134,677-	31-
96-98	579,090	147,081	25		0	147,081-	25-
97-99	852,702	167,530	20		5-	167,535-	20-
98-00	953,427	130,746	14		5-	130,751-	14-
99-01	971,846	163,638	17		5-	163,643-	17-
00-02	973,337	97,998	10		0	97,998-	10-
01-03	769,647	193,961	25	1,152	0	192,808-	25-
02-04	708,559	310,294	44	1,152	0	309,142-	44-
03-05	664,216	507,503	76	1,152	0	506,351-	76-
04-06	784,457	614,165	78		0	614,165-	78-
05-07	803,990	599,011	75		0	599,011-	75-
06-08	608,564	580,107	95		0	580,107-	95-
07-09	531,747	605,542	114	7,139	1	598,403-	113-

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 376.12 MAINS - HP 4" AND OVER

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YEAR MOVING AVERAGES							
08-10	530,221	733,908	138	24,858	5	709,051-	134-
09-11	650,159	841,503	129	33,420	5	808,083-	124-
10-12	1,700,391	963,339	57	31,936	2	931,403-	55-
11-13	1,673,201	862,829	52	23,299	1	839,530-	50-
12-14	2,580,508	1,053,641	41	22,397	1	1,031,244-	40-
13-15	1,508,753	1,249,149	83	20,321	1	1,228,828-	81-
FIVE-YEAR AVERAGE							
11-15	1,807,879	1,143,043	63	20,722	1	1,122,320-	62-

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
1993	2,841,387	396,430	14		0	396,430-	14-
1994	2,500,176	663,273	27		0	663,273-	27-
1995	2,342,406	748,847	32		0	748,847-	32-
1996	2,230,345	741,543	33		0	741,543-	33-
1997	1,902,901	771,714	41		0	771,714-	41-
1998	1,960,026	842,083	43		0	842,083-	43-
1999	1,994,257	896,403	45		105-	896,508-	45-
2000	1,617,520	35,662	2		0	35,662-	2-
2001	1,390,478	876,280	63		0	876,280-	63-
2002	1,276,053	52,935	4	108,373-	8-	161,308-	13-
2003	1,166,885	923,195	79	133	0	923,062-	79-
2004	1,204,971	1,334,747	111		0	1,334,747-	111-
2005	1,698,676	1,075,509	63		0	1,075,509-	63-
2006	1,337,959	1,267,508	95		0	1,267,508-	95-
2007	1,674,091	2,072,481	124		0	2,072,481-	124-
2008	986,328	2,488,358	252		0	2,488,358-	252-
2009	430,790	465,616	108		0	465,616-	108-
2010	496,643	1,318,460	265		0	1,318,460-	265-
2011	489,210	1,171,358	239		0	1,171,358-	239-
2012	689,693	2,784,271	404		0	2,784,271-	404-
2013	1,699,245	2,306,446	136		0	2,306,446-	136-
2014	1,630,916	2,933,879	180		0	2,933,879-	180-
2015	1,293,428	2,577,664	199		0	2,577,664-	199-
TOTAL	34,854,384	28,744,662	82	108,345-	0	28,853,007-	83-

THREE-YEAR MOVING AVERAGES

93-95	2,561,323	602,850	24		0	602,850-	24-
94-96	2,357,642	717,888	30		0	717,888-	30-
95-97	2,158,551	754,035	35		0	754,035-	35-
96-98	2,031,091	785,113	39		0	785,113-	39-
97-99	1,952,395	836,733	43	35-	0	836,768-	43-
98-00	1,857,268	591,383	32	35-	0	591,418-	32-
99-01	1,667,418	602,782	36	35-	0	602,817-	36-
00-02	1,428,017	321,626	23	36,124-	3-	357,750-	25-
01-03	1,277,805	617,470	48	36,080-	3-	653,550-	51-
02-04	1,215,970	770,292	63	36,080-	3-	806,372-	66-
03-05	1,356,844	1,111,150	82	44	0	1,111,106-	82-
04-06	1,413,869	1,225,921	87		0	1,225,921-	87-
05-07	1,570,242	1,471,833	94		0	1,471,833-	94-
06-08	1,332,793	1,942,782	146		0	1,942,782-	146-
07-09	1,030,403	1,675,485	163		0	1,675,485-	163-

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YEAR MOVING AVERAGES							
08-10	637,920	1,424,145	223		0	1,424,145-	223-
09-11	472,214	985,145	209		0	985,145-	209-
10-12	558,515	1,758,030	315		0	1,758,030-	315-
11-13	959,383	2,087,358	218		0	2,087,358-	218-
12-14	1,339,951	2,674,865	200		0	2,674,865-	200-
13-15	1,541,196	2,605,996	169		0	2,605,996-	169-
FIVE-YEAR AVERAGE							
11-15	1,160,498	2,354,724	203		0	2,354,724-	203-

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
1993	35,525		0		0		0
1994	75,695		0	25	0	25	0
1995	109,668		0	220	0	220	0
1996	169,183		0	158	0	158	0
1997	187,776		0	6,160	3	6,160	3
1998	234,076		0	16,920	7	16,920	7
1999	237,115		0	6,900	3	6,900	3
2000	182,134		0	1,936	1	1,936	1
2001	147,077		0		0		0
2002	205,198		0		0		0
2003	323,750		0		0		0
2004	293,768		0		0		0
2005	316,926		0		0		0
2006	517,442		0		0		0
2007	865,099		0		0		0
2008	679,498		0		0		0
2009	2,445,908		0		0		0
2010	832,853		0		0		0
2011	387,538		0		0		0
2012	442,790		0		0		0
2013	822,151		0		0		0
2014	839,332		0		0		0
2015	1,126,709		0		0		0
TOTAL	11,477,211		0	32,319	0	32,319	0

THREE-YEAR MOVING AVERAGES

93-95	73,629		0	82	0	82	0
94-96	118,182		0	134	0	134	0
95-97	155,542		0	2,179	1	2,179	1
96-98	197,012		0	7,746	4	7,746	4
97-99	219,656		0	9,993	5	9,993	5
98-00	217,775		0	8,585	4	8,585	4
99-01	188,775		0	2,945	2	2,945	2
00-02	178,136		0	645	0	645	0
01-03	225,342		0		0		0
02-04	274,239		0		0		0
03-05	311,481		0		0		0
04-06	376,045		0		0		0
05-07	566,489		0		0		0
06-08	687,346		0		0		0
07-09	1,330,168		0		0		0

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YEAR MOVING AVERAGES							
08-10	1,319,420		0		0		0
09-11	1,222,100		0		0		0
10-12	554,394		0		0		0
11-13	550,826		0		0		0
12-14	701,424		0		0		0
13-15	929,397		0		0		0
FIVE-YEAR AVERAGE							
11-15	723,704		0		0		0

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 381.1 METERS - ELECTRIC

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2014	507,007		0		0		0
2015							
TOTAL	507,007		0		0		0

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381.2 METERS - ERT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2010	631,904		0		0		0
2011	272,574		0		0		0
2012	479,487		0		0		0
2013	500,211		0		0		0
2014	422,728		0		0		0
2015	607,184		0		0		0
TOTAL	2,914,088		0		0		0

THREE-YEAR MOVING AVERAGES

10-12	461,322		0		0		0
11-13	417,424		0		0		0
12-14	467,475		0		0		0
13-15	510,041		0		0		0

FIVE-YEAR AVERAGE

11-15	456,437		0		0		0
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NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382 METER INSTALLATIONS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
1993	46,518	2,598	6		0	2,598-	6-
1994	96,011	9,377	10	1,694	2	7,683-	8-
1995	131,729	3,165	2		0	3,165-	2-
1996	238,906	303	0		0	303-	0
1997	191,607	1,715	1		0	1,715-	1-
1998	328,975	596	0		0	596-	0
1999	370,161	8,471	2	290	0	8,181-	2-
2000	278,986		0	6,715	2	6,715	2
2001	242,395	6,349	3		0	6,349-	3-
2002	329,497	1,602	0		0	1,602-	0
2003	514,135	19,994	4		0	19,994-	4-
2004	480,981	4,365	1		0	4,365-	1-
2005	516,182		0		0		0
2006	813,246		0		0		0
2007	1,549,221		0		0		0
2008	1,077,855		0		0		0
2009	10,496,732		0		0		0
2010	3,633,211		0		0		0
2011	1,646,617		0		0		0
2012	1,809,044		0		0		0
2013	2,227,911		0		0		0
2014	3,182,624		0		0		0
2015	3,438,321		0		0		0
TOTAL	33,640,865	58,535	0	8,699	0	49,836-	0

THREE-YEAR MOVING AVERAGES

93-95	91,419	5,047	6	565	1	4,482-	5-
94-96	155,549	4,282	3	565	0	3,717-	2-
95-97	187,414	1,728	1		0	1,728-	1-
96-98	253,163	871	0		0	871-	0
97-99	296,914	3,594	1	97	0	3,497-	1-
98-00	326,041	3,022	1	2,335	1	687-	0
99-01	297,181	4,940	2	2,335	1	2,605-	1-
00-02	283,626	2,650	1	2,238	1	412-	0
01-03	362,009	9,315	3		0	9,315-	3-
02-04	441,538	8,654	2		0	8,654-	2-
03-05	503,766	8,120	2		0	8,120-	2-
04-06	603,470	1,455	0		0	1,455-	0
05-07	959,550		0		0		0
06-08	1,146,774		0		0		0
07-09	4,374,603		0		0		0

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 382 METER INSTALLATIONS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YEAR MOVING AVERAGES							
08-10	5,069,266		0		0		0
09-11	5,258,853		0		0		0
10-12	2,362,957		0		0		0
11-13	1,894,524		0		0		0
12-14	2,406,526		0		0		0
13-15	2,949,619		0		0		0
FIVE-YEAR AVERAGE							
11-15	2,460,903		0		0		0

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 382.1 METER INSTALLATIONS - ELECTRIC

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2014	518,377		0		0		0
2015							
TOTAL	518,377		0		0		0

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 382.2 METER INSTALLATIONS - ERT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2010	116,947		0		0		0
2011	52,987		0		0		0
2012	94,349		0		0		0
2013	101,403		0		0		0
2014	99,995		0		0		0
2015	113,714		0		0		0
TOTAL	579,395		0		0		0
THREE-YEAR MOVING AVERAGES							
10-12	88,094		0		0		0
11-13	82,913		0		0		0
12-14	98,582		0		0		0
13-15	105,037		0		0		0
FIVE-YEAR AVERAGE							
11-15	92,490		0		0		0

NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 390 AND 390.1 STRUCTURES AND IMPROVEMENTS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
1993		12,158				12,158-	
1994	723	155,281		50	7	155,231-	
1995		12,056				12,056-	
1996	374,465		0		0		0
1997	43,454	6,063	14		0	6,063-	14-
1998							
1999							
2000	125,000		0		0		0
2001	728,234		0		0		0
2002							
2003	6,013		0		0		0
2004							
2005	8,335		0		0		0
2006							
2007							
2008							
2009	2,852		0		0		0
2010							
2011							
2012	10,603		0		0		0
2013	649,588		0		0		0
2014	57,511		0		0		0
2015							
TOTAL	2,006,777	185,558	9	50	0	185,508-	9-

THREE-YEAR MOVING AVERAGES

93-95	241	59,832		17	7	59,815-	
94-96	125,063	55,779	45	17	0	55,762-	45-
95-97	139,306	6,040	4		0	6,040-	4-
96-98	139,306	2,021	1		0	2,021-	1-
97-99	14,485	2,021	14		0	2,021-	14-
98-00	41,667		0		0		0
99-01	284,411		0		0		0
00-02	284,411		0		0		0
01-03	244,749		0		0		0
02-04	2,004		0		0		0
03-05	4,783		0		0		0
04-06	2,778		0		0		0
05-07	2,778		0		0		0
06-08							
07-09	951		0		0		0

NORTHWEST NATURAL GAS COMPANY

ACCOUNTS 390 AND 390.1 STRUCTURES AND IMPROVEMENTS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YEAR MOVING AVERAGES							
08-10	951		0		0		0
09-11	951		0		0		0
10-12	3,534		0		0		0
11-13	220,064		0		0		0
12-14	239,234		0		0		0
13-15	235,700		0		0		0
FIVE-YEAR AVERAGE							
11-15	143,540		0		0		0

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 392 TRANSPORTATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
1996	3,663,578		0		0		0
1997	1,147,124		0		0		0
1998	643,102		0	194,772	30	194,772	30
1999	1,082,085		0	254,777	24	254,777	24
2000	785,471		0	152,200	19	152,200	19
2001	755,493		0	272,108	36	272,108	36
2002	1,093,048		0	277,660	25	277,660	25
2003	1,374,444		0	282,314	21	282,314	21
2004	1,197,018		0	346,555	29	346,555	29
2005	2,326,071		0	242,308	10	242,308	10
2006	1,212,955		0	218,615	18	218,615	18
2007	1,390,528		0	198,400	14	198,400	14
2008	1,213,420		0	132,689	11	132,689	11
2009	1,806,465		0	116,482	6	116,482	6
2010	2,718,582		0	206,572	8	206,572	8
2011	2,232,500		0	154,173	7	154,173	7
2012	1,908,460		0	240,524	13	240,524	13
2013	1,815,857		0	150,375	8	150,375	8
2014	943,871		0	83,811	9	83,811	9
2015	1,390,921		0	234,987	17	234,987	17
TOTAL	30,700,994		0	3,759,322	12	3,759,322	12

THREE-YEAR MOVING AVERAGES

96-98	1,817,935		0	64,924	4	64,924	4
97-99	957,437		0	149,850	16	149,850	16
98-00	836,886		0	200,583	24	200,583	24
99-01	874,350		0	226,362	26	226,362	26
00-02	878,004		0	233,989	27	233,989	27
01-03	1,074,329		0	277,361	26	277,361	26
02-04	1,221,503		0	302,176	25	302,176	25
03-05	1,632,511		0	290,392	18	290,392	18
04-06	1,578,681		0	269,159	17	269,159	17
05-07	1,643,185		0	219,775	13	219,775	13
06-08	1,272,301		0	183,235	14	183,235	14
07-09	1,470,138		0	149,190	10	149,190	10
08-10	1,912,822		0	151,914	8	151,914	8
09-11	2,252,516		0	159,076	7	159,076	7
10-12	2,286,514		0	200,423	9	200,423	9
11-13	1,985,606		0	181,691	9	181,691	9

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 392 TRANSPORTATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YEAR MOVING AVERAGES							
12-14	1,556,063		0	158,237	10	158,237	10
13-15	1,383,550		0	156,391	11	156,391	11
FIVE-YEAR AVERAGE							
11-15	1,658,322		0	172,774	10	172,774	10

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 396 POWER OPERATED EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
		AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
1995	520,485		0		0		0
1996	75,190		0		0		0
1997	30,348		0		0		0
1998	63,975		0	19,797	31	19,797	31
1999	10,223		0	10,646	104	10,646	104
2000	104,702		0	26,730	26	26,730	26
2001	189,458		0	14,283	8	14,283	8
2002	190,349		0	29,311	15	29,311	15
2003	102,476		0	16,777	16	16,777	16
2004	302,574		0	14,825	5	14,825	5
2005	872,364		0	186,761	21	186,761	21
2006	504,138		0	20,352	4	20,352	4
2007	251,001		0	59,528	24	59,528	24
2008	114,341		0	15,286	13	15,286	13
2009	139,361		0	4,647	3	4,647	3
2010	240,789		0	46,089	19	46,089	19
2011	498,971		0	119,294	24	119,294	24
2012	365,158		0	92,512	25	92,512	25
2013	502,213		0	214,520	43	214,520	43
2014	255,426		0	38,520	15	38,520	15
2015	581,404		0	150,376	26	150,376	26
TOTAL	5,914,947		0	1,080,254	18	1,080,254	18

THREE-YEAR MOVING AVERAGES

95-97	208,674		0		0		0
96-98	56,504		0	6,599	12	6,599	12
97-99	34,849		0	10,148	29	10,148	29
98-00	59,633		0	19,058	32	19,058	32
99-01	101,461		0	17,220	17	17,220	17
00-02	161,503		0	23,441	15	23,441	15
01-03	160,761		0	20,124	13	20,124	13
02-04	198,466		0	20,304	10	20,304	10
03-05	425,805		0	72,788	17	72,788	17
04-06	559,692		0	73,979	13	73,979	13
05-07	542,501		0	88,880	16	88,880	16
06-08	289,827		0	31,722	11	31,722	11
07-09	168,235		0	26,487	16	26,487	16
08-10	164,830		0	22,007	13	22,007	13
09-11	293,040		0	56,677	19	56,677	19
10-12	368,306		0	85,965	23	85,965	23
11-13	455,447		0	142,109	31	142,109	31

NORTHWEST NATURAL GAS COMPANY
 ACCOUNT 396 POWER OPERATED EQUIPMENT

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YEAR MOVING AVERAGES							
12-14	374,266		0	115,184	31	115,184	31
13-15	446,348		0	134,472	30	134,472	30
FIVE-YEAR AVERAGE							
11-15	440,634		0	123,044	28	123,044	28

**PART IX. DETAILED DEPRECIATION
CALCULATIONS**

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 303.1 MISCELLANEOUS INTANGIBLE PLANT - SOFTWARE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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	502,539.37	502,539	502,539			
2001	558,085.41	539,484	523,679	34,406	0.50	34,406
2002	531,359.77	478,224	464,213	67,147	1.50	44,765
2003	2,405,496.78	2,004,573	1,945,845	459,652	2.50	183,861
2004	289,099.82	221,644	215,150	73,950	3.50	21,129
2005	2,771,779.73	1,940,246	1,883,403	888,377	4.50	197,417
2006	714,428.00	452,469	439,213	275,215	5.50	50,039
2007	1,771,996.48	1,004,137	974,719	797,277	6.50	122,658
2008	6,261,749.49	3,130,875	3,039,150	3,222,599	7.50	429,680
2009	13,177,131.70	5,710,046	5,542,758	7,634,374	8.50	898,162
2010	2,523,983.52	925,469	898,356	1,625,628	9.50	171,119
2011	6,304,477.25	1,891,343	1,835,932	4,468,545	10.50	425,576
2012	4,178,632.41	975,000	946,435	3,232,197	11.50	281,061
2013	6,073,771.62	1,012,316	982,658	5,091,114	12.50	407,289
2014	4,399,398.47	439,940	427,051	3,972,347	13.50	294,248
2015	4,646,886.70	154,881	150,344	4,496,543	14.50	310,106
	57,110,816.52	21,383,186	20,771,445	36,339,372		3,871,516
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						9.4 6.78

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 303.2 MISCELLANEOUS INTANGIBLE PLANT - CUSTOMER INFORMATION SYSTEM

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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						
1995	639,469.00	639,469	639,469			
1996	369,842.00	369,842	369,842			
1997	27,346,787.00	27,346,787	27,346,787			
1998	450,570.00	450,570	450,570			
1999	150,721.00	150,721	150,721			
2004	415,255.38	318,364	415,255			
2005	468,752.58	328,127	468,753			
2006	448,313.73	283,931	448,314			
2007	472,095.25	267,522	472,095			
2008	190,259.31	95,130	190,259			
2009	252,423.58	109,383	252,424			
2010	56,921.16	20,871	56,921			
2011	287,298.57	86,190	287,299			
2012	614,886.18	143,471	614,886			
2013	246,002.37	41,001	222,525	23,477	12.50	1,878
	32,409,597.11	30,651,379	32,386,120	23,477		1,878
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.5 0.01

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 303.3 MISCELLANEOUS INTANGIBLE PLANT - INDUSTRIAL AND COMMERCIAL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
1998	1,427,352.00	1,427,352	1,427,352			
1999	2,707,150.00	2,707,150	2,707,150			
2000	12,449.00	12,449	12,449			
	4,146,951.00	4,146,951	4,146,951			
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 303.4 MISCELLANEOUS INTANGIBLE PLANT - CRMS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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						
2004	35,175.43	35,175	35,175			
2012	374,610.19	262,227	324,781	49,829	1.50	33,219
2013	273,106.93	136,553	169,127	103,980	2.50	41,592
	682,892.55	433,955	529,083	153,810		74,811
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 2.1						10.96

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 305.11 STRUCTURES AND IMPROVEMENTS - GAS PRODUCTION

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S1.5						
NET SALVAGE PERCENT.. -5						
1963	8,320.00	7,157	8,736			
	8,320.00	7,157	8,736			
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 305.17 STRUCTURES AND IMPROVEMENTS - MIXING STATION

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S1.5						
NET SALVAGE PERCENT.. -10						
1956	44,564.00	42,562	49,020			
1958	2,023.00	1,902	2,226			
	46,587.00	44,464	51,246			
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 305.5 STRUCTURES AND IMPROVEMENTS - OTHER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S1.5						
NET SALVAGE PERCENT.. -5						
1984	13,156.00	8,527	13,814			
	13,156.00	8,527	13,814			
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 311.7 LIQUEFIED PETROLEUM GAS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 20-S1						
NET SALVAGE PERCENT.. 0						
1963	403.00	403	403			
1964	224.00	224	224			
1973	3,406.00	3,406	7,439	4,033-		
	4,033.00	4,033	8,066	4,033-		

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 311.8 LIQUEFIED PETROLEUM GAS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 20-S1						
NET SALVAGE PERCENT.. 0						
1975	4,209.00	4,209	6,585	2,376-		
	4,209.00	4,209	6,585	2,376-		
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 318.3 LIGHT OIL REFINING

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S2.5						
NET SALVAGE PERCENT.. -5						
1926	6,740.00	7,077	7,077			
1941	65,282.00	66,832	68,546			
1943	3,000.00	3,042	3,150			
1947	11,000.00	10,938	11,550			
1950	14,536.00	14,240	15,263			
1951	28,111.00	27,399	29,517			
1952	15,110.00	14,652	15,866			
1953	1.00	1	1			
1956	163.00	155	171			
1957	953.00	900	1,000			
	144,896.00	145,236	152,141			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 318.5 TAR PROCESSING

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S2.5						
NET SALVAGE PERCENT.. -5						
1913	4,028.00	4,229	4,229			
1923	8,294.00	8,709	8,709			
1940	23,539.00	24,215	24,716			
1943	48,609.00	49,291	51,039			
1944	8,137.00	8,211	8,544			
1947	46,907.00	46,642	49,252			
1948	6,861.00	6,788	7,204			
1949	591.00	582	621			
1952	264.00	256	277			
1953	89,945.00	86,769	94,442			
1954	4,566.00	4,382	4,794			
1955	1,810.00	1,728	1,902			
	243,551.00	241,802	255,729			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 319 GAS MIXING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R0.5						
NET SALVAGE PERCENT.. -5						
1956	145,043.00	151,027	152,295			
1957	15,520.00	15,894	16,296			
1958	5,736.00	5,778	6,023			
1959	217.00	215	228			
1960	277.00	270	291			
1962	1,667.00	1,573	1,750			
1964	921.00	842	967			
1967	89.00	78	93			
1980	12,421.00	8,508	13,042			
1981	3,557.00	2,382	3,735			
	185,448.00	186,567	194,720			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 350.2 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 70-R4						
NET SALVAGE PERCENT.. 0						
1989	40,841.00	15,280	15,271	25,570	43.81	584
1993	5,264.00	1,678	1,677	3,587	47.68	75
1994	400.00	122	122	278	48.66	6
1997	185.00	49	49	136	51.60	3
1998	628.00	156	156	472	52.59	9
2001	3,804.00	785	785	3,019	55.55	54
2007	58,502.94	7,087	7,083	51,420	61.52	836
	109,624.94	25,157	25,143	84,482		1,567
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						53.9 1.43

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 351 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 60-R3						
NET SALVAGE PERCENT.. 0						
1989	2,101,010.00	867,360	1,071,470	1,029,540	35.23	29,223
1990	45,791.00	18,248	22,542	23,249	36.09	644
1991	275,498.00	105,791	130,686	144,812	36.96	3,918
1992	41,905.00	15,477	19,119	22,786	37.84	602
1993	3,226.00	1,144	1,413	1,813	38.72	47
1994	13,262.00	4,507	5,568	7,694	39.61	194
1995	35,648.00	11,580	14,305	21,343	40.51	527
1998	2,475,159.00	691,386	854,086	1,621,073	43.24	37,490
1999	4,963.00	1,310	1,618	3,345	44.16	76
2000	32,811.00	8,159	10,079	22,732	45.08	504
2001	884,241.00	206,028	254,511	629,730	46.02	13,684
2002	242,899.00	52,789	65,212	177,687	46.96	3,784
2003	16,898.54	3,408	4,210	12,689	47.90	265
2004	74,234.66	13,795	17,041	57,194	48.85	1,171
2005	123.98	21	26	98	49.80	2
2008	290,921.56	35,492	43,844	247,078	52.68	4,690
2009	3,834.31	406	502	3,332	53.64	62
2010	12,998.94	1,166	1,440	11,559	54.62	212
2012	159,638.62	9,152	11,306	148,333	56.56	2,623
2014	426,776.29	10,529	13,006	413,770	58.52	7,071
2015	66,404.73	543	671	65,734	59.51	1,105
	7,208,244.63	2,058,291	2,542,655	4,665,590		107,894
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						43.2 1.50

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 352 WELLS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S3						
NET SALVAGE PERCENT.. 0						
1989	8,933,762.00	4,608,034	5,528,063	3,405,699	24.21	140,673
1990	536,082.00	267,183	320,528	215,554	25.08	8,595
1991	2,005,008.00	964,008	1,156,480	848,528	25.96	32,686
1992	150,577.00	69,657	83,565	67,012	26.87	2,494
1993	182,892.00	81,241	97,461	85,431	27.79	3,074
1994	2,358.00	1,004	1,204	1,154	28.72	40
1998	6,327,524.00	2,207,040	2,647,693	3,679,831	32.56	113,017
2001	200,085.00	57,945	69,514	130,571	35.52	3,676
2003	44,802.88	11,192	13,427	31,376	37.51	836
2004	5,127,030.63	1,179,217	1,414,657	3,712,374	38.50	96,425
2005	3,853,067.17	809,144	970,696	2,882,371	39.50	72,971
2007	8,775,470.65	1,491,830	1,789,685	6,985,786	41.50	168,332
2009	831,368.14	108,078	129,656	701,712	43.50	16,131
2012	17,500.00	1,225	1,470	16,030	46.50	345
	36,987,527.47	11,856,798	14,224,099	22,763,428		659,295
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						34.5 1.78

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 352.1 STORAGE LEASEHOLDS AND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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						
1989	1,210,800.00	546,398	629,703	581,097	30.18	19,254
1993	1.00			1	33.45	
1996	237,300.00	81,717	94,176	143,124	36.06	3,969
1997	1,589,979.00	521,513	601,023	988,956	36.96	26,757
1998	492,327.00	153,335	176,713	315,614	37.87	8,334
1999	5,093.00	1,500	1,729	3,364	38.80	87
2002	2,991.00	727	838	2,153	41.63	52
2004	1,020.52	212	244	777	43.57	18
2014	400,000.00	10,908	12,571	387,429	53.50	7,242
	3,939,511.52	1,316,310	1,516,997	2,422,515		65,713
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						36.9 1.67

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 352.2 RESERVOIRS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S2.5						
NET SALVAGE PERCENT.. 0						
1996	1,679,184.00	640,777	620,634	1,058,550	30.92	34,235
1998	1,999,907.00	689,168	667,503	1,332,404	32.77	40,659
1999	6,003.00	1,955	1,894	4,109	33.72	122
2000	476,341.00	146,046	141,455	334,886	34.67	9,659
2002	2,997,731.00	803,991	778,717	2,219,014	36.59	60,645
2004	1,212,371.25	277,633	268,905	943,466	38.55	24,474
2005	2,445,017.29	511,987	495,893	1,949,124	39.53	49,307
2012	17,500.00	1,225	1,186	16,314	46.50	351
	10,834,054.54	3,072,782	2,976,187	7,857,868		219,452
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						35.8 2.03

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 352.3 NONRECOVERABLE GAS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S2.5						
NET SALVAGE PERCENT.. 0						
1989	4,057,952.00	1,877,006	2,226,448	1,831,504	29.56	61,959
1993	1.00			1	33.06	
1996	2,255,000.00	786,386	932,788	1,322,212	35.82	36,913
1998	62,449.00	19,631	23,286	39,163	37.71	1,039
2004	65,487.82	13,645	16,185	49,303	43.54	1,132
	6,440,889.82	2,696,668	3,198,707	3,242,183		101,043
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						32.1 1.57

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 353 LINES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S2.5						
NET SALVAGE PERCENT.. -15						
1989	2,521,353.00	1,341,190	1,379,434	1,520,122	29.56	51,425
1991	17,489.00	8,670	8,917	11,195	31.29	358
1993	1.00			1	33.06	
1998	3,853,629.00	1,393,141	1,432,867	2,998,806	37.71	79,523
1999	52,862.00	18,060	18,575	42,216	38.66	1,092
2003	7,841.06	2,041	2,099	6,918	42.55	163
2004	684,275.05	163,962	168,638	618,278	43.54	14,200
2005	504,360.29	110,522	113,674	466,340	44.52	10,475
2007	560,153.49	99,435	102,270	541,907	46.51	11,651
	8,201,963.89	3,137,021	3,226,474	6,205,784		168,887
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						36.7 2.06

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 354.1 COMPRESSOR STATION EQUIPMENT - TURBINE 1

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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.. -10						
1989	3,547,382.00	1,899,552	2,555,361	1,346,759	25.66	52,485
1990	110,946.00	57,408	77,228	44,813	26.48	1,692
1991	139,186.00	69,479	93,466	59,639	27.31	2,184
1992	41,746.00	20,067	26,995	18,926	28.15	672
1993	3,141.00	1,451	1,952	1,503	29.00	52
1994	7,648.00	3,389	4,559	3,854	29.86	129
1995	116,370.00	49,334	66,366	61,641	30.73	2,006
1996	3,136.00	1,269	1,707	1,743	31.60	55
1997	19,089.09	7,353	9,892	11,106	32.49	342
1998	166,055.57	60,717	81,679	100,982	33.38	3,025
	4,154,699.66	2,170,019	2,919,205	1,650,965		62,642
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						26.4 1.51

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 354.2 COMPRESSOR STATION EQUIPMENT - TURBINE 2

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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.. -10						
1989	4,154,699.00	2,224,758	2,992,842	1,577,327	25.66	61,470
	4,154,699.00	2,224,758	2,992,842	1,577,327		61,470
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						25.7 1.48

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 354.3 COMPRESSOR STATION EQUIPMENT - TURBINE 3

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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.. -10						
1998	13,502,780.91	4,937,157	6,641,681	8,211,378	33.38	245,997
1999	94,722.00	32,759	44,069	60,125	34.28	1,754
2000	3,218,557.00	1,048,670	1,410,717	2,129,696	35.19	60,520
2001	1,699,551.00	519,349	698,651	1,170,855	36.11	32,425
2002	122,405.06	34,927	46,985	87,661	37.03	2,367
2008	131,264.60	21,110	28,398	115,993	42.69	2,717
2009	69,541.41	9,700	13,049	63,447	43.66	1,453
2010	20,130.52	2,383	3,206	18,938	44.62	424
2014	781,561.86	25,448	34,234	825,484	48.52	17,013
	19,640,514.36	6,631,503	8,920,990	12,683,576		364,670
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						34.8 1.86

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 354.4 COMPRESSOR STATION EQUIPMENT - TURBINE 4

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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.. -10						
2000	3,316,171.17	1,080,475	1,453,502	2,194,286	35.19	62,355
2001	6,176,092.83	1,887,290	2,538,866	4,254,836	36.11	117,830
2004	3,387,547.01	827,984	1,113,840	2,612,462	38.89	67,176
2012	17,500.00	1,321	1,777	17,473	46.57	375
2013	770,394.74	41,694	56,089	791,345	47.54	16,646
	13,667,705.75	3,838,764	5,164,074	9,870,402		264,382
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 37.3						1.93

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 354.5 COMPRESSOR STATION EQUIPMENT - TURBINE 5

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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.. -10						
2001	1,386,150.00	423,580	569,818	954,947	36.11	26,445
2003	3,978.82	1,054	1,418	2,959	37.96	78
2004	29,546.20	7,222	9,715	22,786	38.89	586
2011	1,167,361.91	113,257	152,359	1,131,739	45.59	24,824
	2,587,036.93	545,113	733,310	2,112,431		51,933
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						40.7 2.01

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 354.6 COMPRESSOR STATION EQUIPMENT - TURBINE 6

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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.. -10						
2015	257,302.38	2,774	3,732	279,301	49.51	5,641
	257,302.38	2,774	3,732	279,301		5,641
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						49.5 2.19

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 355 MEASURING AND REGULATING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S2						
NET SALVAGE PERCENT.. -10						
1989	3,473,015.20	2,024,768	2,318,142	1,502,175	21.15	71,025
1990	66,949.00	37,885	43,374	30,270	21.85	1,385
1991	21,410.00	11,739	13,440	10,111	22.57	448
1992	17,819.00	9,452	10,822	8,779	23.30	377
1993	1,785.00	914	1,046	918	24.06	38
1994	35.00	17	19	20	24.84	1
1995	9,858.00	4,665	5,341	5,503	25.64	215
1996	15,372.00	6,970	7,980	8,929	26.45	338
1998	1,090,120.00	449,003	514,060	685,072	28.15	24,336
1999	238,641.00	93,218	106,725	155,780	29.02	5,368
2000	1,704,161.55	628,602	719,682	1,154,896	29.91	38,612
2001	48,850.00	16,932	19,385	34,350	30.82	1,115
2002	230,507.45	74,716	85,542	168,016	31.74	5,294
2003	0.07					
2004	830,627.56	230,862	264,312	649,378	33.63	19,309
2005	1,791,619.55	455,901	521,958	1,448,824	34.59	41,886
2006	143,130.10	33,028	37,813	119,630	35.56	3,364
2007	5,084,801.19	1,051,537	1,203,897	4,389,384	36.54	120,125
2008	207,002.45	37,849	43,333	184,370	37.52	4,914
2011	435,517.72	47,907	54,848	424,221	40.50	10,475
2012	17,500.00	1,497	1,714	17,536	41.50	423
2014	539,149.79	19,767	22,631	570,434	43.50	13,113
	15,967,871.63	5,237,229	5,996,064	11,568,595		362,161

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 31.9 2.27

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 356 PURIFICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S2.5						
NET SALVAGE PERCENT.. -5						
1989	139,942.00	80,523	113,582	33,357	20.34	1,640
1990	12,815.00	7,146	10,080	3,376	21.10	160
1992	15,940.00	8,302	11,710	5,027	22.68	222
1993	2,878.00	1,444	2,037	985	23.50	42
1995	73,881.00	34,133	48,146	29,429	25.20	1,168
1996	48,826.00	21,555	30,405	20,862	26.08	800
1998	3,081.00	1,231	1,736	1,499	27.88	54
	297,363.00	154,334	217,696	94,535		4,086
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						23.1 1.37

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 357 OTHER EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R4						
NET SALVAGE PERCENT.. 0						
1989	76,057.00	59,984	76,057			
1992	5,980.00	4,308	5,980			
1998	564,221.00	317,092	443,622	120,599	13.14	9,178
1999	56,329.00	30,023	42,003	14,326	14.01	1,023
2008	629,441.85	156,523	218,980	410,462	22.54	18,210
2009	63,256.08	13,642	19,086	44,170	23.53	1,877
	1,395,284.93	581,572	805,728	589,557		30,288
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						19.5 2.17

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 361 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
LINNNTON						
INTERIM SURVIVOR CURVE.. IOWA 60-R3						
PROBABLE RETIREMENT YEAR.. 6-2031						
NET SALVAGE PERCENT.. -5						
1969	84,432.00	67,688	75,153	13,501	12.87	1,049
1970	26,089.00	20,772	23,063	4,331	13.03	332
1974	183.00	142	158	34	13.58	3
1975	8,525.00	6,547	7,269	1,682	13.70	123
1976	14,557.00	11,093	12,316	2,968	13.81	215
1978	9,671.00	7,249	8,048	2,106	14.02	150
1981	1,017.00	742	824	244	14.28	17
1982	46,738.00	33,775	37,500	11,575	14.36	806
1985	20,155.00	14,112	15,668	5,494	14.56	377
1986	6,343.00	4,390	4,874	1,786	14.62	122
1987	6,731.00	4,601	5,108	1,959	14.68	133
1988	30,340.00	20,465	22,722	9,135	14.74	620
1991	27,819.00	17,961	19,942	9,268	14.88	623
1992	4,998.00	3,174	3,524	1,724	14.92	116
1993	42,483.00	26,501	29,424	15,183	14.97	1,014
1994	37,310.00	22,843	25,362	13,813	15.00	921
1995	45,530.00	27,310	30,322	17,485	15.04	1,163
1996	20,875.00	12,249	13,600	8,319	15.07	552
1997	22,876.00	13,104	14,549	9,471	15.11	627
2000	10,951.00	5,762	6,397	5,101	15.19	336
2001	30,731.00	15,625	17,348	14,919	15.22	980
2002	60,440.00	29,598	32,862	30,600	15.24	2,008
2004	6,103.00	2,735	3,037	3,372	15.28	221
2005	185,610.40	78,867	87,565	107,326	15.30	7,015
2006	961,819.17	384,281	426,662	583,248	15.32	38,071
2007	432,192.31	160,818	178,554	275,248	15.34	17,943
2008	892,383.17	305,894	339,630	597,373	15.35	38,917
2009	1,097,712.30	340,708	378,283	774,315	15.37	50,378
2010	113,303.89	31,170	34,608	84,361	15.38	5,485
2011	221,064.76	52,336	58,108	174,010	15.39	11,307
2012	71,983.47	13,931	15,467	60,115	15.40	3,904
2015	53,824.55	1,774	1,970	54,546	15.43	3,535
	4,594,791.02	1,738,217	1,929,918	2,894,613		189,063

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 361 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
NEWPORT						
INTERIM SURVIVOR CURVE.. IOWA 60-R3						
PROBABLE RETIREMENT YEAR.. 6-2027						
NET SALVAGE PERCENT.. -5						
1965	1,500.00	1,293	1,094	481	9.74	49
1974	605,426.00	499,188	422,214	213,483	10.52	20,293
1977	711,173.00	576,081	487,251	259,481	10.70	24,251
1978	98,833.00	79,555	67,288	36,487	10.75	3,394.
1979	16,085.00	12,862	10,879	6,011	10.80	557
1982	13,954.00	10,921	9,237	5,415	10.92	496
1984	270.00	208	176	108	11.00	10
1985	568.00	433	366	230	11.03	21
1986	5,130.00	3,879	3,281	2,106	11.06	190
1987	2,143.00	1,604	1,357	893	11.09	81
1988	17,175.00	12,723	10,761	7,273	11.12	654
1989	89,056.00	65,264	55,200	38,308	11.14	3,439
1990	24,328.00	17,614	14,898	10,646	11.17	953
1991	59,235.00	42,357	35,826	26,371	11.19	2,357
1992	141,822.00	100,046	84,619	64,294	11.21	5,735
1993	280,088.00	194,674	164,656	129,437	11.24	11,516
1994	214,182.00	146,541	123,945	100,946	11.26	8,965
1995	37,880.00	25,494	21,563	18,211	11.27	1,616
1996	89,930.00	59,416	50,254	44,172	11.29	3,912
1997	169,271.00	109,616	92,713	85,021	11.31	7,517
1998	166,176.00	105,326	89,085	85,400	11.32	7,544
1999	164,083.00	101,525	85,870	86,417	11.34	7,621
2000	31,277.00	18,860	15,952	16,889	11.35	1,488
2001	48,710.00	28,538	24,138	27,008	11.36	2,377
2002	73,583.00	41,708	35,277	41,985	11.38	3,689
2004	12,320.82	6,466	5,469	7,468	11.40	655
2005	10,028.06	5,024	4,249	6,280	11.41	550
2006	47,617.22	22,600	19,115	30,883	11.42	2,704
2008	366,599.53	151,893	128,471	256,458	11.43	22,437
2009	310,099.68	117,507	99,388	226,217	11.44	19,774
2010	702,655.75	238,955	202,109	535,680	11.44	46,825
2011	60,719.61	17,930	15,165	48,590	11.45	4,244
2012	31,512.46	7,707	6,519	26,569	11.46	2,318
2014	53,308.25	6,435	5,443	50,531	11.47	4,405
	4,656,739.38	2,830,243	2,393,826	2,495,750		222,637

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 361 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
OTHER						
SURVIVOR CURVE.. IOWA 55-S2						
NET SALVAGE PERCENT.. -5						
1963	4,009.00	3,064	3,005	1,205	14.96	81
1968	527.00	380	373	181	17.19	11
1975	1,118.00	730	716	458	20.80	22
1999	21,103.00	6,527	6,401	15,757	38.80	406
	26,757.00	10,701	10,494	17,601		520
	9,278,287.40	4,579,161	4,334,238	5,407,964		412,220
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						13.1 4.44

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 362 GAS HOLDERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
LINNTON						
INTERIM SURVIVOR CURVE.. IOWA 60-R3						
PROBABLE RETIREMENT YEAR.. 6-2031						
NET SALVAGE PERCENT.. -20						
1969	1,720,509.00	1,576,351	1,781,227	283,384	12.87	22,019
1974	815.00	721	815	163	13.58	12
1983	969.00	792	895	268	14.43	19
1991	1,017.00	750	847	373	14.88	25
1993	115,750.00	82,519	93,244	45,656	14.97	3,050
2006	362,872.63	165,692	187,227	248,220	15.32	16,202
2009	488,646.40	173,333	195,861	390,515	15.37	25,408
2015	53,824.55	2,027	2,290	62,299	15.43	4,038
	2,744,403.58	2,002,185	2,262,406	1,030,878		70,773

NEWPORT
INTERIM SURVIVOR CURVE.. IOWA 60-R3
PROBABLE RETIREMENT YEAR.. 6-2027
NET SALVAGE PERCENT.. -20

1977	5,569,347.00	5,155,901	5,263,445	1,419,772	10.70	132,689
1978	10,302.00	9,477	9,675	2,688	10.75	250
1994	72,915.00	57,015	58,204	29,294	11.26	2,602
1996	138,492.00	104,572	106,753	59,437	11.29	5,265
2006	900.36	488	498	582	11.42	51
	5,791,956.36	5,327,453	5,438,575	1,511,773		140,857

OTHER
SURVIVOR CURVE.. IOWA 60-R3
NET SALVAGE PERCENT.. -20

2003	1,600.14	387	1,172	748	47.90	16
	1,600.14	387	1,172	748		16
	8,537,960.08	7,330,025	7,702,153	2,543,399		211,646

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.0 2.48

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.1 LIQUEFACTION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
LINNTON						
INTERIM SURVIVOR CURVE.. IOWA 50-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2031						
NET SALVAGE PERCENT.. -5						
1969	828,857.00	647,581	870,300			
1970	15,188.00	11,790	15,947			
1971	28,931.00	22,313	30,378			
1972	4,261.00	3,263	4,474			
1974	1,957.00	1,477	2,055			
1975	268.00	201	281			
1976	25,955.00	19,298	27,253			
1980	100,679.00	72,357	105,713			
1986	715.00	483	751			
1987	103,906.00	69,250	109,101			
1990	86,886.00	55,546	89,767	1,463	14.05	104
1991	51,422.00	32,374	52,319	1,674	14.11	119
1992	77,450.00	47,960	77,507	3,815	14.17	269
1994	15,589.00	9,305	15,038	1,331	14.28	93
1995	2,211.00	1,293	2,090	232	14.33	16
1997	132,937.00	74,273	120,031	19,553	14.43	1,355
1998	157,516.00	85,777	138,623	26,769	14.47	1,850
1999	78,997.00	41,842	67,620	15,327	14.51	1,056
2000	88,122.00	45,257	73,139	19,389	14.55	1,333
2001	284,485.00	141,203	228,196	70,514	14.59	4,833
2002	44,801.00	21,409	34,599	12,442	14.63	850
2003	131,666.14	60,387	97,590	40,659	14.66	2,773
2004	219,028.75	95,863	154,922	75,058	14.69	5,109
2005	46,627.74	19,350	31,271	17,688	14.72	1,202
2006	127,298.03	49,732	80,371	53,292	14.75	3,613
2007	8,445.29	3,073	4,966	3,901	14.78	264
2009	184,503.31	55,974	90,459	103,270	14.84	6,959
2012	72,983.52	13,818	22,331	54,302	14.91	3,642
2015	53,824.55	1,719	2,778	53,738	14.98	3,587
	2,975,510.33	1,704,168	2,549,869	574,417		39,027

NEWPORT

INTERIM SURVIVOR CURVE.. IOWA 50-R1.5
PROBABLE RETIREMENT YEAR.. 6-2027
NET SALVAGE PERCENT.. -5

1977	5,236,797.00	4,154,825	5,498,637
1978	16,348.00	12,889	17,165
1979	5,538.00	4,337	5,815

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.1 LIQUEFACTION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
NEWPORT						
INTERIM SURVIVOR CURVE.. IOWA 50-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2027						
NET SALVAGE PERCENT.. -5						
1984	21,919.00	16,527	23,015			
1985	11,525.00	8,615	12,101			
1986	14,148.00	10,476	14,855			
1987	8,543.00	6,264	8,970			
1989	21,759.00	15,619	22,847			
1990	3,285.00	2,330	3,449			
1991	51,784.00	36,271	54,373			
1992	4,079.00	2,819	4,247	36	10.80	3
1993	16,196.00	11,034	16,623	383	10.83	35
1994	1,119.00	750	1,130	45	10.86	4
1996	186,692.00	120,933	182,190	13,837	10.91	1,268
1997	234,720.00	149,015	224,496	21,960	10.94	2,007
1998	417,026.00	259,140	390,403	47,474	10.96	4,332
1999	270,774.00	164,384	247,650	36,663	10.98	3,339
2001	180,788.00	103,883	156,503	33,324	11.02	3,024
2002	43,771.00	24,359	36,698	9,262	11.04	839
2004	76,452.73	39,381	59,329	20,947	11.08	1,891
2005	1,705.00	839	1,264	526	11.09	47
2006	28,555.27	13,319	20,066	9,917	11.11	893
2007	35,357.72	15,500	23,351	13,774	11.12	1,239
2008	62,378.35	25,385	38,243	27,254	11.14	2,446
2014	356,850.62	42,651	64,255	310,438	11.21	27,693
	7,308,110.69	5,241,545	7,127,677	545,839		49,060
	10,283,621.02	6,945,713	9,677,546	1,120,256		88,087
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.7 0.86

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.2 VAPORIZING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
LINNTON						
INTERIM SURVIVOR CURVE.. IOWA 50-S2.5						
PROBABLE RETIREMENT YEAR.. 6-2031						
NET SALVAGE PERCENT.. -5						
1969	322,219.00	267,565	338,330			
1970	9,122.00	7,526	9,578			
1971	17,316.00	14,188	18,182			
1972	2,368.00	1,927	2,486			
1973	13,251.00	10,706	13,914			
1974	2,259.00	1,811	2,372			
1975	269.00	214	282			
1976	386,664.00	305,107	405,997			
1986	12,078.00	8,586	12,682			
1987	177,462.00	124,466	186,335			
1990	1,140,108.00	764,321	1,197,113			
1991	181,570.00	119,662	188,600	2,048	14.16	145
1993	1.00	1	1			
1994	32,761.00	20,397	32,148	2,251	14.52	155
1995	11,181.00	6,812	10,736	1,004	14.63	69
2006	321,206.91	128,904	203,167	134,100	15.34	8,742
2015	53,824.46	1,768	2,787	53,729	15.48	3,471
	2,683,660.37	1,783,961	2,624,711	193,132		12,582

NEWPORT

INTERIM SURVIVOR CURVE.. IOWA 50-S2.5

PROBABLE RETIREMENT YEAR.. 6-2027

NET SALVAGE PERCENT.. -5

1977	2,330,339.00	1,922,837	2,137,156	309,700	9.50	32,600
1989	49,500.00	36,716	40,808	11,167	10.71	1,043
1990	16,202.00	11,866	13,189	3,824	10.79	354
1991	4,866.00	3,517	3,909	1,200	10.86	110
1992	2,662.00	1,897	2,108	687	10.92	63
1993	455.00	319	355	123	10.99	11
1995	8,350.00	5,665	6,296	2,471	11.10	223
2002	180.00	103	114	75	11.36	7

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.2 VAPORIZING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
NEWPORT						
INTERIM SURVIVOR CURVE.. IOWA 50-S2.5						
PROBABLE RETIREMENT YEAR.. 6-2027						
NET SALVAGE PERCENT.. -5						
2004	68,445.68	36,044	40,061	31,807	11.41	2,788
2011	1,113,015.02	328,372	364,972	803,693	11.49	69,947
2015	70,347.42	3,078	3,421	70,444	11.50	6,126
	3,664,362.12	2,350,414	2,612,391	1,235,189		113,272
	6,348,022.49	4,134,375	5,237,102	1,428,321		125,854
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					11.3	1.98

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.3 COMPRESSOR EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
LINNTON						
INTERIM SURVIVOR CURVE.. IOWA 30-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2031						
NET SALVAGE PERCENT.. -5						
1982	85,687.00	66,695	89,971			
1983	1,117.00	856	1,173			
1986	21,516.00	15,709	22,592			
1996	19,421.00	11,473	20,392			
2008	53,162.23	17,860	72,769	16,949-		
	180,903.23	112,593	206,897	16,949-		
NEWPORT						
INTERIM SURVIVOR CURVE.. IOWA 30-R1.5						
PROBABLE RETIREMENT YEAR.. 6-2027						
NET SALVAGE PERCENT.. -5						
1997	20,827.00	13,294	14,645	7,224	9.74	742
2003	178,502.00	95,575	105,286	82,142	10.36	7,929
2005	16,780.44	8,224	9,060	8,560	10.51	814
2007	84,841.39	36,975	40,732	48,352	10.64	4,544
2014	1,089,974.72	129,738	142,920	1,001,554	10.95	91,466
	1,390,925.55	283,806	312,641	1,147,831		105,495
	1,571,828.78	396,399	519,538	1,130,882		105,495
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						10.7 6.71

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.4 MEASURING AND REGULATING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
LINNNTON						
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5						
PROBABLE RETIREMENT YEAR.. 6-2031						
NET SALVAGE PERCENT.. -5						
1969	461,537.00	387,299	418,919	65,695	8.92	7,365
1970	2,640.00	2,196	2,375	397	9.20	43
1971	9,831.00	8,107	8,769	1,554	9.48	164
1972	6,325.00	5,168	5,590	1,051	9.76	108
1974	1,327.00	1,064	1,151	242	10.32	23
1975	374.00	297	321	71	10.59	7
1985	3,662.00	2,594	2,806	1,039	12.91	80
1988	3,818.00	2,596	2,808	1,201	13.40	90
1990	33,747.00	22,251	24,068	11,367	13.68	831
2002	17,323.00	8,476	9,168	9,021	14.75	612
2006	28,273.59	11,267	12,187	17,500	14.96	1,170
2009	168,291.28	52,128	56,384	120,322	15.08	7,979
2013	151,561.74	22,012	23,809	135,331	15.20	8,903
2014	358,954.10	33,198	35,908	340,993	15.22	22,404
	1,247,664.71	558,653	604,263	705,785		49,779

NEWPORT
INTERIM SURVIVOR CURVE.. IOWA 45-R2.5
PROBABLE RETIREMENT YEAR.. 6-2027
NET SALVAGE PERCENT.. -5

1977	55,203.00	45,161	57,963			
1978	4,721.00	3,832	4,957			
1988	5,884.00	4,358	6,164	14	10.44	1
1989	7,341.00	5,373	7,599	109	10.52	10
1990	13,736.00	9,932	14,047	375	10.59	35
1991	23,158.00	16,532	23,382	934	10.65	88
1992	3,371.00	2,373	3,356	183	10.71	17
	113,414.00	87,561	117,469	1,616		151
	1,361,078.71	646,214	721,732	707,401		49,930

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 14.2 3.67

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.5 CNG REFUELING FACILITIES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 28-R3						
NET SALVAGE PERCENT.. -5						
1981	19,620.00	18,210	20,601			
1982	9,560.00	8,765	10,038			
1983	1,563.00	1,415	1,641			
1984	40,443.00	36,080	42,465			
1985	1,466.00	1,288	1,539			
1986	7,018.00	6,058	7,369			
1990	63,479.00	50,156	66,653			
1991	52,207.00	40,134	54,537	280	7.50	37
1992	19,707.00	14,706	19,984	708	8.10	87
1993	61,210.00	44,232	60,106	4,164	8.73	477
1994	348,384.00	243,127	330,379	35,424	9.39	3,773
1995	293,359.00	197,137	267,885	40,142	10.08	3,982
1996	228,151.00	147,242	200,084	39,475	10.79	3,658
1997	47,984.57	29,654	40,296	10,088	11.52	876
1998	28,835.82	17,010	23,114	7,164	12.27	584
1999	4,283.40	2,403	3,265	1,233	13.04	95
2002	1,300.00	610	829	536	15.48	35
2004	49,674.00	20,137	27,364	24,794	17.19	1,442
2012	117,630.32	15,086	20,500	103,012	24.58	4,191
2013	123,013.59	11,302	15,358	113,806	25.55	4,454
2014	1,532,406.79	84,474	114,790	1,494,237	26.53	56,323
	3,051,295.49	989,226	1,328,797	1,875,063		80,014

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 23.4 2.62

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 363.6 LNG REFUELING FACILITIES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -5						
1982	349,437.00	247,755	366,909			
1983	61,620.00	42,719	64,701			
1984	42,767.00	28,953	44,905			
1985	5,173.00	3,415	5,432			
1986	108.00	69	113			
1991	935.00	515	941	41	19.00	2
1992	113,889.00	60,569	110,622	8,961	19.74	454
1993	54,468.00	27,895	50,947	6,244	20.49	305
1994	38,218.00	18,810	34,354	5,775	21.25	272
1995	45,678.00	21,547	39,354	8,608	22.03	391
1996	13,387.00	6,037	11,026	3,030	22.82	133
1997	5,310.00	2,283	4,170	1,406	23.62	60
1999	8,483.00	3,285	5,999	2,908	25.25	115
	739,473.00	463,852	739,473	36,974		1,732

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 21.3 0.23

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 365.2 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 70-R4						
NET SALVAGE PERCENT.. 0						
1964	94,094.00	64,482	57,737	36,357	22.03	1,650
1965	445,096.00	300,248	268,839	176,257	22.78	7,737
1966	469,977.00	311,863	279,239	190,738	23.55	8,099
1967	159,280.00	103,919	93,048	66,232	24.33	2,722
1968	20,603.00	13,209	11,827	8,776	25.12	349
1976	28,031.00	15,289	13,690	14,341	31.82	451
1977	12,082.00	6,438	5,765	6,317	32.70	193
1979	9,187.00	4,662	4,174	5,013	34.48	145
1981	5,959.00	2,869	2,569	3,390	36.30	93
1989	815,816.00	305,229	273,299	542,517	43.81	12,383
1990	401,012.00	144,481	129,367	271,645	44.78	6,066
1991	143,060.00	49,580	44,393	98,667	45.74	2,157
1992	13,749.00	4,574	4,096	9,653	46.71	207
2002	395,428.00	76,037	68,083	327,345	56.54	5,790
2003	1,181,773.75	210,356	188,350	993,424	57.54	17,265
2004	2,075,820.15	340,144	304,562	1,771,258	58.53	30,262
2009	184,208.96	17,078	15,291	168,918	63.51	2,660
	6,455,176.86	1,970,458	1,764,329	4,690,848		98,229

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 47.8 1.52

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 366.3 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R3						
NET SALVAGE PERCENT.. 0						
1966	85,985.00	64,192	69,271	16,714	13.94	1,199
2004	898,180.86	181,756	196,136	702,045	43.87	16,003
2005	57,818.26	10,712	11,560	46,258	44.81	1,032
	1,041,984.12	256,660	276,967	765,017		18,234
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						42.0 1.75

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 367 MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R3						
NET SALVAGE PERCENT.. -40						
1931	541.00	684	757			
1964	631,743.00	602,100	739,734	144,706	20.75	6,974
1965	4,159,205.00	3,904,944	4,797,574	1,025,313	21.41	47,889
1966	3,249,729.00	3,004,160	3,690,880	858,741	22.08	38,892
1967	98,086.00	89,238	109,637	27,683	22.76	1,216
1968	4,871.00	4,359	5,355	1,464	23.45	62
1969	17,024.00	14,975	18,398	5,436	24.16	225
1972	18,881.00	15,726	19,321	7,112	26.33	270
1976	1,227,425.00	942,471	1,157,910	560,485	29.35	19,097
1977	4,968.00	3,731	4,584	2,371	30.13	79
1978	12,612.00	9,260	11,377	6,280	30.91	203
1980	34,127.00	23,882	29,341	18,437	32.51	567
1981	510,647.00	348,431	428,079	286,827	33.32	8,608
1982	162,214.00	107,820	132,467	94,633	34.14	2,772
1985	29,321.00	17,910	22,004	19,045	36.64	520
1986	17,437.00	10,332	12,694	11,718	37.49	313
1989	522,156.00	280,258	344,322	386,696	40.08	9,648
1990	139,805.00	72,419	88,973	106,754	40.95	2,607
1991	940.00	469	576	740	41.83	18
1993	136,072.00	62,660	76,983	113,518	43.62	2,602
1994	132,571.00	58,479	71,847	113,752	44.52	2,555
1995	1,514.00	638	784	1,336	45.43	29
2001	536,035.70	161,752	198,727	551,723	50.99	10,820
2002	255,592.00	71,952	88,399	269,430	51.93	5,188
2003	145,757.63	38,049	46,747	157,314	52.88	2,975
2004	102,958.14	24,771	30,433	113,708	53.83	2,112
2007	65,936.81	11,773	14,464	77,848	56.71	1,373
2009	4,506,021.06	617,280	758,384	5,550,045	58.64	94,646
2010	19,347,382.59	2,245,999	2,759,411	24,326,925	59.61	408,101
2011	8,045,641.26	764,255	938,956	10,324,942	60.59	170,407
2012	31,403,683.70	2,326,636	2,858,481	41,106,676	61.56	667,750
2013	48,073,443.97	2,547,412	3,129,725	64,173,097	62.54	1,026,113
2014	17,929,378.17	571,553	702,204	24,398,925	63.52	384,114
2015	4,814,068.52	50,817	62,433	6,677,263	64.51	103,507
	146,337,788.55	19,007,195	23,351,961	181,520,943		3,022,252

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 60.1 2.07

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 367.21 MAINS - NORTH MIST

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R3						
NET SALVAGE PERCENT.. -40						
1989	1,430,448.00	767,767	918,493	1,084,134	40.08	27,049
1990	81,695.00	42,318	50,626	63,747	40.95	1,557
1991	2,019.00	1,008	1,206	1,621	41.83	39
2004	181.00	44	53	200	53.83	4
2007	48,813.71	8,716	10,427	57,912	56.71	1,021
2011	431,425.68	40,981	49,026	554,970	60.59	9,159
	1,994,582.39	860,834	1,029,831	1,762,584		38,829

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 45.4 1.95

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 367.22 MAINS - SOUTH MIST

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R3						
NET SALVAGE PERCENT.. -40						
1989	14,864,615.00	7,978,315	9,880,036	10,930,425	40.08	272,715
1990	75,414.00	39,064	48,375	57,205	40.95	1,397
1991	522.00	261	323	408	41.83	10
1993	8,713.00	4,012	4,969	7,229	43.62	166
	14,949,264.00	8,021,652	9,933,703	10,995,267		274,288
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 40.1						1.83

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 367.23 MAINS - SOUTH MIST

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R3						
NET SALVAGE PERCENT.. -40						
1999	33,516,134.00	11,470,696	11,627,622	35,294,966	49.11	718,692
2000	64,133.00	20,651	20,933	68,853	50.05	1,376
2001	603.00	182	184	660	50.99	13
2003	382,180.95	99,766	101,131	433,922	52.88	8,206
2004	44,023.42	10,592	10,737	50,896	53.83	945
2006	256.56	51	52	307	55.74	6
2012	874,010.43	64,754	65,640	1,157,975	61.56	18,811
	34,881,341.36	11,666,692	11,826,299	37,007,579		748,049
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						49.5 2.14

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 367.24 MAINS - 11.7M S MIST

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R3						
NET SALVAGE PERCENT.. -40						
2003	17,466,181.89	4,559,442	4,819,695	19,632,960	52.88	371,274
	17,466,181.89	4,559,442	4,819,695	19,632,960		371,274
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					52.9	2.13

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 367.25 MAINS - 12M NORTH S MIST

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R3						
NET SALVAGE PERCENT.. -40						
2003	10,767,917.66	2,810,900	2,893,341	12,181,744	52.88	230,366
2004	7,746,047.21	1,863,621	1,918,280	8,926,186	53.83	165,822
2005	16,294.30	3,587	3,692	19,120	54.78	349
2012	83,391.98	6,178	6,359	110,390	61.56	1,793
	18,613,651.15	4,684,286	4,821,672	21,237,440		398,330
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						53.3 2.14

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 367.26 MAINS - 38M NORTH S MIST

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R3						
NET SALVAGE PERCENT.. -40						
2003	38,081,707.37	9,941,001	10,333,503	42,980,887	52.88	812,800
2004	30,150,968.21	7,254,021	7,540,433	34,670,922	53.83	644,082
	68,232,675.58	17,195,022	17,873,936	77,651,810		1,456,882
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						53.3 2.14

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 368 COMPRESSOR STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCURED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. IOWA 45-R3						
NET SALVAGE PERCENT.. -5						
2008	7,723,454.21	1,313,760	1,848,512	6,261,115	37.71	166,033
	7,723,454.21	1,313,760	1,848,512	6,261,115		166,033
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						37.7 2.15

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 369 MEASURING AND REGULATING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -10						
1965	14,697.00	13,106	16,167			
1966	25,913.00	22,880	28,504			
1967	5,028.00	4,393	5,531			
1977	45,443.00	34,280	44,092	5,895	14.14	417
1987	26,938.00	16,008	20,590	9,042	20.69	437
1992	77,606.00	39,003	50,166	35,201	24.44	1,440
2002	11,991.00	3,608	4,641	8,549	32.69	262
2003	189,080.78	52,829	67,950	140,039	33.57	4,172
2004	3,131,157.55	807,475	1,038,591	2,405,682	34.45	69,831
2006	133,313.77	28,580	36,760	109,885	36.23	3,033
2012	202,014.56	16,246	20,896	201,320	41.71	4,827
2014	106,367.62	3,666	4,715	112,289	43.59	2,576
	3,969,550.28	1,042,074	1,338,603	3,027,902		86,995
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						34.8 2.19

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 374.2 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 70-R3						
NET SALVAGE PERCENT.. 0						
1900	208,257.00	206,085	208,257			
1952	1,813.00	1,361	1,813			
1956	11,140.00	7,991	11,140			
1960	200.00	136	200			
1962	100.00	66	100			
1963	3,425.00	2,235	3,425			
1964	750.00	482	750			
1968	9,669.00	5,819	9,669			
1971	2,507.00	1,429	2,507			
1974	3,304.00	1,774	3,304			
1975	3,640.00	1,914	3,640			
1976	804.00	414	804			
1977	10,277.00	5,169	10,277			
1978	6,845.00	3,364	6,845			
1979	1,589.00	762	1,589			
1980	1,565.00	732	1,565			
1981	8,720.00	3,978	8,720			
1982	1,039.00	461	1,039			
1983	252.00	109	252			
1984	764.00	321	764			
1985	4,779.00	1,948	4,779			
1986	3,752.00	1,484	3,752			
1987	9,733.00	3,728	9,733			
1988	3,902.00	1,445	3,902			
1989	74,994.00	26,837	74,994			
1990	10,006.00	3,453	9,726	280	45.84	6
1991	185,065.00	61,521	173,293	11,772	46.73	252
1992	64,966.00	20,761	58,480	6,486	47.63	136
1993	29,877.00	9,159	25,799	4,078	48.54	84
1994	43,236.00	12,693	35,754	7,482	49.45	151
1995	112,714.00	31,624	89,079	23,635	50.36	469
1996	18,109.00	4,840	13,633	4,476	51.29	87
1997	35,832.00	9,106	25,650	10,182	52.21	195
1998	15,125.00	3,643	10,262	4,863	53.14	92
1999	23,933.00	5,443	15,332	8,601	54.08	159
2000	14,758.00	3,158	8,895	5,863	55.02	107
2001	52,915.00	10,613	29,895	23,020	55.96	411
2002	123,008.00	23,002	64,792	58,216	56.91	1,023
2003	301,674.10	52,319	147,373	154,301	57.86	2,667

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 374.2 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 70-R3						
NET SALVAGE PERCENT.. 0						
2004	399,977.44	63,940	180,107	219,870	58.81	3,739
2009	2,201.96	200	563	1,639	63.64	26
2010	76,544.80	5,894	16,603	59,942	64.61	928
	1,883,762.30	601,413	1,279,056	604,706		10,532
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						57.4 0.56

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 375 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R0.5						
NET SALVAGE PERCENT.. 0						
1913	2,827.00	2,827	2,827			
1927	2,144.00	2,144	2,144			
1953	14.00	13	14			
1956	32,928.00	28,431	32,928			
1958	3,307.00	2,779	3,307			
1959	871.00	722	871			
1960	6,983.00	5,708	6,983			
1961	726.00	585	726			
1962	2,742.00	2,180	2,742			
1965	298.00	227	298			
1990	25,470.00	10,945	25,470			
1993	1,907.00	730	1,907			
	80,217.00	57,291	80,217			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 376.11 MAINS - HP 4" AND LESS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -75						
1906	38.00	63	66			
1910	1,486.00	2,440	2,600			
1911	33.00	54	58			
1912	33.00	54	58			
1913	838.69	1,361	1,468			
1914	389.00	629	681			
1915	258.22	416	452			
1916	203.00	326	355			
1917	91.00	146	159			
1918	833.19	1,327	1,458			
1919	1,913.07	3,037	3,348			
1920	530.00	838	928			
1921	1,394.00	2,196	2,440			
1922	1,060.59	1,664	1,856			
1923	824.00	1,288	1,442			
1924	92.28	144	161			
1925	2,154.26	3,341	3,753	17	7.40	2
1926	1,296.21	2,002	2,249	19	7.63	2
1927	1,782.54	2,742	3,080	39	7.87	5
1928	2,678.28	4,102	4,608	79	8.11	10
1929	4,979.48	7,593	8,530	184	8.36	22
1930	3,418.25	5,190	5,831	151	8.60	18
1931	1,549.37	2,342	2,631	80	8.86	9
1932	2,070.25	3,115	3,500	123	9.11	14
1933	404.00	605	680	27	9.38	3
1934	2,652.09	3,952	4,440	201	9.65	21
1935	105.33	156	175	9	9.92	1
1936	4,061.54	5,991	6,731	377	10.21	37
1937	2,284.52	3,352	3,766	232	10.50	22
1938	6.66	10	11	1	10.80	
1939	843.06	1,223	1,374	101	11.11	9
1940	5,125.72	7,393	8,306	664	11.43	58
1941	2,439.72	3,497	3,929	341	11.76	29
1942	9,590.13	13,656	15,342	1,441	12.11	119
1943	997.44	1,411	1,585	161	12.46	13
1944	2,095.50	2,943	3,306	361	12.83	28
1945	1,205.00	1,680	1,887	222	13.21	17
1946	23,985.29	33,192	37,289	4,685	13.60	344
1947	17,685.18	24,278	27,275	3,674	14.01	262
1948	5,767.32	7,852	8,821	1,272	14.43	88
1949	16,924.00	22,846	25,666	3,951	14.86	266
1950	17,887.98	23,936	26,891	4,413	15.30	288
1951	21,257.02	28,180	31,659	5,541	15.76	352

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 376.11 MAINS - HP 4" AND LESS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -75						
1952	20,048.42	26,319	29,568	5,517	16.24	340
1953	24,932.17	32,408	36,408	7,223	16.72	432
1954	16,603.26	21,358	23,994	5,062	17.22	294
1955	12,858.79	16,365	18,385	4,118	17.73	232
1956	247,498.62	311,450	349,895	83,228	18.26	4,558
1957	594,910.07	739,977	831,320	209,773	18.80	11,158
1958	531,614.11	653,376	734,029	196,296	19.35	10,144
1959	769,957.01	934,695	1,050,074	297,351	19.91	14,935
1960	1,018,484.34	1,220,766	1,371,457	410,891	20.48	20,063
1961	1,286,820.89	1,521,971	1,709,843	542,094	21.07	25,728
1962	4,974.67	5,803	6,519	2,187	21.67	101
1963	1,794,830.31	2,064,329	2,319,150	821,803	22.28	36,885
1964	2,867,673.52	3,250,386	3,651,613	1,366,816	22.90	59,686
1965	2,979,740.63	3,326,880	3,737,550	1,476,996	23.53	62,771
1966	3,661,082.71	4,024,491	4,521,274	1,885,621	24.17	78,015
1967	2,858,258.62	3,091,957	3,473,628	1,528,325	24.82	61,576
1968	3,044,212.60	3,239,042	3,638,869	1,688,503	25.48	66,268
1969	3,403,143.56	3,558,650	3,997,929	1,957,572	26.16	74,831
1970	3,088,810.66	3,173,413	3,565,139	1,840,280	26.84	68,565
1971	2,901,157.09	2,926,702	3,287,974	1,789,051	27.53	64,986
1972	2,973,985.19	2,944,952	3,308,477	1,895,997	28.22	67,186
1973	3,628,708.51	3,523,875	3,958,862	2,391,378	28.93	82,661
1974	2,992,670.72	2,849,023	3,200,706	2,036,468	29.64	68,707
1975	2,904,321.85	2,707,837	3,042,092	2,040,471	30.37	67,187
1976	3,825,453.75	3,491,473	3,922,460	2,772,084	31.10	89,135
1977	4,363,456.81	3,895,531	4,376,395	3,259,654	31.84	102,376
1978	6,044,454.97	5,274,301	5,925,360	4,652,436	32.59	142,757
1979	8,205,428.74	6,994,225	7,857,592	6,501,908	33.34	195,018
1980	8,553,368.36	7,115,675	7,994,033	6,974,362	34.10	204,527
1981	7,573,312.19	6,143,433	6,901,778	6,351,518	34.87	182,148
1982	7,059,667.88	5,578,514	6,267,125	6,087,294	35.65	170,752
1983	7,291,140.86	5,606,268	6,298,305	6,461,192	36.44	177,310
1984	9,844,792.25	7,360,484	8,269,062	8,959,324	37.23	240,648
1985	10,795,219.85	7,841,540	8,809,499	10,082,136	38.02	265,180
1986	10,474,657.73	7,380,287	8,291,309	10,039,342	38.83	258,546
1987	9,548,055.69	6,519,054	7,323,766	9,385,331	39.64	236,764
1988	9,757,679.72	6,446,850	7,242,649	9,833,291	40.46	243,037
1989	12,209,146.28	7,796,883	8,759,330	12,606,676	41.28	305,394
1990	13,002,898.64	8,013,199	9,002,348	13,752,725	42.11	326,590
1991	14,485,228.76	8,599,192	9,660,676	15,688,474	42.95	365,273
1992	17,025,846.37	9,722,482	10,922,624	18,872,607	43.79	430,980
1993	18,895,934.39	10,357,854	11,636,427	21,431,458	44.64	480,095
1994	20,693,904.74	10,864,300	12,205,388	24,008,945	45.50	527,669

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 376.11 MAINS - HP 4" AND LESS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -75						
1995	17,310,120.94	8,687,041	9,759,369	20,533,343	46.36	442,911
1996	16,740,919.47	8,013,794	9,003,016	20,293,593	47.22	429,767
1997	16,946,020.52	7,710,439	8,662,215	20,993,321	48.10	436,452
1998	18,902,347.06	8,157,969	9,164,988	23,914,119	48.97	488,342
1999	17,879,491.98	7,292,866	8,193,097	23,096,014	49.85	463,310
2000	16,439,438.35	6,311,347	7,090,419	21,678,598	50.74	427,249
2001	13,988,980.38	5,035,438	5,657,012	18,823,704	51.63	364,588
2002	12,950,695.56	4,348,034	4,884,755	17,778,962	52.53	338,453
2003	17,259,506.28	5,376,336	6,039,991	24,164,145	53.43	452,258
2004	16,322,080.90	4,688,722	5,267,497	23,296,145	54.33	428,790
2005	12,959,459.72	3,405,260	3,825,605	18,853,450	55.24	341,301
2006	16,130,460.86	3,843,284	4,317,699	23,910,608	56.15	425,835
2007	14,662,122.62	3,130,363	3,516,775	22,141,940	57.07	387,979
2008	8,525,642.98	1,609,109	1,807,737	13,112,138	57.99	226,110
2009	14,163,215.68	2,322,165	2,608,813	22,176,814	58.91	376,452
2010	7,568,914.34	1,051,436	1,181,225	12,064,375	59.84	201,611
2011	11,693,081.74	1,331,725	1,496,113	18,966,780	60.77	312,108
2012	12,160,971.40	1,077,280	1,210,259	20,071,441	61.71	325,254
2013	12,848,762.29	816,442	917,224	21,568,110	62.64	344,318
2014	14,659,316.28	560,536	629,729	25,024,074	63.58	393,584
2015	17,135,288.63	216,804	243,566	29,743,189	64.53	460,920
	550,689,047.46	266,386,523	299,268,830	664,437,003		13,961,139
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						47.6 2.54

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 376.12 MAINS - HP 4" AND OVER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -60						
1909	12,224.39	18,425	19,520	39	3.77	10
1910	18,734.89	28,122	29,794	182	4.02	45
1911	107.55	161	171	1	4.26	
1912	4,286.89	6,384	6,764	95	4.50	21
1913	20,767.30	30,810	32,642	586	4.73	124
1915	4,079.00	6,007	6,364	162	5.17	31
1916	10,173.75	14,928	15,815	463	5.39	86
1917	2,712.00	3,965	4,201	138	5.61	25
1918	4,687.00	6,827	7,233	266	5.83	46
1919	80.00	116	123	5	6.04	1
1920	9,605.00	13,886	14,711	657	6.27	105
1921	15,536.41	22,376	23,706	1,152	6.49	178
1922	37,159.00	53,317	56,487	2,967	6.71	442
1923	17,836.00	25,491	27,006	1,532	6.94	221
1924	5,562.00	7,918	8,389	510	7.17	71
1925	19,177.00	27,190	28,806	1,877	7.40	254
1926	27,320.60	38,582	40,876	2,837	7.63	372
1927	10,785.00	15,167	16,069	1,187	7.87	151
1928	13,629.16	19,086	20,221	1,586	8.11	196
1929	512.68	715	758	62	8.36	7
1930	58,774.98	81,598	86,449	7,591	8.60	883
1931	23,770.94	32,849	34,802	3,232	8.86	365
1932	1,241.41	1,708	1,810	176	9.11	19
1934	10,161.25	13,844	14,667	1,591	9.65	165
1935	5,985.19	8,115	8,597	979	9.92	99
1937	13,954.00	18,720	19,833	2,493	10.50	237
1939	5,571.02	7,390	7,829	1,085	11.11	98
1940	204.00	269	285	41	11.43	4
1941	2,385.00	3,126	3,312	504	11.76	43
1942	1,951.00	2,540	2,691	431	12.11	36
1945	4,704.00	5,997	6,354	1,172	13.21	89
1946	10,534.00	13,328	14,120	2,734	13.60	201
1947	133,674.27	167,779	177,753	36,126	14.01	2,579
1948	30,663.40	38,170	40,439	8,622	14.43	598
1949	5,025.44	6,202	6,571	1,470	14.86	99
1952	27,604.00	33,131	35,101	9,065	16.24	558
1953	11,566.48	13,746	14,563	3,943	16.72	236
1954	14,564.19	17,129	18,147	5,156	17.22	299
1955	84,863.46	98,744	104,614	31,168	17.73	1,758
1956	1,980,212.15	2,278,290	2,413,729	754,610	18.26	41,326
1957	539,154.68	613,144	649,594	213,053	18.80	11,333
1958	1,407,340.82	1,581,423	1,675,435	576,310	19.35	29,783
1959	1,350,971.72	1,499,449	1,588,588	572,967	19.91	28,778

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 376.12 MAINS - HP 4" AND OVER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -60						
1960	2,426,897.33	2,659,569	2,817,675	1,065,361	20.48	52,020
1961	2,065,147.35	2,233,168	2,365,925	938,311	21.07	44,533
1962	1,298,743.16	1,385,229	1,467,578	610,411	21.67	28,168
1963	2,837,475.46	2,983,798	3,161,178	1,378,783	22.28	61,884
1964	2,789,720.34	2,890,998	3,062,862	1,400,691	22.90	61,166
1965	2,585,783.70	2,639,568	2,796,485	1,340,769	23.53	56,981
1966	2,821,430.19	2,835,650	3,004,223	1,510,065	24.17	62,477
1967	1,921,576.09	1,900,516	2,013,498	1,061,024	24.82	42,749
1968	2,435,910.44	2,369,654	2,510,525	1,386,932	25.48	54,432
1969	2,044,666.70	1,954,832	2,071,043	1,200,424	26.16	45,888
1970	1,786,516.50	1,678,125	1,777,886	1,080,540	26.84	40,259
1971	2,739,194.38	2,526,458	2,676,651	1,706,060	27.53	61,971
1972	1,980,249.89	1,792,839	1,899,419	1,268,981	28.22	44,967
1973	2,366,416.83	2,101,075	2,225,979	1,560,288	28.93	53,933
1974	2,675,203.26	2,328,497	2,466,921	1,813,404	29.64	61,181
1975	1,602,030.21	1,365,622	1,446,805	1,116,443	30.37	36,761
1976	1,156,683.17	965,210	1,022,590	828,103	31.10	26,627
1977	1,192,111.23	973,049	1,030,895	876,483	31.84	27,528
1978	2,906,574.75	2,318,842	2,456,692	2,193,828	32.59	67,316
1979	2,924,333.68	2,279,015	2,414,498	2,264,436	33.34	67,919
1980	3,064,189.87	2,330,647	2,469,199	2,433,505	34.10	71,364
1981	4,891,456.66	3,627,817	3,843,483	3,982,848	34.87	114,220
1982	4,281,772.81	3,093,427	3,277,325	3,573,511	35.65	100,239
1983	4,289,669.81	3,015,672	3,194,947	3,668,525	36.44	100,673
1984	7,347,412.13	5,022,456	5,321,030	6,434,829	37.23	172,840
1985	5,447,767.78	3,618,015	3,833,098	4,883,330	38.02	128,441
1986	5,296,435.42	3,411,921	3,614,752	4,859,545	38.83	125,149
1987	3,808,601.24	2,377,481	2,518,817	3,574,945	39.64	90,185
1988	5,199,365.49	3,140,750	3,327,461	4,991,524	40.46	123,369
1989	5,096,346.29	2,975,614	3,152,508	5,001,646	41.28	121,164
1990	4,103,923.80	2,312,315	2,449,777	4,116,501	42.11	97,756
1991	7,843,369.47	4,257,130	4,510,207	8,039,184	42.95	187,175
1992	9,230,825.09	4,819,377	5,105,879	9,663,441	43.79	220,677
1993	10,029,158.58	5,026,293	5,325,095	10,721,559	44.64	240,178
1994	9,480,302.72	4,550,545	4,821,065	10,347,419	45.50	227,416
1995	12,332,522.87	5,658,556	5,994,945	13,737,092	46.36	296,313
1996	18,592,294.39	8,137,178	8,620,916	21,126,755	47.22	447,411
1997	19,396,947.33	8,069,130	8,548,823	22,486,293	48.10	467,490
1998	11,705,490.55	4,618,893	4,893,476	13,835,309	48.97	282,526
1999	12,104,317.24	4,514,039	4,782,389	14,584,519	49.85	292,568
2000	14,910,606.60	5,233,742	5,544,877	18,312,094	50.74	360,901
2001	13,607,507.12	4,478,285	4,744,510	17,027,501	51.63	329,799
2002	17,714,360.55	5,437,600	5,760,854	22,582,123	52.53	429,890

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 376.12 MAINS - HP 4" AND OVER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -60						
2003	30,098,350.22	8,572,010	9,081,598	39,075,762	53.43	731,345
2004	18,600,100.61	4,885,130	5,175,541	24,584,620	54.33	452,505
2005	24,537,622.55	5,894,918	6,245,358	33,014,838	55.24	597,662
2006	19,851,572.95	4,324,467	4,581,547	27,180,970	56.15	484,078
2007	24,245,965.25	4,732,812	5,014,168	33,779,376	57.07	591,894
2008	22,884,940.91	3,949,025	4,183,786	32,432,119	57.99	559,271
2009	17,239,599.26	2,584,285	2,737,915	24,845,444	58.91	421,753
2010	12,962,123.06	1,646,293	1,744,162	18,995,235	59.84	317,434
2011	14,025,278.19	1,460,424	1,547,243	20,893,202	60.77	343,808
2012	16,059,928.42	1,300,726	1,378,051	24,317,834	61.71	394,066
2013	9,170,131.34	532,748	564,419	14,107,791	62.64	225,220
2014	19,627,152.23	686,165	726,956	30,676,488	63.58	482,486
2015	16,085,122.55	186,073	197,135	25,539,061	64.53	395,770
	505,679,049.03	189,539,837	200,807,579	608,278,899		12,145,768
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						50.1 2.40

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 377 COMPRESSOR STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S2						
NET SALVAGE PERCENT.. -5						
2003	818,380.00	297,807	611,329	247,970	22.87	10,843
	818,380.00	297,807	611,329	247,970		10,843
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						22.9 1.32

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 378 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -20						
1949	13,147.00	13,744	15,776			
1950	2,585.00	2,687	3,102			
1952	3,901.00	4,007	4,681			
1953	7,573.00	7,730	9,088			
1954	3,935.00	3,990	4,708	14	7.75	2
1955	13,406.00	13,500	15,931	156	8.04	19
1956	48,458.00	48,450	57,174	976	8.34	117
1957	30,840.00	30,598	36,108	900	8.66	104
1958	42,875.00	42,199	49,797	1,653	8.99	184
1959	36,309.00	35,440	41,821	1,750	9.33	188
1960	107,203.00	103,738	122,417	6,227	9.68	643
1961	66,657.00	63,895	75,400	4,588	10.06	456
1962	43,697.00	41,477	48,945	3,491	10.45	334
1963	66,875.00	62,836	74,150	6,100	10.85	562
1964	82,595.00	76,754	90,575	8,539	11.28	757
1965	155,371.00	142,742	168,445	18,000	11.72	1,536
1966	167,417.00	151,961	179,324	21,576	12.18	1,771
1967	95,011.00	85,145	100,477	13,536	12.66	1,069
1968	116,937.00	103,419	122,041	18,283	13.15	1,390
1969	103,704.00	90,446	106,732	17,713	13.66	1,297
1970	44,816.00	38,517	45,453	8,326	14.19	587
1971	104,156.00	88,166	104,041	20,946	14.73	1,422
1972	154,237.00	128,486	151,622	33,462	15.29	2,188
1973	127,698.00	104,600	123,435	29,803	15.87	1,878
1974	68,713.00	55,311	65,270	17,186	16.46	1,044
1975	47,726.00	37,719	44,511	12,760	17.07	748
1976	46,498.00	36,056	42,548	13,250	17.69	749
1977	209,427.00	159,232	187,904	63,408	18.32	3,461
1978	42,548.00	31,686	37,391	13,667	18.97	720
1979	159,252.00	116,076	136,977	54,125	19.63	2,757
1980	159,436.00	113,646	134,110	57,213	20.30	2,818
1981	122,295.00	85,147	100,479	46,275	20.99	2,205
1982	246,534.00	167,564	197,736	98,105	21.68	4,525
1983	244,704.00	162,151	191,348	102,297	22.39	4,569
1984	596,419.00	384,905	454,212	261,491	23.11	11,315
1985	270,231.00	169,662	200,212	124,065	23.84	5,204
1986	371,597.00	226,704	267,525	178,391	24.58	7,258
1987	307,786.00	182,234	215,048	154,295	25.33	6,091
1988	269,971.00	154,920	182,815	141,150	26.09	5,410
1989	300,385.00	166,822	196,861	163,601	26.86	6,091
1990	242,524.00	130,206	153,651	137,378	27.63	4,972
1991	539,949.00	279,650	330,005	317,934	28.42	11,187
1992	464,086.00	231,449	273,125	283,778	29.22	9,712

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 378 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. -20						
1993	273,224.00	131,016	154,607	173,262	30.02	5,772
1994	575,924.00	264,833	312,520	378,589	30.84	12,276
1995	674,159.00	296,738	350,170	458,821	31.66	14,492
1996	1,135,006.00	476,975	562,861	799,146	32.49	24,597
1997	864,430.00	345,841	408,114	629,202	33.33	18,878
1998	600,436.00	227,974	269,024	451,499	34.18	13,209
1999	781,675.00	280,840	331,409	606,601	35.03	17,317
2000	942,827.00	319,279	376,770	754,622	35.89	21,026
2001	85,371.00	27,127	32,012	70,433	36.76	1,916
2002	729,133.00	216,290	255,236	619,724	37.64	16,465
2003	572,105.94	157,627	186,010	500,517	38.52	12,994
2004	933,123.87	237,163	279,867	839,882	39.41	21,311
2005	872,878.63	203,206	239,796	807,658	40.30	20,041
2006	765,479.21	161,669	190,780	727,795	41.20	17,665
2007	1,345,734.33	254,828	300,713	1,314,168	42.11	31,208
2008	1,038,546.13	173,977	205,304	1,040,951	43.02	24,197
2009	1,539,721.35	224,307	264,696	1,582,970	43.93	36,034
2010	1,785,922.18	220,311	259,981	1,883,126	44.86	41,978
2011	1,339,039.11	135,618	160,038	1,446,809	45.78	31,604
2012	2,378,044.43	187,770	221,580	2,632,073	46.71	56,349
2013	3,075,049.57	173,433	204,662	3,485,397	47.65	73,146
2014	2,179,402.55	73,751	87,031	2,528,252	48.59	52,032
2015	839,421.78	9,469	11,174	996,132	49.53	20,112
	31,676,138.08	9,175,709	10,827,326	27,184,040		691,959

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 39.3 2.18

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 379 MEASURING AND REGULATING STATION EQUIPMENT - CITY GATE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2						
NET SALVAGE PERCENT.. -20						
1956	90,440.00	92,079	108,528			
1957	415.00	419	498			
1958	6,571.00	6,576	7,885			
1959	140.00	139	168			
1960	126,308.00	124,119	151,570			
1961	9,016.00	8,776	10,819			
1962	8,119.00	7,822	9,743			
1963	18,246.00	17,399	21,895			
1964	64,144.00	60,501	76,973			
1965	56,664.00	52,841	67,997			
1966	20,596.00	18,981	24,715			
1967	7,958.00	7,245	9,550			
1968	12,365.00	11,112	14,838			
1969	35,068.00	31,094	42,082			
1970	9,987.00	8,733	11,984			
1971	29,853.00	25,721	35,824			
1972	84,792.00	71,949	101,750			
1973	28,044.00	23,422	33,653			
1974	8,729.00	7,172	10,475			
1975	11,764.00	9,499	14,117			
1976	19,765.00	15,675	23,718			
1977	47,198.00	36,726	56,638			
1980	97,555.00	71,385	112,877	4,189	17.56	239
1981	36,714.00	26,277	41,550	2,507	18.16	138
1982	29,076.00	20,330	32,147	2,744	18.78	146
1983	6,973.00	4,758	7,524	844	19.41	43
1984	29,051.00	19,328	30,562	4,299	20.05	214
1986	84,113.00	53,002	83,809	17,127	21.37	801
1987	12,520.00	7,666	12,122	2,902	22.04	132
1988	31,995.00	19,001	30,045	8,349	22.73	367
1989	4,938.00	2,842	4,494	1,432	23.42	61
1990	2,738.00	1,524	2,410	876	24.13	36
1991	34,959.00	18,794	29,718	12,233	24.84	492
1992	1,830.00	948	1,499	697	25.57	27
1993	979.00	488	772	403	26.30	15
1996	28,701.00	12,575	19,884	14,557	28.57	510
2000	206,808.00	73,292	115,892	132,278	31.71	4,171
2001	40,639.00	13,536	21,404	27,363	32.51	842
2002	220.00	69	109	155	33.32	5
2004	302.39	81	128	235	34.98	7
2005	155,306.30	38,060	60,182	126,186	35.81	3,524
2009	128,042.07	19,701	31,152	122,498	39.23	3,123
2010	135,098.10	17,653	27,913	134,205	40.10	3,347

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 379 MEASURING AND REGULATING STATION EQUIPMENT - CITY GATE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2						
NET SALVAGE PERCENT.. -20						
2011	59,276.55	6,354	10,047	61,085	40.98	1,491
2012	76,366.14	6,395	10,112	81,527	41.86	1,948
2013	2,090,302.12	125,418	198,315	2,310,048	42.75	54,036
2014	832,205.88	29,959	47,372	951,275	43.65	21,793
2015	915,920.58	10,991	17,379	1,081,726	44.55	24,281
	5,738,811.13	1,238,427	1,784,838	5,101,735		121,789
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						41.9 2.12

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 58-R2						
NET SALVAGE PERCENT.. -80						
1905	1,271.09	2,288	2,288			
1906	133.00	239	239			
1908	568.32	1,020	1,023			
1909	53.00	95	95			
1910	1,277.05	2,276	2,299			
1912	677.50	1,197	1,220			
1913	35.43	62	64			
1914	1,011.44	1,770	1,821			
1915	70.61	123	127			
1917	288.01	497	518			
1918	1,052.22	1,806	1,894			
1919	1,136.22	1,940	2,045			
1920	1,418.07	2,409	2,553			
1922	1,361.57	2,289	2,451			
1923	1,329.26	2,223	2,393			
1924	6,231.02	10,365	11,216			
1925	7,481.28	12,377	13,466			
1926	4,159.13	6,844	7,486			
1927	961.53	1,573	1,731			
1928	2,138.00	3,479	3,848			
1929	3,693.68	5,978	6,649			
1930	3,927.18	6,321	7,069			
1931	12,831.60	20,532	23,097			
1932	8,710.44	13,860	15,679			
1933	3,544.83	5,608	6,381			
1934	3,942.06	6,200	7,096			
1935	7,814.96	12,219	14,067			
1936	6,547.84	10,177	11,786			
1937	9,223.59	14,247	16,602			
1938	15,105.40	23,186	27,190			
1939	18,935.18	28,883	34,083			
1940	13,596.83	20,605	24,474			
1941	15,701.80	23,634	28,147	116	9.50	12
1942	22,711.98	33,953	40,437	445	9.83	45
1943	6,151.71	9,132	10,876	197	10.17	19
1944	19,017.95	28,023	33,375	857	10.52	81
1945	23,424.09	34,262	40,805	1,358	10.87	125
1946	48,205.72	69,970	83,332	3,438	11.23	306
1947	37,454.50	53,934	64,234	3,184	11.60	274
1948	19,298.28	27,562	32,825	1,912	11.98	160
1949	26,596.99	37,673	44,867	3,008	12.36	243
1950	31,014.11	43,544	51,860	3,965	12.76	311
1951	54,257.07	75,486	89,901	7,762	13.17	589

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 58-R2						
NET SALVAGE PERCENT.. -80						
1952	13,269.00	18,292	21,785	2,099	13.58	155
1953	82,474.16	112,595	134,097	14,356	14.01	1,025
1954	9,405.40	12,715	15,143	1,787	14.44	124
1955	21,279.20	28,470	33,907	4,396	14.89	295
1956	222,722.30	294,870	351,181	49,719	15.34	3,241
1957	209,237.82	273,963	326,281	50,347	15.81	3,185
1958	48,416.10	62,687	74,658	12,491	16.28	767
1959	282,112.56	360,977	429,912	77,891	16.77	4,645
1960	649,439.45	820,912	977,680	191,311	17.27	11,078
1961	749,794.96	936,131	1,114,903	234,728	17.77	13,209
1962	809,643.44	997,795	1,188,342	269,016	18.29	14,708
1963	972,429.14	1,182,412	1,408,215	342,157	18.82	18,180
1964	1,188,859.21	1,426,018	1,698,343	441,604	19.35	22,822
1965	1,399,855.94	1,655,218	1,971,313	548,428	19.90	27,559
1966	1,635,043.41	1,904,878	2,268,650	674,428	20.46	32,963
1967	1,642,155.75	1,884,108	2,243,913	711,967	21.03	33,855
1968	1,762,174.60	1,990,662	2,370,816	801,098	21.60	37,088
1969	2,011,916.51	2,235,919	2,662,909	958,541	22.19	43,197
1970	2,051,118.56	2,241,311	2,669,331	1,022,682	22.79	44,874
1971	2,331,193.04	2,503,925	2,982,096	1,214,051	23.39	51,905
1972	2,590,396.65	2,732,490	3,254,310	1,408,404	24.01	58,659
1973	2,740,307.44	2,837,895	3,379,844	1,552,709	24.63	63,041
1974	2,427,610.41	2,465,865	2,936,768	1,432,931	25.27	56,705
1975	2,211,692.96	2,202,634	2,623,268	1,357,779	25.91	52,404
1976	2,749,727.50	2,682,981	3,195,346	1,754,164	26.56	66,045
1977	3,300,025.93	3,152,323	3,754,317	2,185,730	27.22	80,299
1978	4,692,783.79	4,385,181	5,222,612	3,224,399	27.89	115,611
1979	5,800,281.63	5,297,618	6,309,296	4,131,211	28.57	144,600
1980	7,252,010.88	6,470,549	7,706,220	5,347,400	29.25	182,817
1981	7,342,905.38	6,392,117	7,612,810	5,604,420	29.95	187,126
1982	5,885,914.26	4,995,905	5,949,966	4,644,680	30.65	151,539
1983	6,489,412.95	5,365,174	6,389,753	5,291,190	31.36	168,724
1984	8,369,668.54	6,732,729	8,018,468	7,046,935	32.08	219,668
1985	10,110,652.92	7,907,178	9,417,200	8,781,975	32.80	267,743
1986	9,749,433.68	7,403,915	8,817,830	8,731,151	33.53	260,398
1987	10,159,102.51	7,481,691	8,910,458	9,375,927	34.27	273,590
1988	11,499,585.51	8,201,251	9,767,432	10,931,822	35.02	312,159
1989	15,080,845.49	10,399,449	12,385,416	14,760,106	35.78	412,524
1990	17,192,461.10	11,450,179	13,636,803	17,309,627	36.54	473,717
1991	18,696,060.67	12,004,666	14,297,179	19,355,730	37.31	518,781
1992	19,397,454.77	11,991,701	14,281,738	20,633,681	38.08	541,851
1993	21,541,507.85	12,795,656	15,239,223	23,535,491	38.86	605,648
1994	21,998,635.94	12,527,871	14,920,300	24,677,245	39.65	622,377

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 380 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 58-R2						
NET SALVAGE PERCENT.. -80						
1995	20,362,722.96	11,090,801	13,208,795	23,444,106	40.45	579,582
1996	23,085,338.83	12,000,267	14,291,940	27,261,670	41.25	660,889
1997	25,083,710.74	12,408,761	14,778,444	30,372,235	42.06	722,117
1998	24,198,262.64	11,362,246	13,532,077	30,024,796	42.87	700,368
1999	26,342,304.77	11,698,512	13,932,559	33,483,590	43.69	766,390
2000	23,134,284.13	9,677,950	11,526,134	30,115,577	44.52	676,451
2001	23,172,043.72	9,096,881	10,834,099	30,875,580	45.35	680,829
2002	24,263,222.44	8,892,859	10,591,115	33,082,685	46.19	716,230
2003	25,651,909.49	8,733,244	10,401,019	35,772,418	47.03	760,630
2004	23,785,944.19	7,470,309	8,896,903	33,917,797	47.88	708,392
2005	21,962,868.83	6,318,586	7,525,237	32,007,927	48.73	656,842
2006	22,967,362.01	5,994,481	7,139,238	34,202,014	49.59	689,696
2007	20,119,046.19	4,707,857	5,606,909	30,607,374	50.46	606,567
2008	20,263,730.97	4,200,793	5,003,012	31,471,704	51.32	613,244
2009	19,799,579.74	3,563,924	4,244,521	31,394,723	52.20	601,431
2010	14,055,135.05	2,146,135	2,555,979	22,743,264	53.08	428,471
2011	16,796,851.87	2,106,124	2,508,327	27,726,006	53.96	513,825
2012	19,626,916.56	1,918,688	2,285,097	33,043,353	54.85	602,431
2013	25,139,049.39	1,755,259	2,090,459	43,159,830	55.75	774,167
2014	27,139,609.39	1,145,563	1,364,329	47,486,968	56.64	838,400
2015	27,373,673.54	382,355	455,373	48,817,239	57.55	848,258
	710,138,948.30	316,152,332	376,515,207	901,734,900		20,348,276
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						44.3 2.87

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 43-S0						
NET SALVAGE PERCENT.. 0						
1910	81,665.96	81,666	81,666			
1923	287.25	287	287			
1924	468.00	468	468			
1925	779.00	779	779			
1926	710.00	710	710			
1927	453.00	453	453			
1929	340.00	340	340			
1931	87.00	86	87			
1937	34.00	32	34			
1939	34.00	31	34			
1940	2,361.00	2,147	2,361			
1941	155.00	140	155			
1942	1.00	1	1			
1943	37.00	33	36	1	5.02	
1944	649.00	567	627	22	5.40	4
1945	680.00	588	650	30	5.79	5
1946	1,767.00	1,513	1,672	95	6.17	15
1947	735.00	623	689	46	6.56	7
1948	173.00	145	160	13	6.94	2
1950	160.00	131	145	15	7.72	2
1951	66.00	54	60	6	8.12	1
1952	381.00	306	338	43	8.51	5
1953	566.00	449	496	70	8.91	8
1954	326.00	255	282	44	9.31	5
1955	815.00	631	697	118	9.71	12
1956	20,831.74	15,934	17,609	3,223	10.11	319
1957	21,443.00	16,202	17,906	3,537	10.51	337
1958	15,289.68	11,407	12,606	2,684	10.92	246
1959	4,263.01	3,140	3,470	793	11.33	70
1960	7,669.42	5,576	6,162	1,507	11.74	128
1961	153,286.20	109,974	121,538	31,748	12.15	2,613
1962	206,208.16	145,927	161,271	44,937	12.57	3,575
1963	245,364.61	171,242	189,248	56,117	12.99	4,320
1964	244,717.29	168,400	186,107	58,610	13.41	4,371
1965	313,378.32	212,586	234,940	78,438	13.83	5,672
1966	206,405.22	137,955	152,461	53,944	14.26	3,783
1967	344,299.91	226,677	250,512	93,788	14.69	6,384
1968	294,512.33	190,953	211,032	83,480	15.12	5,521
1969	215,972.47	137,870	152,367	63,605	15.55	4,090
1970	338,033.22	212,332	234,659	103,374	15.99	6,465
1971	390,153.23	241,080	266,430	123,723	16.43	7,530
1972	710,781.64	431,921	477,338	233,444	16.87	13,838
1973	374,117.06	223,426	246,919	127,198	17.32	7,344

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 43-S0						
NET SALVAGE PERCENT.. 0						
1974	497,277.24	291,772	322,452	174,825	17.77	9,838
1975	63,641.95	36,661	40,516	23,126	18.23	1,269
1976	785.32	444	491	294	18.68	16
1977	327,118.56	181,436	200,514	126,605	19.15	6,611
1978	340,598.89	185,269	204,750	135,849	19.61	6,928
1979	567,920.64	302,713	334,544	233,377	20.08	11,622
1980	511,573.26	266,970	295,042	216,531	20.56	10,532
1981	804,744.08	411,168	454,403	350,341	21.03	16,659
1982	653,579.96	326,483	360,813	292,767	21.52	13,604
1983	211,610.42	103,296	114,158	97,452	22.01	4,428
1984	282,031.87	134,456	148,594	133,438	22.50	5,931
1985	439,439.45	204,392	225,884	213,555	23.00	9,285
1986	778,533.52	353,057	390,181	388,353	23.50	16,526
1987	62,711.25	27,695	30,607	32,104	24.01	1,337
1988	547,143.92	235,015	259,727	287,417	24.53	11,717
1989	786,337.44	328,249	362,765	423,572	25.05	16,909
1990	1,212,533.22	491,221	542,873	669,660	25.58	26,179
1991	716,201.75	281,317	310,898	405,304	26.11	15,523
1992	1,149,075.97	436,913	482,855	666,221	26.65	24,999
1993	1,086,930.08	399,382	441,377	645,553	27.20	23,734
1994	1,112,808.25	394,401	435,873	676,935	27.76	24,385
1995	1,297,421.77	442,628	489,171	808,251	28.33	28,530
1996	1,425,608.32	467,471	516,626	908,982	28.90	31,453
1997	1,854,716.27	582,733	644,008	1,210,708	29.49	41,055
1998	1,454,269.32	436,964	482,911	971,358	30.08	32,292
1999	1,489,503.70	426,758	471,632	1,017,872	30.68	33,177
2000	1,437,578.12	391,151	432,281	1,005,297	31.30	32,118
2001	1,889,958.87	486,986	538,193	1,351,766	31.92	42,349
2002	1,961,815.44	476,309	526,393	1,435,422	32.56	44,085
2003	3,216,120.40	732,214	809,207	2,406,913	33.21	72,476
2004	3,491,475.29	740,507	818,372	2,673,103	33.88	78,899
2005	2,271,442.09	446,361	493,296	1,778,146	34.55	51,466
2006	9,054,510.83	1,631,894	1,803,489	7,251,022	35.25	205,703
2007	7,009,275.07	1,147,559	1,268,226	5,741,049	35.96	159,651
2008	9,195,882.49	1,349,404	1,491,295	7,704,587	36.69	209,991
2009	1,202,800.07	155,522	171,875	1,030,925	37.44	27,535
2010	2,312,970.06	257,110	284,145	2,028,825	38.22	53,083
2011	2,553,502.91	236,940	261,854	2,291,649	39.01	58,745
2012	3,978,845.72	292,405	323,152	3,655,694	39.84	91,759

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381 METERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 43-S0						
NET SALVAGE PERCENT.. 0						
2013	2,949,481.17	158,446	175,107	2,774,374	40.69	68,183
2014	3,259,741.91	107,637	118,955	3,140,787	41.58	75,536
2015	4,031,747.63	45,962	50,795	3,980,953	42.51	93,647
	83,691,721.21	19,160,308	21,166,102	62,525,619		1,866,437
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						33.5 2.23

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381.1 METERS - ELECTRIC

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 15-R4						
NET SALVAGE PERCENT.. 0						
2012	43,218.56	10,027	38,406	4,813	11.52	418
2013	1,471,225.48	244,223	935,432	535,793	12.51	42,829
2014	27,230.47	2,723	10,430	16,800	13.50	1,244
	1,541,674.51	256,973	984,268	557,407		44,491
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						12.5 2.89

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 381.2 METERS - ERT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 16-R2.5						
NET SALVAGE PERCENT.. 0						
2006	10,643,594.70	5,441,538	5,963,055	4,680,540	7.82	598,535
2007	3,399,376.28	1,576,461	1,727,549	1,671,827	8.58	194,852
2008	7,490,471.94	3,103,902	3,401,380	4,089,092	9.37	436,403
2009	10,843,801.16	3,944,433	4,322,468	6,521,333	10.18	640,602
2010	621,957.31	193,584	212,137	409,820	11.02	37,189
2011	529,307.80	135,969	149,000	380,308	11.89	31,986
2012	675,970.73	136,465	149,544	526,427	12.77	41,224
2013	2,896,254.85	421,753	462,174	2,434,081	13.67	178,060
2014	1,170,601.70	103,153	113,039	1,057,563	14.59	72,485
2015	2,206,039.43	64,813	71,025	2,135,014	15.53	137,477
	40,477,375.90	15,122,071	16,571,371	23,906,005		2,368,813
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						10.1 5.85

NORTHWEST NATURAL GAS COMPANY
ACCOUNT 382 METER INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 32-S0.5						
NET SALVAGE PERCENT.. 0						
1959	1,546.90	1,422	578	969	2.59	374
1960	4,116.31	3,739	1,519	2,597	2.93	886
1961	20,001.94	17,964	7,297	12,705	3.26	3,897
1962	159,424.43	141,489	57,470	101,954	3.60	28,321
1963	162,160.80	142,246	57,778	104,383	3.93	26,561
1964	185,222.85	160,507	65,195	120,028	4.27	28,110
1965	292,661.52	250,501	101,749	190,913	4.61	41,413
1966	210,216.15	177,698	72,178	138,038	4.95	27,886
1967	364,992.06	304,655	123,746	241,246	5.29	45,604
1968	358,992.98	295,832	120,162	238,831	5.63	42,421
1969	41,327.74	33,604	13,649	27,679	5.98	4,629
1970	252,608.28	202,640	82,309	170,299	6.33	26,903
1971	280,078.95	221,612	90,015	190,064	6.68	28,453
1972	750,264.38	585,206	237,701	512,563	7.04	72,807
1973	410,612.84	315,659	128,215	282,398	7.40	38,162
1974	406,590.55	307,992	125,101	281,490	7.76	36,274
1975	5,896.92	4,399	1,787	4,110	8.13	506
1976	303,104.74	222,497	90,374	212,731	8.51	24,998
1977	17,841.07	12,885	5,234	12,607	8.89	1,418
1978	706,880.28	502,104	203,946	502,934	9.27	54,254
1979	313,394.72	218,787	88,867	224,528	9.66	23,243
1980	1,023,321.06	701,609	284,981	738,340	10.06	73,394
1981	1,068,060.76	718,933	292,018	776,043	10.46	74,191
1982	691,075.74	456,324	185,351	505,725	10.87	46,525
1983	519,140.03	335,982	136,470	382,670	11.29	33,895
1984	1,174.82	745	303	872	11.71	74
1985	120,742.94	74,935	30,437	90,306	12.14	7,439
1986	1,396,506.16	847,512	344,245	1,052,261	12.58	83,646
1988	1,266,850.85	732,797	297,649	969,202	13.49	71,846
1989	1,895,943.82	1,068,838	434,144	1,461,800	13.96	104,713
1990	2,337,395.85	1,283,371	521,283	1,816,113	14.43	125,857
1991	955,584.90	510,043	207,171	748,414	14.92	50,162
1992	1,474,182.81	763,804	310,244	1,163,939	15.42	75,482
1994	373,046.98	181,278	73,632	299,415	16.45	18,202
1995	764,378.63	358,539	145,632	618,747	16.99	36,418
1996	809,305.07	365,709	148,545	660,760	17.54	37,672
1997	2,557,081.36	1,110,745	451,165	2,105,916	18.10	116,349
1998	814,747.15	339,139	137,752	676,995	18.68	36,242
1999	1,118,670.19	445,018	180,759	937,911	19.27	48,672
2000	2,244,592.81	850,140	345,312	1,899,281	19.88	95,537
2001	2,645,552.07	950,759	386,182	2,259,370	20.50	110,213
2002	1,179,127.10	399,795	162,390	1,016,737	21.15	48,073
2003	1,066,561.56	339,636	137,954	928,608	21.81	42,577

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 382 METER INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 32-S0.5						
NET SALVAGE PERCENT.. 0						
2004	4,737,004.46	1,407,790	571,820	4,165,184	22.49	185,202
2005	2,613,726.58	719,585	292,283	2,321,444	23.19	100,105
2006	1,430,417.22	361,624	146,885	1,283,532	23.91	53,682
2007	2,566,625.25	588,732	239,133	2,327,492	24.66	94,383
2008	1,678,850.56	345,205	140,216	1,538,635	25.42	60,529
2009	559,933.41	101,314	41,152	518,781	26.21	19,793
2010	2,113,537.93	328,254	133,331	1,980,207	27.03	73,260
2011	2,350,269.73	303,326	123,206	2,227,064	27.87	79,909
2012	3,066,592.98	313,375	127,288	2,939,305	28.73	102,308
2013	2,189,686.18	162,168	65,870	2,123,816	29.63	71,678
2014	2,418,819.11	109,597	44,517	2,374,302	30.55	77,719
2015	2,452,817.94	37,553	15,253	2,437,565	31.51	77,358
	59,749,260.42	21,737,612	8,829,443	50,919,817		2,890,225

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 17.6 4.84

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 382.1 METER INSTALLATIONS - ELECTRIC

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 14-R3						
NET SALVAGE PERCENT.. 0						
2012	481,019.77	115,786	40,534	440,486	10.63	41,438
	481,019.77	115,786	40,534	440,486		41,438
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						10.6 8.61

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 382.2 METER INSTALLATIONS - ERT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-R2.5						
NET SALVAGE PERCENT.. 0						
2006	1,209,780.06	557,842	704,587	505,193	9.70	52,082
2007	1,812,947.00	756,398	955,374	857,573	10.49	81,751
2008	1,389,822.09	517,320	653,405	736,417	11.30	65,170
2009	5,060,620.40	1,650,319	2,084,448	2,976,172	12.13	245,356
	9,473,169.55	3,481,879	4,397,814	5,075,356		444,359
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 11.4						4.69

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 383 HOUSE REGULATORS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S2						
NET SALVAGE PERCENT.. 0						
2003	1,944.74	674	587	1,358	22.87	59
2004	50,974.78	16,356	14,238	36,737	23.77	1,546
2005	111,010.40	32,700	28,465	82,545	24.69	3,343
2006	99,709.20	26,693	23,236	76,473	25.63	2,984
2007	106,166.87	25,541	22,234	83,933	26.58	3,158
2008	81,705.03	17,392	15,140	66,565	27.55	2,416
2009	36,113.86	6,676	5,811	30,303	28.53	1,062
2010	82,233.28	12,899	11,229	71,004	29.51	2,406
2011	49,737.69	6,381	5,555	44,183	30.51	1,448
2012	155,612.57	15,561	13,546	142,067	31.50	4,510
2013	340,537.54	24,325	21,175	319,363	32.50	9,827
2014	169,390.07	7,260	6,319	163,071	33.50	4,868
2015	199,541.77	2,851	2,482	197,060	34.50	5,712
	1,484,677.80	195,309	170,017	1,314,661		43,339

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 30.3 2.92

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 387.1 OTHER EQUIPMENT - CATHODIC PROTECTION TESTING

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S3						
NET SALVAGE PERCENT.. 0						
1989	18,825.00	14,163	18,825			
1990	9,104.00	6,698	9,104			
1991	18,219.00	13,081	18,219			
1992	82,936.00	58,000	82,053	883	9.02	98
2005	9,866.13	3,440	4,867	4,999	19.54	256
2011	34,908.85	5,236	7,407	27,502	25.50	1,079
	173,858.98	100,618	140,475	33,384		1,433

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 23.3 0.82

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 387.2 OTHER EQUIPMENT - CALORIMETERS AT GATE STATION

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 23-S0.5						
NET SALVAGE PERCENT.. 0						
1962	865.00	865	865			
1972	10,994.00	10,569	10,994			
1986	25,765.00	19,380	25,765			
1990	252.00	173	252			
1991	21,291.00	14,219	21,291			
1993	4,866.00	3,072	4,866			
1994	7,658.00	4,691	7,658			
1995	2,254.00	1,337	2,254			
1996	2,372.00	1,359	2,372			
1997	12,952.00	7,157	12,952			
1998	4,440.00	2,359	4,440			
1999	2,715.00	1,383	2,715			
	96,424.00	66,564	96,424			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 387.3 OTHER EQUIPMENT - METER TESTING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 25-S4						
NET SALVAGE PERCENT.. 0						
1978	6,819.00	6,574	6,819			
1979	8,748.00	8,391	8,748			
1984	1,225.00	1,138	1,225			
1985	40,398.00	37,231	40,398			
1986	1,347.00	1,230	1,347			
1987	1,633.00	1,475	1,633			
1990	606.00	526	606			
1991	11,895.00	10,139	11,895			
	72,671.00	66,704	72,671			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 390 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S0						
NET SALVAGE PERCENT.. -5						
1913	49,479.00	51,953	51,953			
1915	172.00	181	181			
1920	424.00	445	445			
1922	510.00	536	536			
1923	67.00	70	70			
1924	11.00	12	12			
1925	92.00	97	97			
1927	545.00	565	572			
1930	177.00	179	186			
1936	33.00	32	34	1	3.88	
1937	236.00	224	238	10	4.26	2
1938	945.00	890	944	48	4.64	10
1939	107.00	100	106	6	5.02	1
1940	95.00	88	93	7	5.40	1
1941	1,344.00	1,230	1,305	106	5.78	18
1942	511.00	463	491	46	6.16	7
1943	3,058.00	2,744	2,911	300	6.55	46
1944	31.00	28	30	3	6.93	
1945	762.00	670	711	89	7.32	12
1946	193.00	168	178	25	7.71	3
1947	6,781.00	5,838	6,192	928	8.10	115
1948	3,062.00	2,608	2,766	449	8.50	53
1949	8,343.00	7,029	7,456	1,304	8.89	147
1950	248.00	207	220	40	9.29	4
1951	10,081.00	8,308	8,812	1,773	9.68	183
1952	29,220.00	23,808	25,253	5,428	10.08	538
1953	11,532.00	9,286	9,850	2,259	10.49	215
1954	63.00	50	53	13	10.89	1
1955	41,856.00	32,913	34,911	9,038	11.30	800
1956	46,058.00	35,787	37,959	10,402	11.70	889
1957	3,819.00	2,931	3,109	901	12.11	74
1958	2,256.00	1,709	1,813	556	12.53	44
1959	1,537.00	1,150	1,220	394	12.94	30
1960	2,315.00	1,709	1,813	618	13.36	46
1961	7,174.00	5,226	5,543	1,990	13.78	144
1962	5,289.00	3,801	4,032	1,521	14.20	107
1963	7,300.00	5,175	5,489	2,176	14.62	149
1964	130,505.00	91,202	96,738	40,292	15.05	2,677
1965	277,036.00	190,822	202,405	88,483	15.48	5,716
1966	652,577.00	442,944	469,831	215,375	15.91	13,537
1967	28,680.00	19,173	20,337	9,777	16.35	598
1968	58,260.00	38,362	40,691	20,482	16.78	1,221
1969	24,007.00	15,561	16,506	8,701	17.22	505

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 390 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S0						
NET SALVAGE PERCENT.. -5						
1970	16,934.00	10,799	11,455	6,326	17.67	358
1971	22,591.00	14,169	15,029	8,692	18.12	480
1972	82,143.00	50,657	53,732	32,518	18.57	1,751
1973	232,553.00	140,973	149,530	94,651	19.02	4,976
1974	410,099.00	244,200	259,023	171,581	19.48	8,808
1975	35,275.00	20,627	21,879	15,160	19.94	760
1976	674,980.00	387,441	410,959	297,770	20.40	14,597
1977	71,654.00	40,343	42,792	32,445	20.87	1,555
1978	794,667.00	438,527	465,146	369,254	21.35	17,295
1979	34,675.00	18,755	19,893	16,516	21.82	757
1980	90,623.00	48,000	50,914	44,240	22.30	1,984
1981	357,050.00	185,037	196,269	178,634	22.79	7,838
1982	254,992.00	129,231	137,075	130,667	23.28	5,613
1983	29,883.00	14,796	15,694	15,683	23.78	660
1984	23,017.00	11,128	11,803	12,365	24.28	509
1985	54,140.00	25,543	27,093	29,754	24.78	1,201
1986	104,994.00	48,262	51,192	59,052	25.30	2,334
1987	70,133.00	31,403	33,309	40,331	25.81	1,563
1988	73,630.00	32,059	34,005	43,306	26.34	1,644
1989	92,458.00	39,113	41,487	55,594	26.87	2,069
1990	164,888.00	67,714	71,824	101,308	27.40	3,697
1991	128,634.00	51,175	54,281	80,785	27.95	2,890
1992	247,197.00	95,172	100,949	158,608	28.50	5,565
1993	153,692.00	57,198	60,670	100,707	29.05	3,467
1995	124,540.00	43,037	45,649	85,118	30.19	2,819
1996	195,840.28	64,980	68,924	136,708	30.78	4,441
1997	221,794.36	70,538	74,820	158,064	31.37	5,039
1998	372,630.53	113,294	120,171	271,091	31.97	8,480
1999	421,098.00	122,034	129,442	312,711	32.58	9,598
2000	181,017.49	49,840	52,865	137,203	33.20	4,133
2001	409,332.12	106,590	113,060	316,739	33.84	9,360
2002	215,912.56	53,000	56,217	170,491	34.48	4,945
2003	948,566.69	218,232	231,479	764,516	35.14	21,756
2004	4,167,289.98	893,596	947,839	3,427,815	35.81	95,722
2005	1,235,865.90	245,115	259,994	1,037,665	36.50	28,429
2006	1,174,466.05	213,749	226,724	1,006,465	37.20	27,056
2007	88,023.67	14,541	15,424	77,001	37.92	2,031
2008	323,999.07	47,931	50,841	289,358	38.66	7,485
2009	661,837.93	86,171	91,402	603,528	39.42	15,310
2010	804,641.72	90,309	95,791	749,083	40.19	18,639
2011	3,667,035.68	342,261	363,037	3,487,350	41.00	85,057
2012	8,807,856.10	651,447	690,991	8,557,258	41.83	204,572

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 390 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S0						
NET SALVAGE PERCENT.. -5						
2013	15,908,313.52	861,244	913,522	15,790,207	42.68	369,967
2014	9,841,010.56	326,111	345,907	9,987,154	43.58	229,168
2015	3,188,696.65	36,461	38,674	3,309,457	44.51	74,353
	58,597,461.86	7,859,077	8,332,868	53,194,467		1,348,624
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						39.4 2.30

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 390.1 STRUCTURES AND IMPROVMENTS - SOURCE CONTROL PLANT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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-S0						
NET SALVAGE PERCENT.. -5						
2013	18,590,294.85	1,006,441	2,291,003	17,228,807	42.68	403,674
	18,590,294.85	1,006,441	2,291,003	17,228,807		403,674
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..					42.7	2.17

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 391.1 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1927	60.00	60	60			
1928	2,139.00	2,139	2,139			
1929	216.00	216	216			
1930	460.00	460	460			
1931	669.00	669	669			
1933	147.00	147	147			
1934	129.00	129	129			
1935	638.00	638	638			
1937	101.00	101	101			
1939	578.00	578	578			
1940	776.00	776	776			
1942	58.00	58	58			
1945	61.00	61	61			
1946	345.00	345	345			
1947	1,461.00	1,461	1,461			
1948	131.00	131	131			
1949	847.00	847	847			
1950	367.00	367	367			
1951	438.00	438	438			
1952	558.00	558	558			
1953	1,027.00	1,027	1,027			
1954	1,228.00	1,228	1,228			
1955	3,859.00	3,859	3,859			
1956	9,331.00	9,331	9,331			
1957	6,699.00	6,699	6,699			
1958	6,049.00	6,049	6,049			
1959	2,174.00	2,174	2,174			
1960	2,447.00	2,447	2,447			
1961	12,026.00	12,026	12,026			
1962	8,158.00	8,158	8,158			
1963	16,753.00	16,753	16,753			
1964	27,452.00	27,452	27,452			
1965	28,952.00	28,952	28,952			
1966	25,684.00	25,684	25,684			
1967	5,878.00	5,878	5,878			
1968	6,229.00	6,229	6,229			
1969	8,432.00	8,432	8,432			
1970	16,300.00	16,300	16,300			
1971	30,305.00	30,305	30,305			
1972	26,607.00	26,607	26,607			
1973	15,502.00	15,502	15,502			
1974	14,250.00	14,250	14,250			
1975	2,209.00	2,209	2,209			

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 391.1 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1976	20,437.00	20,437	20,437			
1977	35,272.00	35,272	35,272			
1978	31,120.00	31,120	31,120			
1979	28,810.00	28,810	28,810			
1980	13,943.00	13,943	13,943			
1981	14,750.00	14,750	14,750			
1982	1,671,226.00	1,671,226	1,671,226			
1983	243,313.00	243,313	243,313			
1984	169,424.00	169,424	169,424			
1985	67,750.00	67,750	67,750			
1986	67,437.00	67,437	67,437			
1987	55,319.00	55,319	55,319			
1988	83,346.00	83,346	83,346			
1989	38,356.00	38,356	38,356			
1990	52,036.00	52,036	52,036			
1991	70,941.00	70,941	70,941			
1992	54,346.00	54,346	54,346			
1993	65,238.00	65,238	65,238			
1994	112,320.00	112,320	112,320			
1995	121,396.00	121,396	121,396			
	3,304,510.00	3,304,510	3,304,510			

AMORTIZED
SURVIVOR CURVE.. 20-SQUARE
NET SALVAGE PERCENT.. 0

1996	112,366.15	109,557	108,922	3,444	0.50	3,444
1997	201,793.61	186,659	185,577	16,217	1.50	10,811
1998	86,053.84	75,297	74,860	11,193	2.50	4,477
1999	70,549.63	58,203	57,866	12,684	3.50	3,624
2000	113,980.61	88,335	87,823	26,158	4.50	5,813
2001	133,333.12	96,667	96,107	37,227	5.50	6,769
2002	150,625.11	101,672	101,083	49,543	6.50	7,622
2003	318,220.88	198,888	197,735	120,486	7.50	16,065
2004	900,507.14	517,792	514,790	385,717	8.50	45,378
2005	156,461.63	82,142	81,666	74,796	9.50	7,873
2006	86,514.39	41,094	40,856	45,659	10.50	4,348
2007	161,293.83	68,550	68,153	93,141	11.50	8,099
2008	262,606.27	98,477	97,906	164,700	12.50	13,176
2009	291,701.73	94,803	94,253	197,448	13.50	14,626
2010	523,345.63	143,920	143,086	380,260	14.50	26,225

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 391.1 OFFICE FURNITURE AND EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
AMORTIZED						
SURVIVOR CURVE.. 20-SQUARE						
NET SALVAGE PERCENT.. 0						
2011	662,400.03	149,040	148,176	514,224	15.50	33,176
2012	598,121.21	104,671	104,064	494,057	16.50	29,943
2013	1,010,562.81	126,320	125,588	884,975	17.50	50,570
2014	816,521.26	61,239	60,884	755,637	18.50	40,845
2015	466,419.53	11,660	11,592	454,827	19.50	23,324
	7,123,378.41	2,414,986	2,400,985	4,722,393		356,208
	10,427,888.41	5,719,496	5,705,495	4,722,393		356,208
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.3						3.42

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 391.2 OFFICE FURNITURE AND EQUIPMENT - COMPUTERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
2003	181,712.98	181,713	181,713			
2005	630,247.34	630,247	630,247			
2006	150,778.33	150,778	150,778			
2007	199,293.09	199,293	199,293			
2008	184,744.24	184,744	184,744			
2009	293,129.22	293,129	293,129			
2010	1,090,323.56	1,090,324	1,090,324			
	2,730,228.76	2,730,228	2,730,229			
AMORTIZED						
SURVIVOR CURVE.. 5-SQUARE						
NET SALVAGE PERCENT.. 0						
2011	1,217,316.50	1,095,585	1,055,436	161,881	0.50	161,881
2012	2,857,552.52	2,000,287	1,926,983	930,569	1.50	620,379
2013	2,296,654.63	1,148,327	1,106,245	1,190,410	2.50	476,164
2014	4,382,028.53	1,314,609	1,266,433	3,115,595	3.50	890,170
2015	2,535,336.41	253,534	244,243	2,291,094	4.50	509,132
	13,288,888.59	5,812,342	5,599,340	7,689,549		2,657,726
	16,019,117.35	8,542,570	8,329,569	7,689,549		2,657,726
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						2.9 16.59

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 392 TRANSPORTATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 13-L1.5						
NET SALVAGE PERCENT.. +10						
1972	69,477.00	62,529	62,529			
1976	6,463.00	5,624	5,681	136	0.43	136
1981	13,074.00	10,689	10,797	970	1.19	815
1983	42,591.00	33,938	34,282	4,050	1.49	2,718
1984	36,717.68	28,903	29,196	3,850	1.63	2,362
1985	48,703.00	37,831	38,214	5,619	1.78	3,157
1987	32,350.00	24,412	24,659	4,456	2.10	2,122
1988	45,451.00	33,763	34,105	6,801	2.27	2,996
1989	11,885.00	8,681	8,769	1,928	2.45	787
1990	42,305.00	30,372	30,680	7,394	2.63	2,811
1991	43,366.00	30,533	30,842	8,187	2.83	2,893
1992	29,591.00	20,425	20,632	6,000	3.03	1,980
1993	76,908.24	51,966	52,492	16,725	3.24	5,162
1994	512,327.73	338,730	342,161	118,934	3.45	34,474
1995	287,761.18	185,672	187,553	71,432	3.68	19,411
1996	316,840.50	199,390	201,410	83,746	3.91	21,418
1997	646,680.99	395,769	399,778	182,235	4.16	43,806
1998	475,831.81	282,974	285,840	142,409	4.41	32,292
1999	143,569.00	82,895	83,735	45,477	4.66	9,759
2000	362,869.00	202,984	205,040	121,542	4.92	24,704
2001	676,926.47	366,479	370,191	239,043	5.18	46,147
2002	244,579.06	127,840	129,135	90,986	5.45	16,695
2003	809,889.47	408,184	412,319	316,582	5.72	55,347
2004	936,522.99	454,501	459,105	383,766	5.99	64,068
2005	978,153.74	454,387	458,990	421,348	6.29	66,987
2006	217,586.12	96,257	97,232	98,596	6.61	14,916
2007	942,452.44	392,788	396,767	451,440	6.98	64,676
2008	1,480,162.67	573,849	579,662	752,484	7.40	101,687
2009	2,142,067.03	756,319	763,980	1,163,880	7.90	147,327
2010	1,753,855.54	548,818	554,377	1,024,093	8.48	120,766
2011	4,488,272.85	1,196,282	1,208,400	2,831,046	9.15	309,404
2012	5,369,146.04	1,156,015	1,167,725	3,664,506	9.89	370,526
2013	3,153,333.93	502,099	507,185	2,330,816	10.70	217,833
2014	2,062,903.78	202,798	204,852	1,651,761	11.58	142,639
2015	5,998,236.84	199,309	201,328	5,197,085	12.52	415,103
	34,498,851.10	9,504,005	9,599,643	21,449,323		2,367,924

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.1 6.86

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 393 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT. . 0						
1931	410.00	410	410			
1949	142.00	142	142			
1950	555.00	555	555			
1951	854.00	854	854			
1953	319.00	319	319			
1956	5,263.00	5,263	5,263			
1957	4,077.00	4,077	4,077			
1959	2,143.00	2,143	2,143			
1960	4,411.00	4,411	4,411			
1961	7,017.00	7,017	7,017			
1962	1,425.00	1,425	1,425			
1963	6,629.00	6,629	6,629			
1964	7,252.00	7,252	7,252			
1965	912.00	912	912			
1966	22,261.00	22,261	22,261			
1967	2,462.00	2,462	2,462			
1968	5,254.00	5,254	5,254			
1969	2,624.00	2,624	2,624			
1970	3,287.00	3,287	3,287			
1971	2,696.00	2,696	2,696			
1972	1,500.00	1,500	1,500			
1974	2,858.00	2,858	2,858			
1975	135.00	135	135			
1976	9,518.00	9,518	9,518			
1977	2,502.00	2,502	2,502			
1978	2,983.00	2,983	2,983			
1979	6,192.00	6,192	6,192			
1980	4,499.00	4,499	4,499			
1982	3,276.00	3,276	3,276			
1984	1,936.00	1,936	1,936			
1985	2,099.00	2,099	2,099			
1986	1,915.00	1,915	1,915			
	119,406.00	119,406	119,406			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 394 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1943	618.00	618	618			
1947	167.00	167	167			
1951	345.00	345	345			
1952	967.00	967	967			
1953	4,070.00	4,070	4,070			
1955	3,686.00	3,686	3,686			
1956	6,558.00	6,558	6,558			
1957	5,538.00	5,538	5,538			
1958	11,023.00	11,023	11,023			
1959	5,836.00	5,836	5,836			
1960	3,811.00	3,811	3,811			
1961	3,566.00	3,566	3,566			
1962	12,400.00	12,400	12,400			
1963	16,105.00	16,105	16,105			
1964	32,026.00	32,026	32,026			
1965	63,177.00	63,177	63,177			
1966	18,741.00	18,741	18,741			
1967	26,570.00	26,570	26,570			
1968	16,198.00	16,198	16,198			
1969	48,929.00	48,929	48,929			
1970	22,315.00	22,315	22,315			
1971	35,496.00	35,496	35,496			
1972	101,866.00	101,866	101,866			
1973	72,221.00	72,221	72,221			
1974	69,423.00	69,423	69,423			
1975	9,195.00	9,195	9,195			
1976	15,028.00	15,028	15,028			
1977	44,891.00	44,891	44,891			
1978	69,138.00	69,138	69,138			
1979	118,651.00	118,651	118,651			
1980	178,884.00	178,884	178,884			
1981	168,419.00	168,419	168,419			
1982	106,506.00	106,506	106,506			
1983	72,624.00	72,624	72,624			
1984	188,877.00	188,877	188,877			
1985	354,747.00	354,747	354,747			
1986	152,603.00	152,603	152,603			
1987	167,215.00	167,215	167,215			
1988	228,815.00	228,815	228,815			
1989	211,649.00	211,649	211,649			
1990	229,960.00	229,960	229,960			
	2,898,854.00	2,898,854	2,898,854			

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 394 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
AMORTIZED						
SURVIVOR CURVE.. 25-SQUARE						
NET SALVAGE PERCENT.. 0						
1991	470,133.00	460,730	458,118	12,015	0.50	12,015
1992	391,047.00	367,584	365,500	25,547	1.50	17,031
1993	602,999.00	542,699	539,622	63,377	2.50	25,351
1994	528,371.00	454,399	451,823	76,548	3.50	21,871
1995	656,733.00	538,521	535,468	121,265	4.50	26,948
1996	594,834.00	463,971	461,341	133,493	5.50	24,271
1997	879,260.46	650,653	646,964	232,296	6.50	35,738
1998	621,939.66	435,358	432,890	189,050	7.50	25,207
1999	420,821.61	277,742	276,167	144,654	8.50	17,018
2000	533,048.95	330,490	328,616	204,433	9.50	21,519
2001	494,438.80	286,775	285,149	209,290	10.50	19,932
2002	479,727.82	259,053	257,584	222,143	11.50	19,317
2003	546,830.13	273,415	271,865	274,965	12.50	21,997
2004	857,542.25	394,469	392,233	465,310	13.50	34,467
2005	731,631.02	307,285	305,543	426,088	14.50	29,385
2006	382,098.07	145,197	144,374	237,724	15.50	15,337
2007	212,322.56	72,190	71,781	140,542	16.50	8,518
2008	419,885.67	125,966	125,252	294,634	17.50	16,836
2009	236,537.99	61,500	61,151	175,387	18.50	9,480
2010	79,462.62	17,482	17,383	62,080	19.50	3,184
2011	286,576.95	51,584	51,292	235,285	20.50	11,477
2012	1,673,154.33	234,242	232,914	1,440,240	21.50	66,988
2013	944,985.54	94,499	93,963	851,022	22.50	37,823
2014	431,652.65	25,899	25,752	405,900	23.50	17,272
2015	358,563.78	7,171	7,130	351,433	24.50	14,344
	13,834,597.86	6,878,874	6,839,875	6,994,723		553,326
	16,733,451.86	9,777,728	9,738,729	6,994,723		553,326

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.6 3.31

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 395 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1924	65.00	65	65			
1927	130.00	130	130			
1929	86.00	86	86			
1939	90.00	90	90			
1940	111.00	111	111			
1948	250.00	250	250			
1950	142.00	142	142			
1951	304.00	304	304			
1953	662.00	662	662			
1955	978.00	978	978			
1956	1,761.00	1,761	1,761			
1962	3,899.00	3,899	3,899			
1966	104.00	104	104			
1967	980.00	980	980			
1968	1,378.00	1,378	1,378			
1969	73.00	73	73			
1970	193.00	193	193			
1976	2,897.00	2,897	2,897			
1982	2,883.00	2,883	2,883			
1983	868.00	868	868			
1992	44,361.00	44,361	44,361			
1993	5,801.00	5,801	5,801			
	68,016.00	68,016	68,016			

AMORTIZED
SURVIVOR CURVE.. 20-SQUARE
NET SALVAGE PERCENT.. 0

1999	277.00	229	229	48	3.50	14
	277.00	229	229	48		14
	68,293.00	68,245	68,245	48		14

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 3.4 0.02

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 396 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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 17-S0.5						
NET SALVAGE PERCENT.. +20						
1985	62,386.85	46,328	49,909			
1987	25,568.00	18,180	20,454			
1988	33,798.00	23,507	27,038			
1989	14,660.73	9,962	11,729			
1990	9,667.00	6,414	7,734			
1991	38,611.00	24,983	30,889			
1992	3,591.00	2,264	2,873			
1993	21,873.00	13,422	17,498			
1994	139,627.01	83,250	111,702			
1995	67,791.00	39,239	54,233			
1996	77,638.66	43,514	62,111			
1997	150,613.60	81,580	119,417	1,074	5.49	196
1998	96,127.19	50,212	73,500	3,402	5.90	577
1999	28,647.79	14,398	21,076	1,842	6.32	291
2000	148,664.59	71,638	104,864	14,068	6.76	2,081
2002	370,370.51	162,267	237,527	58,769	7.69	7,642
2003	191,436.54	79,457	116,309	36,840	8.18	4,504
2004	399,771.47	156,148	228,570	91,247	8.70	10,488
2005	1,102,687.31	402,675	589,437	292,713	9.24	31,679
2006	627,872.98	212,738	311,407	190,891	9.80	19,479
2007	289,604.62	89,949	131,668	100,016	10.40	9,617
2008	81,191.25	22,848	33,445	31,508	11.02	2,859
2009	43,882.66	10,986	16,081	19,025	11.68	1,629
2010	779,138.10	169,391	247,955	375,355	12.38	30,319
2011	685,481.38	125,481	183,680	364,705	13.11	27,819
2012	854,815.07	125,104	183,128	500,724	13.89	36,049
2013	1,316,255.38	141,850	207,640	845,364	14.71	57,469
2014	386,119.43	25,802	37,769	271,127	15.58	17,402
2015	1,122,425.77	25,879	37,882	860,059	16.51	52,093
	9,170,317.89	2,279,466	3,277,525	4,058,729		312,193

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.0 3.40

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 397 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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						
2004	20,921.45	16,040	16,040	4,881	3.50	1,395
2007	17,682.64	10,020	10,020	7,663	6.50	1,179
2011	17,141.76	5,143	5,143	11,999	10.50	1,143
2012	32,576.38	7,601	7,602	24,974	11.50	2,172
	88,322.23	38,804	38,805	49,517		5,889
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						8.4 6.67

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 397.1 COMMUNICATION EQUIPMENT - MOBILE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1986	13,004.00	13,004	13,004			
1987	9,001.00	9,001	9,001			
1997	136,520.52	136,521	136,521			
2002	47,033.00	47,033	47,033			
2005	27,664.52	27,665	27,664			
	233,223.04	233,224	233,223			
AMORTIZED						
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
2007	94,070.95	79,960	79,958	14,113	1.50	9,409
2008	148,327.18	111,245	111,242	37,085	2.50	14,834
	242,398.13	191,205	191,200	51,198		24,243
	475,621.17	424,429	424,423	51,198		24,243
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						2.1 5.10

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 397.2 COMMUNICATION EQUIPMENT - NON-MOBILE AND TELEMETER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1980	58,979.00	58,979	58,979			
1981	18,176.00	18,176	18,176			
1982	1,033.00	1,033	1,033			
1983	4,886.00	4,886	4,886			
1984	332.00	332	332			
1985	10,652.00	10,652	10,652			
1986	36,732.00	36,732	36,732			
1987	12,425.00	12,425	12,425			
1988	34,646.00	34,646	34,646			
1989	4,539.00	4,539	4,539			
1990	93,390.00	93,390	93,390			
1991	221,436.00	221,436	221,436			
2000	132.00	132	132			
	497,358.00	497,358	497,358			

AMORTIZED
SURVIVOR CURVE.. 15-SQUARE
NET SALVAGE PERCENT.. 0

2001	1,183,538.00	1,144,091	1,104,547	78,991	0.50	78,991
2013	9,957.65	1,660	1,603	8,355	12.50	668
	1,193,495.65	1,145,751	1,106,150	87,346		79,659
	1,690,853.65	1,643,109	1,603,508	87,346		79,659

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 1.1 4.71

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 397.3 COMMUNICATION EQUIPMENT - TELEMETER OTHER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1956	1,947.00	1,947	1,947			
1957	3,325.00	3,325	3,325			
1963	1,208.00	1,208	1,208			
1965	31.00	31	31			
1967	6,276.00	6,276	6,276			
1968	2,047.00	2,047	2,047			
1969	985.00	985	985			
1976	18,999.00	18,999	18,999			
1977	19,038.00	19,038	19,038			
1980	10,971.00	10,971	10,971			
1981	55,313.00	55,313	55,313			
1982	2,942.00	2,942	2,942			
1983	3,773.00	3,773	3,773			
1984	3,696.00	3,696	3,696			
1985	40,785.00	40,785	40,785			
1986	103,927.00	103,927	103,927			
1987	262,871.00	262,871	262,871			
1988	124,235.00	124,235	124,235			
1989	288,501.00	288,501	288,501			
1990	243,660.00	243,660	243,660			
1992	150,446.00	150,446	150,446			
1993	104,242.00	104,242	104,242			
1994	139,452.00	139,452	139,452			
1995	32,662.00	32,662	32,662			
1996	92,532.00	92,532	92,532			
1998	31,979.00	31,979	31,979			
1999	498,982.00	498,982	498,982			
2000	322,813.00	322,813	322,813			
	2,567,638.00	2,567,638	2,567,638			

AMORTIZED
SURVIVOR CURVE.. 15-SQUARE
NET SALVAGE PERCENT.. 0

2001	66,565.00	64,346	63,633	2,932	0.50	2,932
2002	84,808.00	76,327	75,481	9,327	1.50	6,218
2003	88,767.23	73,972	73,152	15,615	2.50	6,246
2004	1,730.60	1,327	1,312	418	3.50	119
2005	44,671.71	31,270	30,923	13,748	4.50	3,055
2006	63,885.65	40,461	40,012	23,873	5.50	4,341
2007	53,241.79	30,171	29,837	23,405	6.50	3,601

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 397.3 COMMUNICATION EQUIPMENT - TELEMETER OTHER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
AMORTIZED						
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2008	153,747.85	76,874	76,022	77,726	7.50	10,363
2009	47,988.32	20,795	20,564	27,424	8.50	3,226
2010	188,278.98	69,036	68,271	120,008	9.50	12,632
2011	562,402.09	168,721	166,850	395,552	10.50	37,672
2012	264,234.41	61,654	60,970	203,264	11.50	17,675
2013	135,620.33	22,604	22,353	113,267	12.50	9,061
2014	363,661.94	36,366	35,963	327,699	13.50	24,274
2015	2,309.81	77	76	2,234	14.50	154
	2,121,913.71	774,001	765,420	1,356,494		141,569
	4,689,551.71	3,341,639	3,333,058	1,356,494		141,569
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						9.6 3.02

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 397.4 COMMUNICATION EQUIPMENT - TELEMETER MICROWAVE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1989	5,198.00	5,198	5,198			
1990	52,306.00	52,306	52,306			
1991	346,814.00	346,814	346,814			
1992	200.00	200	200			
1997	92,771.79	92,772	92,772			
	497,289.79	497,290	497,290			
AMORTIZED						
SURVIVOR CURVE.. 15-SQUARE						
NET SALVAGE PERCENT.. 0						
2005	262,701.27	183,891	183,891	78,810	4.50	17,513
2006	84,491.47	53,511	53,511	30,980	5.50	5,633
2007	61,119.78	34,635	34,635	26,485	6.50	4,075
2010	71,274.98	26,134	26,134	45,141	9.50	4,752
2011	44,683.87	13,405	13,405	31,279	10.50	2,979
2013	177,219.97	29,537	29,537	147,683	12.50	11,815
2014	371,736.68	37,174	37,174	334,563	13.50	24,782
2015	76,277.45	2,542	2,542	73,735	14.50	5,085
	1,149,505.47	380,829	380,830	768,675		76,634
	1,646,795.26	878,119	878,120	768,675		76,634
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						10.0 4.65

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 397.5 COMMUNICATION EQUIPMENT - TELEPHONE

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE.. 10-SQUARE						
NET SALVAGE PERCENT.. 0						
2012	150,095.31	52,533	52,534	97,561	6.50	15,009
2013	3,579.33	895	895	2,684	7.50	358
2014	242,627.02	36,394	36,394	206,233	8.50	24,263
2015	94,440.13	4,722	4,722	89,718	9.50	9,444
	490,741.79	94,544	94,545	396,197		49,074
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						8.1 10.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 398.1 MISCELLANEOUS EQUIPMENT - PRINT SHOP

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1951	210.00	210	210			
1953	190.00	190	190			
1959	986.00	986	986			
1960	296.00	296	296			
1963	586.00	586	586			
1964	134.00	134	134			
1965	6,606.00	6,606	6,606			
1967	5,132.00	5,132	5,132			
1968	4,447.00	4,447	4,447			
1969	4,446.00	4,446	4,446			
1970	2,836.00	2,836	2,836			
1971	6,770.00	6,770	6,770			
1972	125.00	125	125			
1973	6,466.00	6,466	6,466			
1979	27,851.00	27,851	27,851			
1993	11,809.00	11,809	11,809			
	78,890.00	78,890	78,890			

AMORTIZED
SURVIVOR CURVE.. 15-SQUARE
NET SALVAGE PERCENT.. 0

2009	4,359.31	1,889	1,889	2,470	8.50	291
	4,359.31	1,889	1,889	2,470		291
	83,249.31	80,779	80,779	2,470		291

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.5 0.35

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 398.2 MISCELLANEOUS EQUIPMENT - KITCHEN

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

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						
2010	12,812.44	4,698	4,700	8,112	9.50	854
	12,812.44	4,698	4,700	8,112		854
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						9.5 6.67

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 398.3 MISCELLANEOUS EQUIPMENT - JANITORIAL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1947	889.00	889	889			
1958	3,088.00	3,088	3,088			
1960	20.00	20	20			
1962	1,248.00	1,248	1,248			
1963	801.00	801	801			
1964	1,355.00	1,355	1,355			
1965	1,157.00	1,157	1,157			
1966	1,108.00	1,108	1,108			
1967	1,659.00	1,659	1,659			
1968	1,108.00	1,108	1,108			
1969	1,653.00	1,653	1,653			
1970	255.00	255	255			
1976	266.00	266	266			
1992	266.00	266	266			
	14,873.00	14,873	14,873			
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 398.4 MISCELLANEOUS EQUIPMENT - LEASED BUILDINGS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
 RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT.. 0						
1969	605.00	605	605			
1985	4,788.00	4,788	4,788			
1986	4,455.00	4,455	4,455			
1987	272.00	272	272			
	10,120.00	10,120	10,120			
COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT ..						0.0 0.00

NORTHWEST NATURAL GAS COMPANY

ACCOUNT 398.5 MISCELLANEOUS EQUIPMENT - OTHER

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2015

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY ACCRUED						
NET SALVAGE PERCENT. . 0						
1958	299.00	299	299			
1961	486.00	486	486			
1962	5,361.00	5,361	5,361			
1964	972.00	972	972			
1965	410.00	410	410			
1966	864.00	864	864			
1971	267.00	267	267			
1976	1,127.00	1,127	1,127			
1977	12,091.00	12,091	12,091			
1978	741.00	741	741			
1985	262.00	262	262			
1986	5,000.00	5,000	5,000			
1987	1,831.00	1,831	1,831			
1988	814.00	814	814			
1989	7,330.00	7,330	7,330			
1990	765.00	765	765			
1991	5,587.00	5,587	5,587			
1992	8,257.00	8,257	8,257			
1993	14,275.00	14,275	14,275			
	66,739.00	66,739	66,739			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

 **NW Natural**
CERTIFICATE OF SERVICE
UM 1808

I hereby certify that I have this day served by electronic mail NORTHWEST NATURAL'S UPDATED DEPRECIATION STUDY upon the all parties of record in the Company's most recent general rate case, UG 221.

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DATED at Portland, Oregon, this 20th day of December 2016.

/s/ Erica Lee
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