SOUTHWEST GAS CORPORATION

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

In the Matter of the Application of Southwest Gas Corporation for Authority to Increase its Retail Natural Gas Utility Service Rates in its Southern and Northern Nevada Rate Jurisdictions.	Docket No.: 23-09___

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Prepared Direct Testimony of Brandy L. Little
Prepared Direct Testimony of A. Brooks Congdon
Prepared Direct Testimony of Timothy L. Lyons
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Southwest Gas Corporation

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IN THE MATTER OF
SOUTHWEST GAS CORPORATION
DOCKET NO. 23-09___

PREPARED DIRECT TESTIMONY
OF
BRANDY L. LITTLE

ON BEHALF OF
SOUTHWEST GAS CORPORATION

SEPTEMBER 1, 2023

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Prepared Direct Testimony
of
Brandy L. Little

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

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Brandy L. Little

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Brandy L. Little. My business address is 8360 S. Durango Drive, Las Vegas, Nevada 89113.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or Company) in the Demand Planning department. My title is Economist.

Q. 3 Please summarize your educational background and relevant business experience.

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I have previously provided testimony to the California Public Utilities Commission.

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 I sponsor the Company's billing determinants (number of bills and therms) for both the test period and certification period as well as the associated adjustments to the recorded bills and therms, including an analysis of new weather normalizations required pursuant to the Public Utilities Commission of

Nevada's (Commission) Order in Docket No. 21-09001, for both the Southern and Northern Nevada rate jurisdictions.[1] .

Q. 6 Please summarize your prepared direct testimony.

A. 6 My prepared direct testimony consists of the following key issues:

- The methodology used to develop the billing determinants for the test year under present rates.
- The five adjustments made by Southwest Gas to the recorded number of bills and therms.
- The methodology and summary of results of the proposed method to incorporate a warming trend into the weather normalization process.
- The methodology used to develop the annualized billing determinants for the certification period.

II. METHODOLOGY USED TO DEVELOP BILLING DETERMINANTS

Q. 7 Please describe the methodology Southwest Gas utilized to develop the billing determinants for the test year under present rates.

A. 7 The development of the billing determinants commenced with the compilation of the monthly recorded number of bills and therms by rate schedule for the 12-month period ended May 31, 2023. Certain adjustments were made to the recorded information to derive the adjusted test year billing determinants. Those adjustments include: (1) billing adjustments; (2) customer-specific volume annualizations; (3) customer reclassifications; (4) weather normalization; and (5) customer annualizations. The details of the adjustments are discussed below

[1] See the Commission's Order in Docket No. 21-09001 at page 12, paragraph 7.

and presented in the Statement J Schedule J-1 Workpapers: Book 2 of Northern Nevada and Book 2 of Southern Nevada.

Q. 8 Why were the adjustments made to the test year billing determinants?

A. 8 The purpose of the adjustments is to ensure that the test year number of bills and volumes accurately reflect a full 12 months of consumption under normal weather conditions for each active customer billed at the end of the test year. Adjustments to test year billing determinants have been made pursuant to Section 703.2355(2) of the Nevada Administration Code (NAC), which states: "Jurisdictional operating revenues must be adjusted to show the annual effect of changes occurring during the period of testing."

Q. 9 Has Southwest Gas made any changes to the general methodology for developing the billing determinants for the test year?

A. 9 No. In fact, Southwest Gas has utilized the same general methodology to develop the billing determinants since 2001.

III. ADJUSTMENTS TO BILLING DETERMINANTS

Q. 10 Please explain Southwest Gas' billing adjustments.

A. 10 After compiling recorded test year billing determinants, customer historical billing records were reviewed to correct for any significant billing anomalies to ensure that the correct consumption level is reflected for each month in the test year. Southwest Gas defines significant billing anomalies as any customer that was billed twice in a month, billing corrections made during the test period, and meter read errors. Most of the corrections for billing adjustments involved restating the monthly consumption levels for customer bills to reflect actual monthly usage with no impact upon the total test year sales. This adjustment is necessary to ensure that the monthly adjusted volumes accurately reflect actual test year consumption. Accurate historical data increases the reliability of the regression analysis associated with the weather normalization adjustments, which is addressed later in my testimony.

Q. 11 Please explain Southwest Gas' customer-specific volume annualization adjustments.

A. 11 After completing the corrections for billing adjustments, customer-specific volume annualization adjustments were performed to reflect a full year of consumption for active customers billed during May 2023. This process involves estimating additional consumption for months during the test year where a new customer was not online or was clearly in a start-up phase, as well as removing consumption attributable to specific customers who discontinued service during the test year.

Q. 12 Please explain the purpose of Southwest Gas' customer reclassification adjustments.

A. 12 Customer reclassification adjustments move customers within or between rate schedules. These adjustments are performed to ensure that customer-specific consumption reflects a full 12 months of usage under the correct rate schedule at the end of the test year. Reclassification adjustments do not impact the overall number of bills or volumes for the test year.

Q. 13 Please explain Southwest Gas' weather normalization adjustments.

A. 13 Weather normalization adjustments provide an accurate depiction of monthly test year volumes under normal (average) weather conditions. To the extent that weather for the test year deviates from normal weather conditions, heat-sensitive consumption per customer should be adjusted to provide an accurate representation of monthly test year volumes under normal weather conditions.

For the test year in this case, actual billing cycle heating degree days were approximately 39.7 percent colder than normal in Southern Nevada and approximately 9.9 percent colder than normal in Northern Nevada. As a result of these deviations from normal weather, adjustments to test year volumes were computed to reflect anticipated volumes under normal weather conditions.

Q. 14 What rate schedules received weather normalization adjustments in Southern Nevada and Northern Nevada?

A. 14 In both Southern Nevada and Northern Nevada, weather normalization adjustments were completed for the single-family residential rate schedule; the multi-family residential rate schedule; the residential air conditioning rate schedule; the apartment, small commercial, large commercial and armed forces categories within the general service rate schedules; the air conditioning gas service rate schedules; the commercial, military, and electric generation categories in the transportation rate schedules; and for each transportation electric generation negotiated special contract customer.[2]

Q. 15 How many years of historical weather data were utilized to calculate the normal (average) heating degree days used to weather normalize the heat-sensitive volumes for the test year?

A. 15 Southwest Gas utilized 10 years (120 months ended May 2023) of historical cycle heating degree day data to calculate normal (average) heating degree days.

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[2] Pursuant to the Commission's Order in Docket No. 21-09011 at page 12, paragraph 7, the Company included a weather normalization to adjust: 1) transportation volumes if the transportation service customer is in a similar category as a weather-normalized general sales service category; 2) commercial A/C schedules in both southern and northern Nevada; and, 3) transportation small electric generation service schedule and the contracts for special services transportation electric generation service schedule.

Q. 16 Is the use of 10-year average heating degree days to weather normalize the heat-sensitive volumes consistent with Southwest Gas' prior practices for general rate cases in Nevada?

A. 16 Yes. Southwest Gas has consistently utilized 10-year average heating degree days to weather normalize test year volumes in every general rate case filed in Nevada since 1985.

Q. 17 Please explain Southwest Gas' procedure for calculating the weather normalization adjustments.

A. 17 Southwest Gas conducted regression analyses to quantify the historical relationships between actual monthly consumption per customer and heating degree day for each heat-sensitive customer class. The monthly consumption per heating degree days factors (regression coefficients) quantified in the regression analyses were then applied to monthly heating degree day deviations from normal to quantify the corresponding monthly adjustments to consumption per customer.

The Mesquite District Single Family Residential and General Service Small Commercial rate schedules were weather normalized by applying the percent change factor calculated from a percent change between the monthly actual and weather normalized sales volumes from similar rate schedules in the Southern Nevada District. The General Service Large Commercial rate schedules utilized the percent change factor from the Southern Nevada Small Commercial rate schedules in similar categories.

The Spring Creek District Single-Family Residential, and G1 and G2 Small Commercial rate schedules were weather normalized by utilizing the regression coefficients and heating degree days for the same rate schedule in the Elko District.

The methodologies utilized to develop the weather normalization adjustments for the Mesquite and Spring Creek Districts were due to a lack of historical data to develop regression equation coefficients.

Q. 18 What was the impact of the weather normalization adjustments upon test year volumes?

A. 18 The net result of the weather normalization adjustments was a decrease in test year volumes of 72,421,556 therms in Southern Nevada, and a decrease in test year volumes of 8,320,766 therms in Northern Nevada.

Q. 19 Please explain Southwest Gas' customer annualization adjustments.

A. 19 Customer annualization adjustments were made to annualize the number of bills and volumes based upon the number of active customers billed during the last month of the test year.

Q. 20 Why were customer annualization adjustments performed for these customers?

A. 20 In reference to test year volumes, Section 703.2355 (2) of the Nevada Administrative Code states,

> "Adjusted sales for each rate schedule to show the annual effect of increases or decreases in the number of customers during such a period may be computed using the number of customers at the end of the period and the average annual usage and demand per customer, except where the applicant can attribute changes in sales directly to changes in the usage or demand of individual customers."

Except for the single family and multi-family residential rate schedules, the small commercial customers within the general service rate schedules, the SG-G1 apartment customers and the SG-L customers, all rate schedules have been annualized by individual customer based upon customer-specific information. These customer-specific annualization adjustments were covered under the "volume annualization" adjustments previously discussed in my testimony. Because of the magnitude of customers in the rate schedules listed above, tracking billing histories to perform customer specific billing or annualization adjustments was impractical. Accordingly, annualization adjustments were performed using the number of customers at the end of the test period and the weather normalized average consumption per customer.

Q. 21 Please summarize the impact of the adjustments for the preparation of the annualized number of bills and therms for the test year under present rates.

A. 21 The impacts of each of the adjustments upon the number of bills and volumes for the test year are indicated by rate schedule in the supporting schedules Northern Nevada Schedule J-1, sheets 12 through 14 and the Southern Nevada Schedule J-1, sheets 12 through 14. All adjustments (billing adjustments, customer-specific volume annualizations, and customer annualizations) were made to ensure the accuracy and propriety of the number of bills and therms used to establish rates.

IV. METHOD TO INCORPORATE A WARMING TREND INTO THE WEATHER NORMALIZATION PROCESS

Q. 22 Did Southwest Gas prepare an analysis to incorporate a warming trend that is supported with at least 20 years of historical data into the weather normalization process pursuant to the Commission's Order in Docket No. 21-09001?[3]

A. 22 Yes. Although not part of the Company's proposed normalization process in this case, consistent with the Commission's order, the Company prepared an illustrative analysis to incorporate a weather trend that is supported with at least 20 years of historical data into the weather normalization process (Illustrative Analysis). The methodology used in the Illustrative Analysis is outlined below.

Q. 23 Describe the historical data used to support the Illustrative Analysis.

A. 23 Southwest Gas used monthly heating degree day data from June 1994 to May 2023 to calculate 20 years of monthly rolling 10-year average heating degree days (AHDD). See Exhibit No.___(BLL- 1) pages 1 – 108 for monthly graphs depicting the 20 years of AHDD data.

Q. 24 Please provide a brief outline of the Illustrative Analysis.

A. 24 The Illustrative Analysis is outlined below:

- Using the AHDD data, evaluate each month to determine if there is an identifiable warming trend.
- If the month has a warming trend, then calculate the compound annual growth rate (CAGR) between the maximum and current values in the AHDD data.

[3] See the Commission's Order in Docket No. 21-09011 at page 12, paragraph 7.

- Apply the CAGR to the 10-year normal to forecast the weather trend out three years.
- Calculate the average of the forecasted three years to obtain the weather trend 10-year normal.
- Replace the 10-year normal with the weather trend 10-year normal.

Q. 25 Provide an overview of the analysis that was conducted to identify a weather trend.

A. 25 Using regression analysis for the 20 years of AHDD data where the dependent variable is AHDD and the independent variable is a linear time trend, the t-statistic of the linear time trend regression coefficient was used to perform a t-test for statistical significance of the identified weather trend.[4] Graph 1 shows the 20 years of January AHDD's for Southern Nevada and includes the trendline and regression equation results that indicate there is a statistically significant trend of reducing AHDDs over time. See Exhibit No.___(BLL- 2) pages 1 – 70 for additional months.

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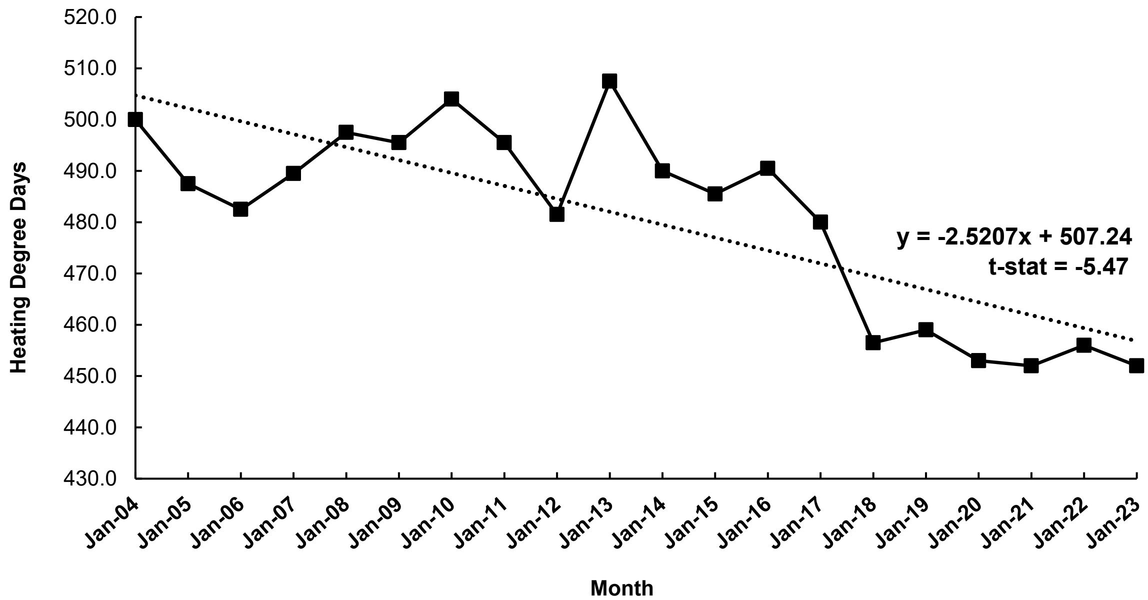
[4] In regression analysis, the t-statistic is used to measure statistical significance of regression coefficients.

GRAPH 1: MONTHLY ROLLING 10-YEAR AVERAGE HEATING DEGREE DAYS (AHDD), TRENDLINE & REGRESSION EQUATION RESULTS
SOUTHERN NEVADA, JANUARY, 2004 - 2023



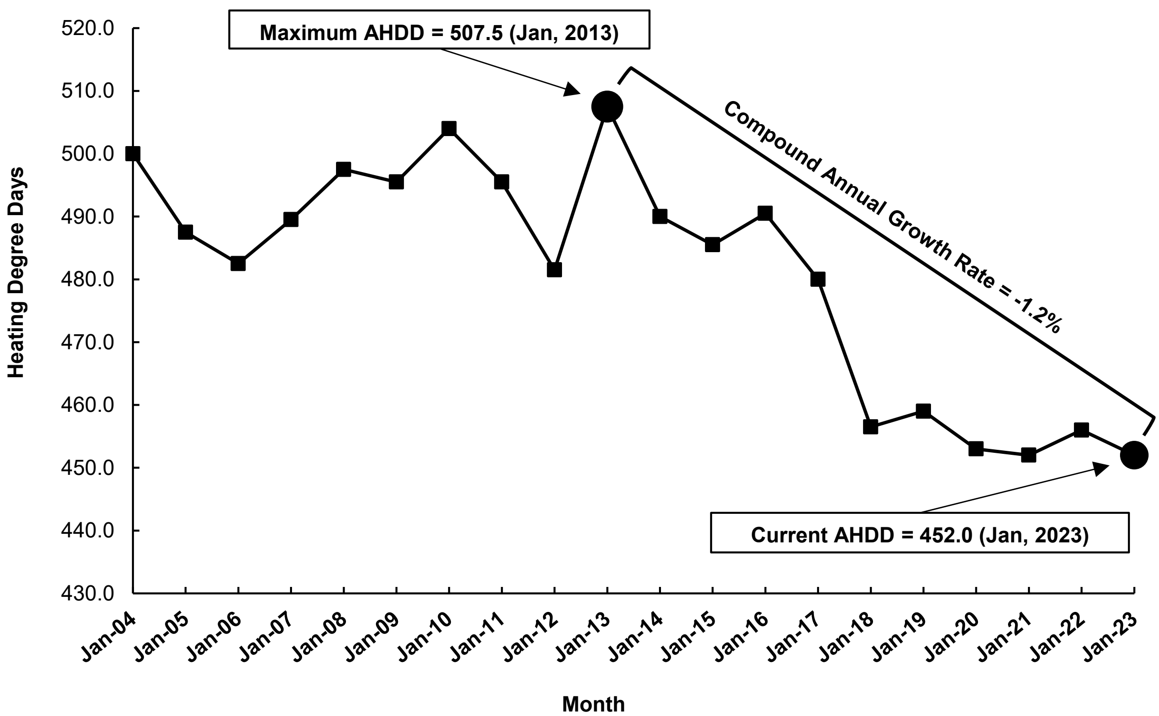
Q. 26 Why did Southwest Gas use the compound annual growth rate?

A. 26 The compound annual growth rate[5] is used to measure the rate of the identified weather trend at a constant annual rate. Using the CAGR mitigates the short-term fluctuations within the AHDD data and captures the long-term weather trend. This is also why the max value is used in the CAGR calculation.

A visual representation of this calculation can be seen in Graph 2 below.

[5] CAGR = (Current Value / Maximum Value) ^ (1 / Number of years between the Max and Current Value) – 1

GRAPH 2: MONTHLY ROLLING 10-YEAR AVERAGE HEATING DEGREE DAYS (AHDD) WITH MAXIMUM, CURRENT & COMPOUND ANNUAL GROWTH RATE (CAGR) IDENTIFIED
SOUTHERN NEVADA, JANUARY, 2004 - 2023



Source Data: National Oceanic and Atmospheric Administration

Q. 27 Why did Southwest Gas forecast the identified weather trend out three years and use the average of those years to determine the weather trend 10-year normal?

A. 27 Since 2012, Southwest Gas routinely has approximately three years between Nevada General Rate Case filings. Therefore, three years is the period that was averaged to determine the weather trend 10-year normal. Table 1 shows an example using January data for Southern Nevada.

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TABLE 1: WEATHER TREND FORECAST & WEATHER TREND 10-YEAR NORMAL DETERMINATION

10-Year Normal		521.5
Compound Annual Growth Rate		-1.2%
Forecasted Weather Trend		
	Year 1	515.0
	Year 2	509.0
	Year 3	503.0
Weather Trend 10-Year Normal		509.0

Q. 28 Did Southwest Gas also include a weather trend in normal weather for cooling degree days?

A. 28 Yes. Southwest Gas utilized the same approach and methodology to estimate the trend into normal weather for cooling degree days.

Q. 29 Please summarize the impact of the weather trend 10-year normal.

A. 29 The impact of the weather trend 10-year normal can be seen in Table 2 below.

TABLE 2: 10-YEAR NORMAL & WEATHER TREND 10-YEAR NORMAL

	10-YEAR NORMAL	WEATHER TREND 10-YEAR NORMAL
Northern Nevada		
District 23 – Tahoe	7,232.5	7,138.0
District 24 – Carson	5,175.0	5,127.5
District 25 – Elko & District 28 – Spring Creek	6,550.5	6,445.5
District 26 – Winnemucca	5,956.5	5,891.0
District 27 – Fernley	5,299.5	5,267.5
Southern Nevada		
District 21 – S Nevada & District 20 – Mesquite	1,678.5	1,629.0

Q. 30 Please summarize the weather trend impact on the Company's weather normalization process.

A. 30 The impact of the weather trend on the single-family residential weather normalized consumption per customer can be seen in Table 3 below:

TABLE 3: WEATHER NORMALIZED CONSUMPTION PER CUSTOMER

Single-Family Residential Gas Service
Consumption Per Customer (Therms)

	Test Year Recorded	Weather Normalized	Weather Normalized Proposed Method
Northern Nevada			
District 23 – Tahoe	1,557.5	1,364.1	1,351.7
District 24 – Carson	830.9	775.1	770.7
District 25 – Elko	819.0	718.4	709.9
District 26 – Winnemucca	720.8	679.6	675.0
District 27 – Fernley	670.9	639.5	637.1
District 28 – Spring Creek	880.9	789.5	779.9
Southern Nevada			
D20 – Mesquite	317.7	256.8	252.4
D21 – Southern Nevada	569.9	472.9	466.0

Q. 31 What are the effects of incorporating a weather trend into the normalization Process in the instant rate case?

A. 31 Incorporating the weather trend resulted in a larger negative weather adjustment overall..

Q. 32 What is the Company's recommendation with respect to incorporating a warming trend into the weather normalization process?

A 32 The Company does not recommend incorporating a warming trend into the weather normalization process.

The Company's current 10-year normal[6] already inherently reflects weather trends. The attached Exhibit No.___(BLL- 3) pages 1 – 6 includes graphs illustrating 12-month rolling actual heating degree days and rolling 10-year average heating degree days. The graphs show that the 10-year average heating degree days are picking up the warming trends in climate.

[6] Outlined in question and answer 15 and 16.

Imposing an additional warming trend is not appropriate and as further described in the testimony of Company witness Timothy S. Lyons, would unnecessarily introduce risk of higher rates and, therefore, higher bill volatility during colder-than-normal weather, which is not in the best interest of customers.

V. CERTIFICATION PERIOD BILLING DETERMINANTS

Q. 33 Please describe the methodology used to develop the annualized billing determinants for the certification period in this filing.

A. 33 The certification billing determinants for this filing were developed by calculating volumes for the certification period ended November 2023 from the consumption per customer derived from the test year ended May 2023 and a customer forecast in November 2023 for the single family and multi-family residential rate schedules; the small commercial customers within the general service rate schedules; and the apartment customers within the SG-G1 rate schedule. A customer annualization adjustment, as mentioned earlier in my testimony, was then performed on these rate schedules to calculate the annualized bills and volumes for the certification period. All other customers were held constant to the May 2023 test period. A subsequent certification filing will be made with updated actual customers for the annualized customers through November 2023.

Q. 34 Why does Southwest Gas forecast customers for the above-mentioned rate schedules?

A. 34 Southwest Gas forecasts the single family and multi-family residential rate schedules; the small commercial customers within the general service rate schedules; and the apartment customers within the SG-G1 rate schedule to accurately reflect expected customer growth between the test period and certification filing.

Q. 35 Did the Company include any customer-specific volume annualization certification adjustments?

A. 35 A volume annualization adjustment was made in District 20 (Mesquite) for the SG-G4 General Gas Service – 4 rate schedule to account for a customer who started service in August, during the certification period.

Q. 36 Does this conclude your prepared direct testimony?

A. 36 Yes.

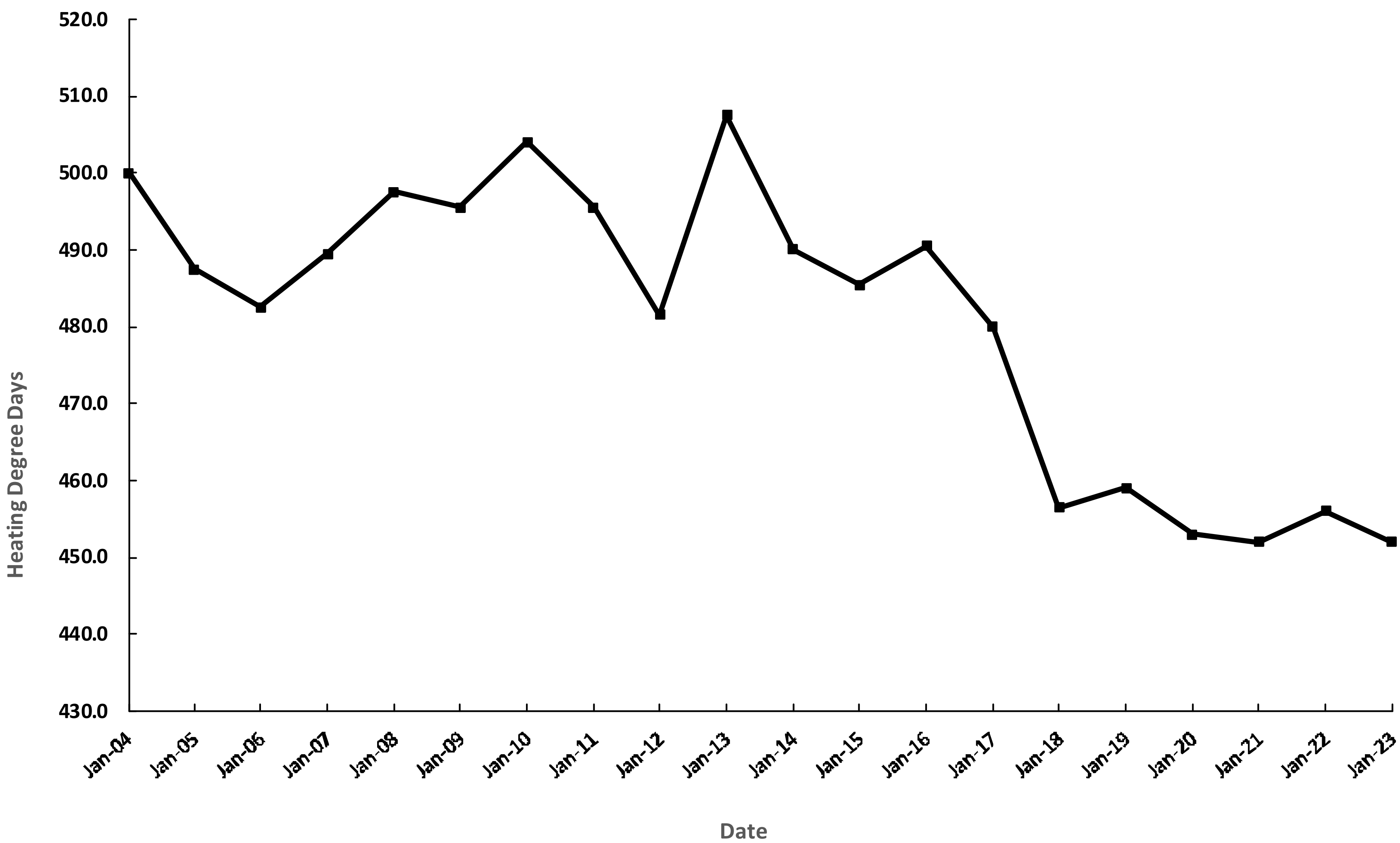
SUMMARY OF QUALIFICATIONS
BRANDY LITTLE

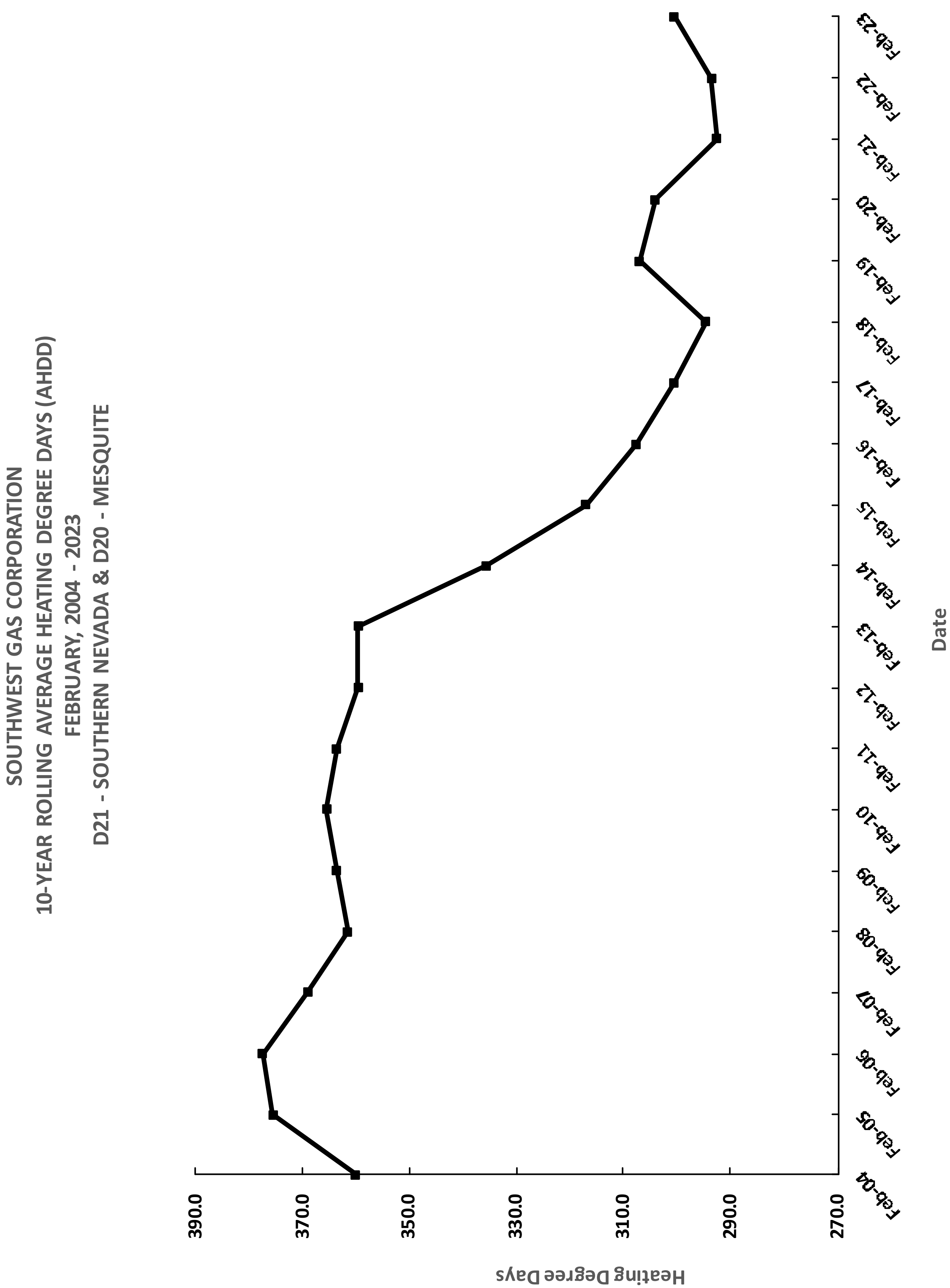
My academic history includes earning a Bachelor of Arts degree in Economics in 2007 from the University of Nevada, Las Vegas, and a Master of Arts degree in Economics in 2011 from the University of Nevada, Las Vegas. My degree programs had curriculum that included microeconomic theory, macroeconomic theory, short-run and long-run analysis, economic forecasting, economic data collection and interpretation, and econometrics. My graduate degree program emphasized mathematics and applied economics.

I joined Southwest Gas Corporation as an Analyst I in the Demand Planning Department in 2010. I was promoted to Analyst II in 2013 and then to Economist in 2019. My main responsibilities for general rate case filings include completing bill frequency analysis, developing weather normalized billing determinants, generating short- and long-range demand forecasts, analyzing and monitoring the regional economy in each of Southwest Gas' rate jurisdictions, and completing a variety of load research projects.

In the community, I am a member and former Chair and Vice-Chair of the Southern Nevada Area Population Projection and Estimation Committee ("SNAPPE"), a member of the Center for Business and Economic Research ("CBER") Population Forecast Group, and a member of the National Association of Business Economics ("NABE"). I regularly attend business and economic research events. I have also attended seminars related to both public utility ratemaking and load forecasting. I am a contributing panel member of the Western Blue Chip Economic Forecast published by the Seidman Research Institute, WP Carey College of Business, Arizona State University.

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JANUARY, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Heating Degree Days
390.0
370.0
350.0
330.0
310.0
290.0
270.0
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
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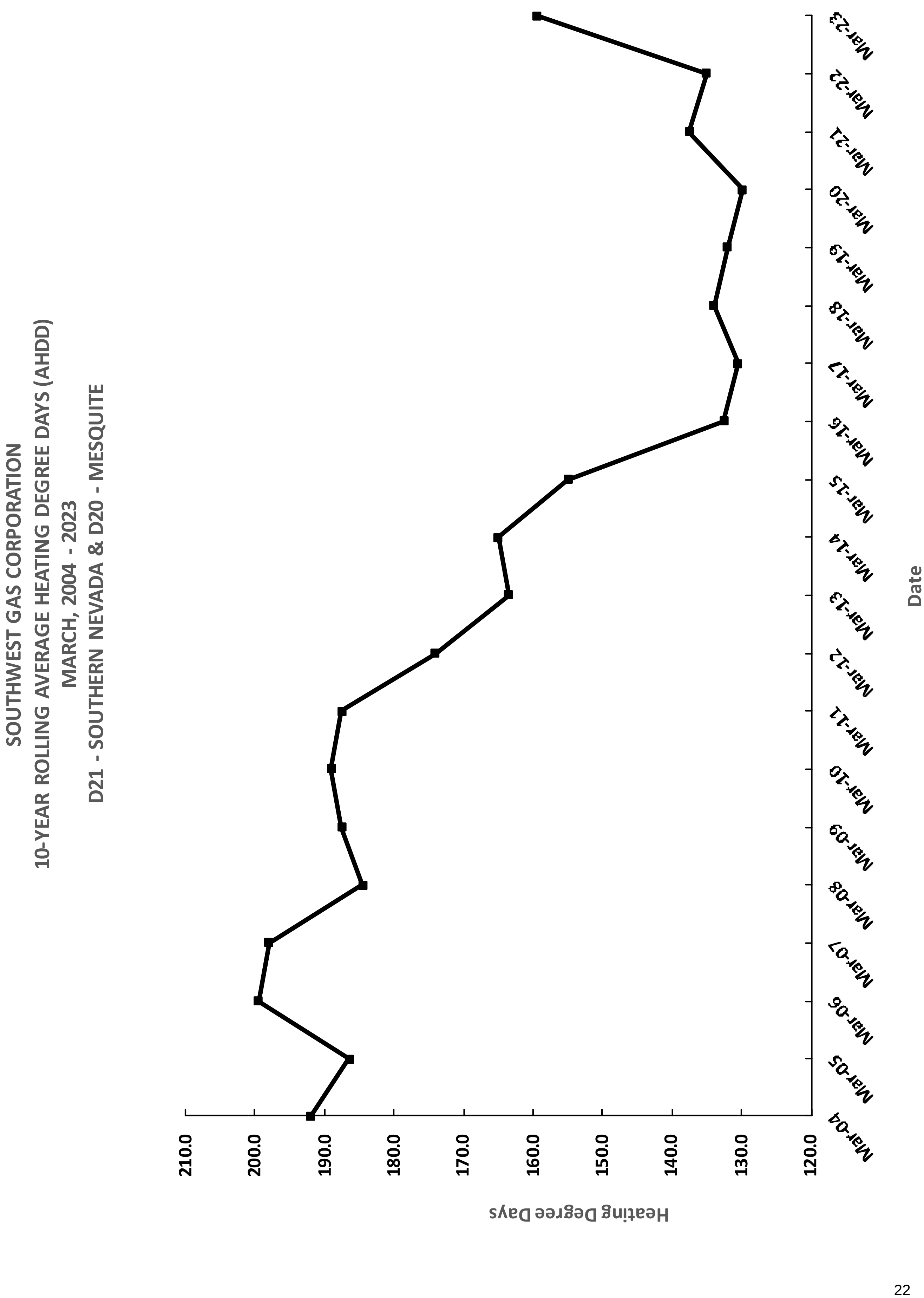
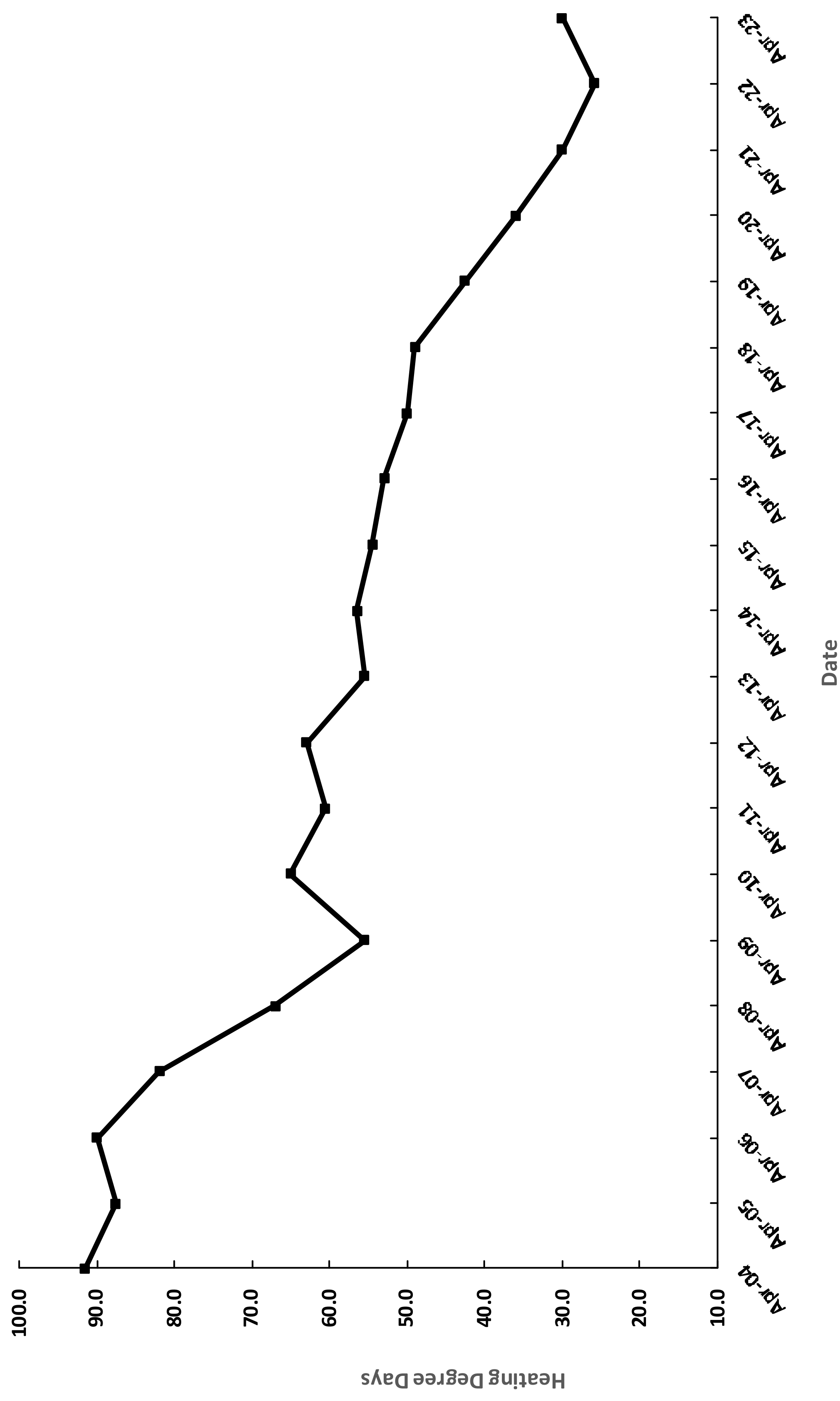
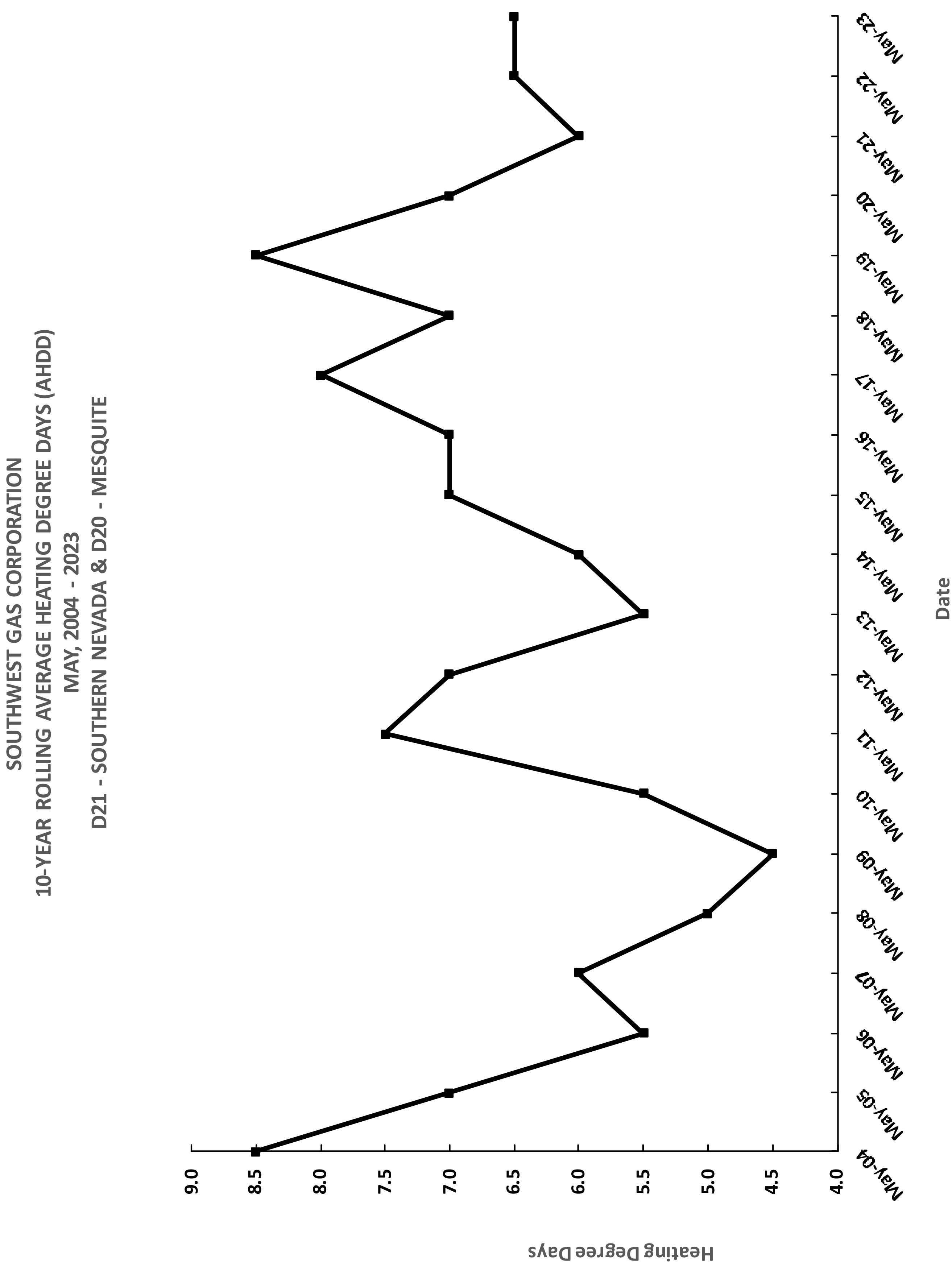
Feb-14
Feb-15
Feb-16
Feb-17
Feb-18
Feb-19
Feb-20
Feb-21
Feb-22
Feb-23
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Heating Degree Days
210.0
200.0
190.0
180.0
170.0
160.0
150.0
140.0
130.0
120.0
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Mar-23
Date

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MAY, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Heating Degree Days
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
May-04
May-05
May-06
May-07
May-08
May-09
May-10
May-11
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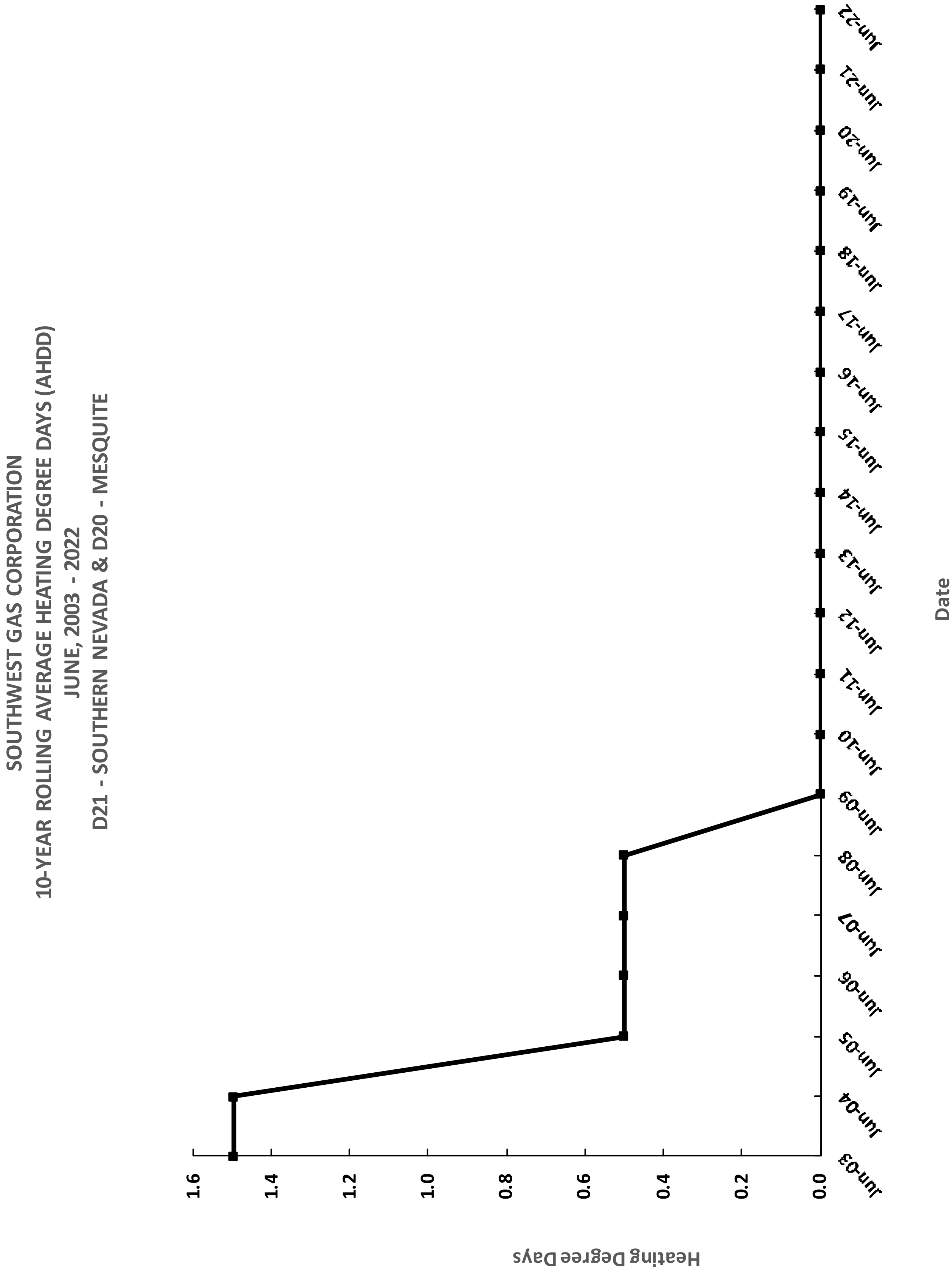
May-22
May-23
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Heating Degree Days
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
Date
Jun-03
Jun-04
Jun-05
Jun-06
Jun-07
Jun-08
Jun-09
Jun-10
Jun-11
Jun-12
Jun-13
Jun-14
Jun-15
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Jun-18
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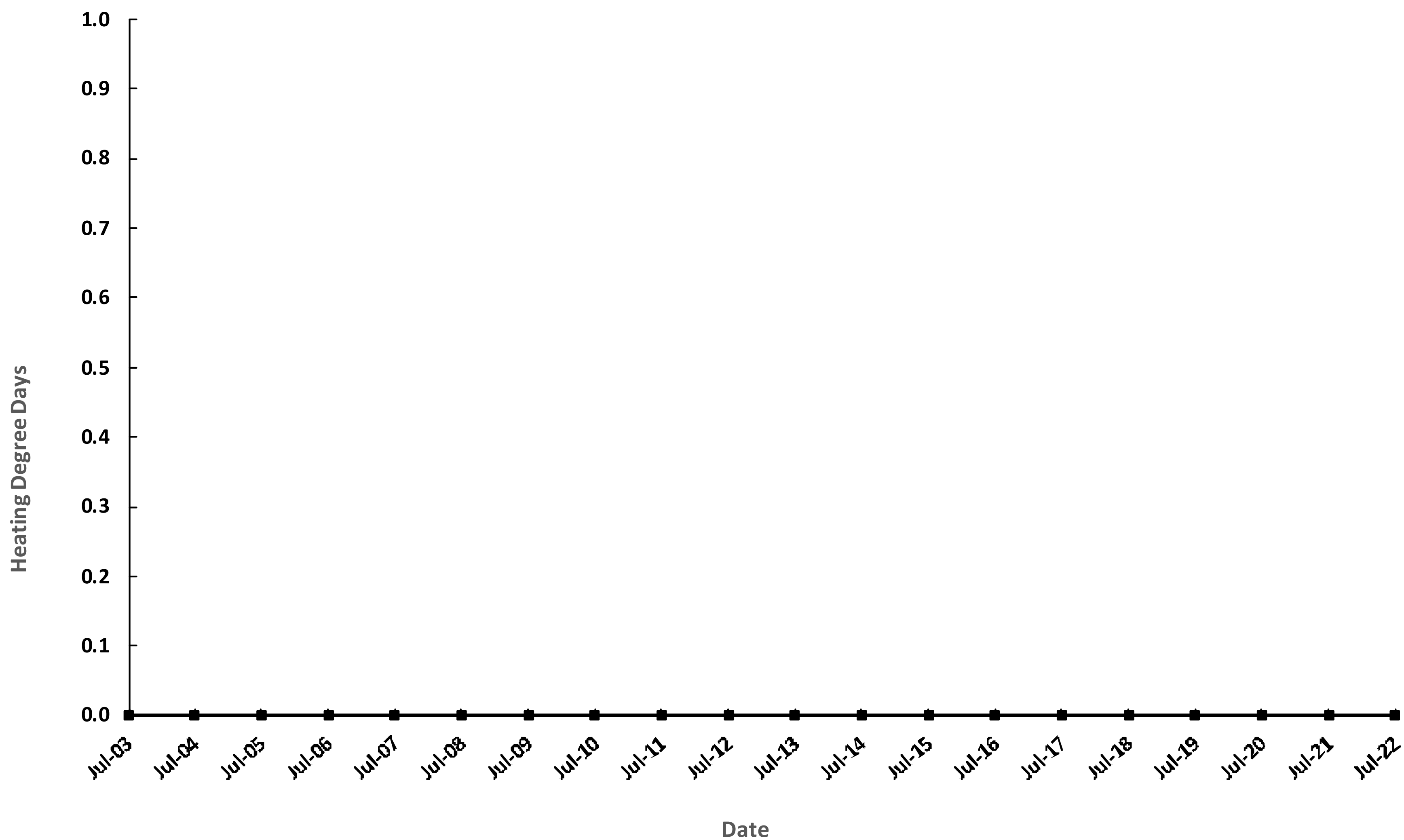
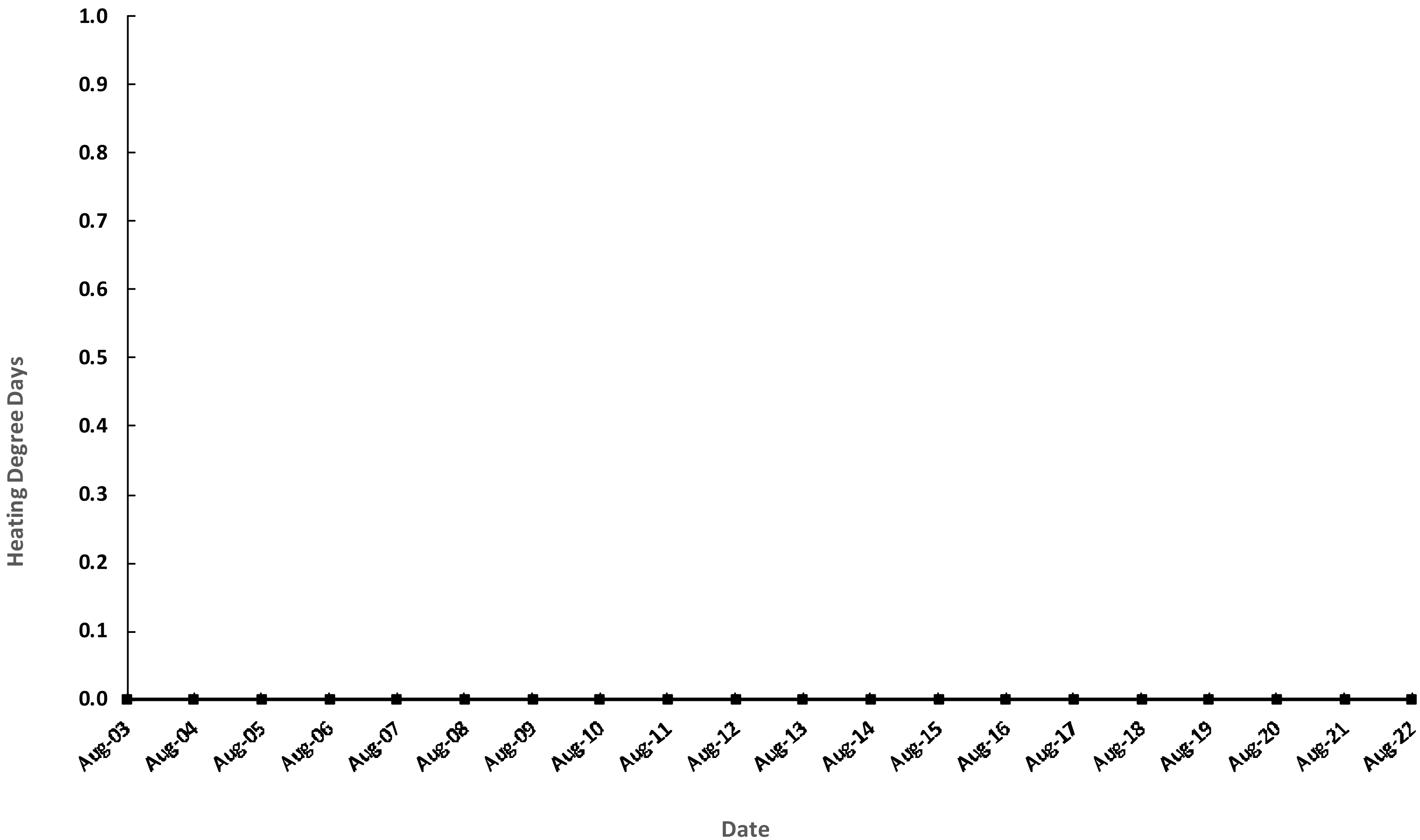
Jun-20
Jun-21
Jun-22

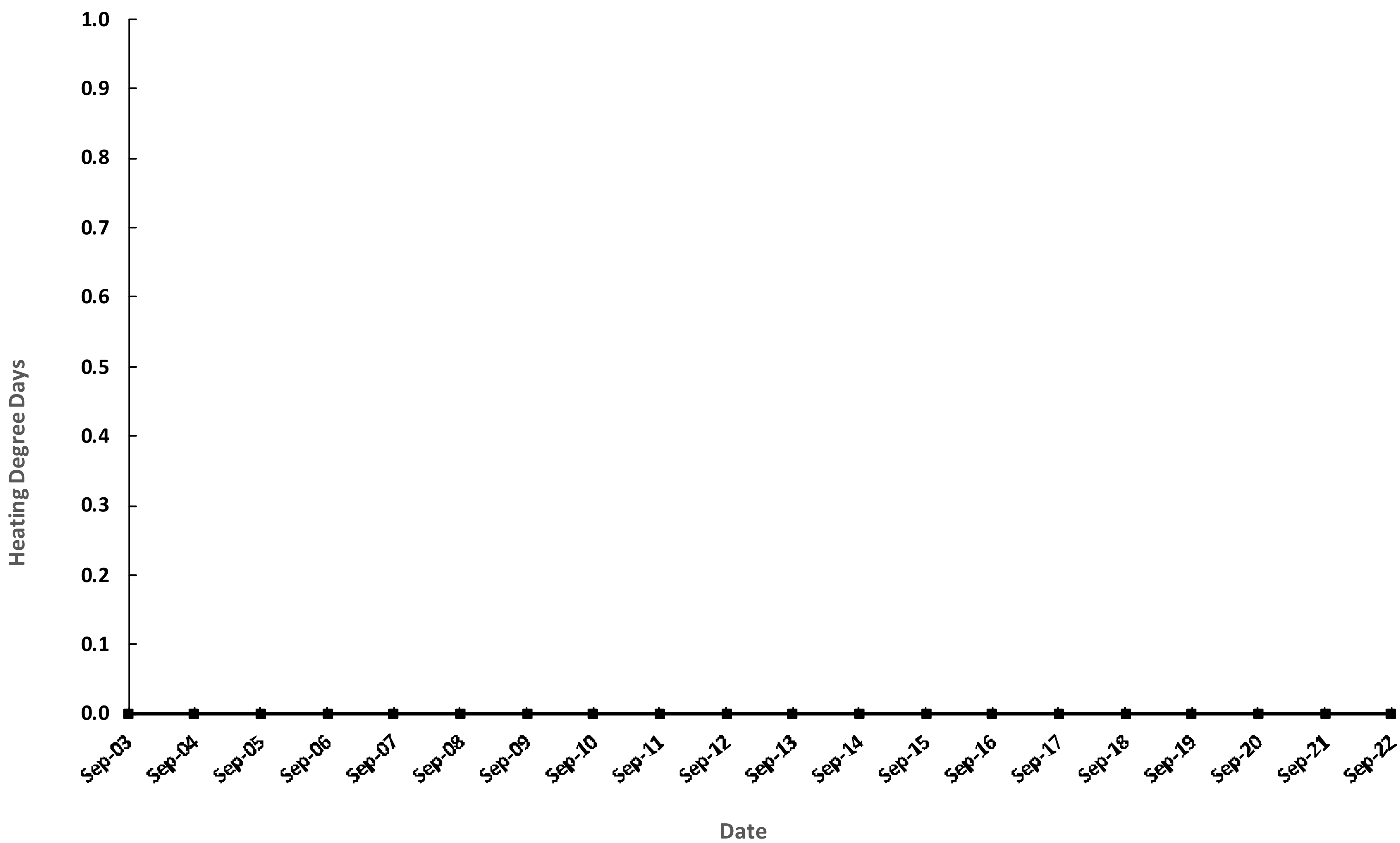
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE

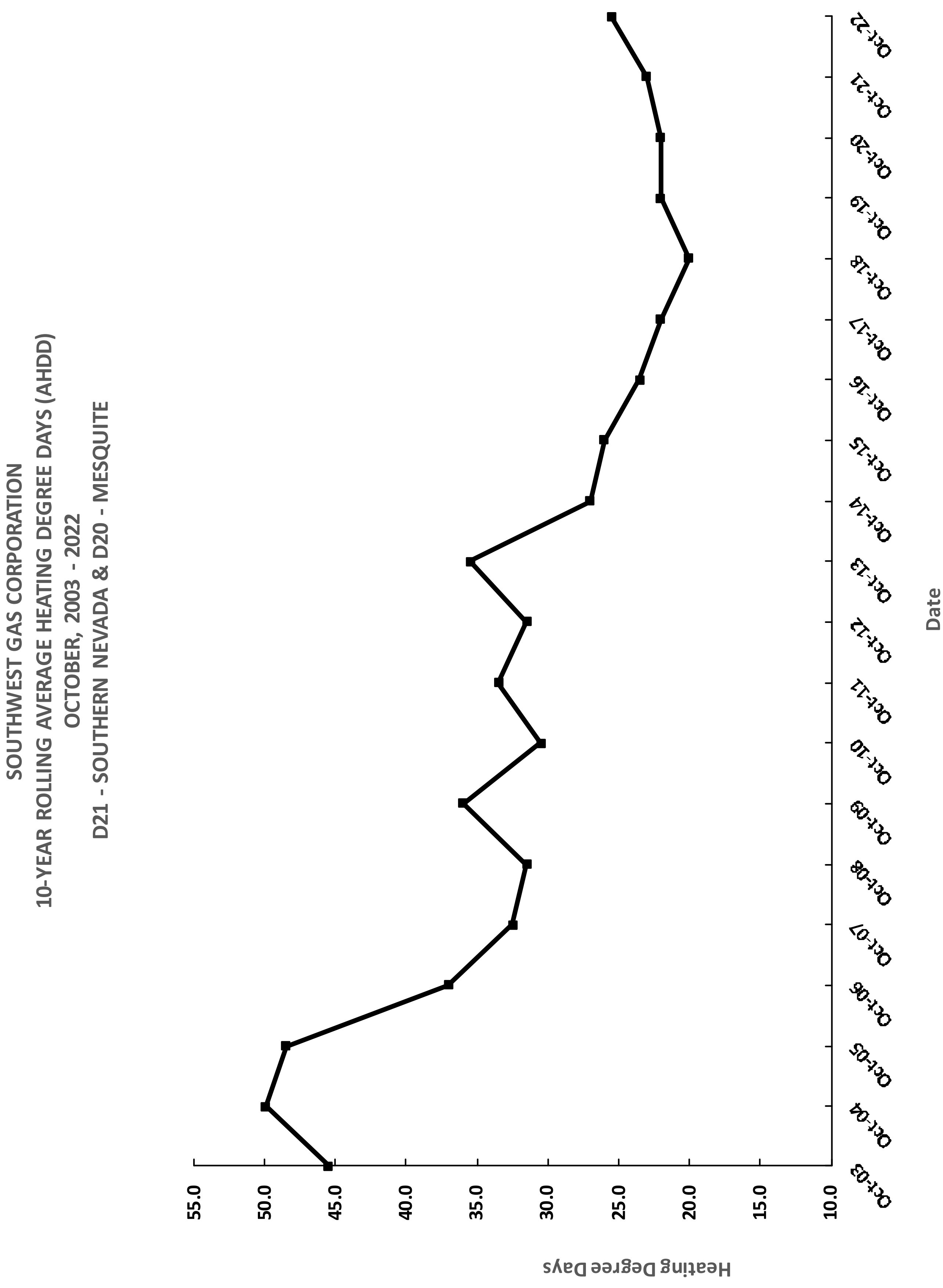


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Heating Degree Days
55.0
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
Oct-03
Oct-04
Oct-05
Oct-06
Oct-07
Oct-08
Oct-09
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Oct-11
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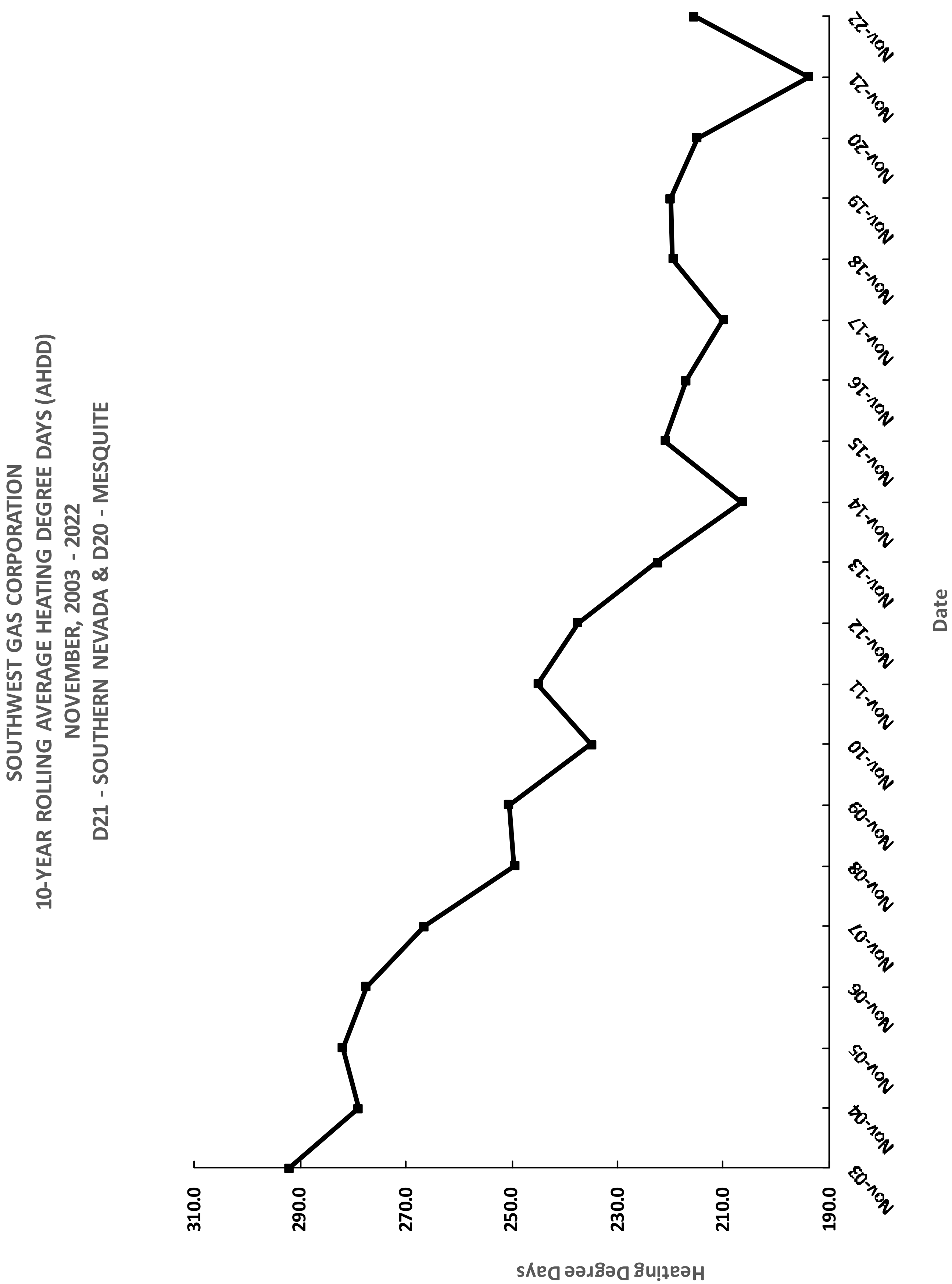
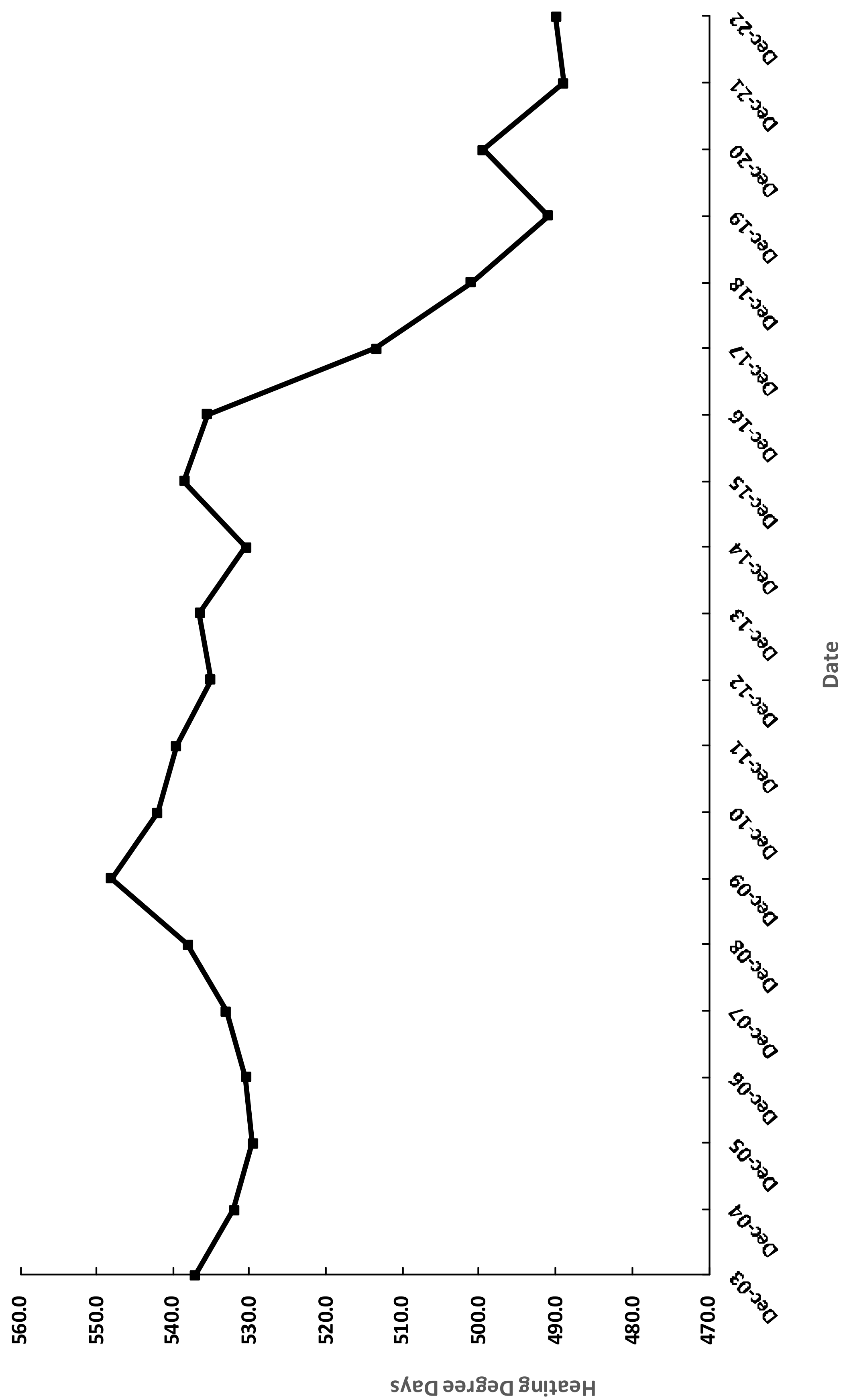
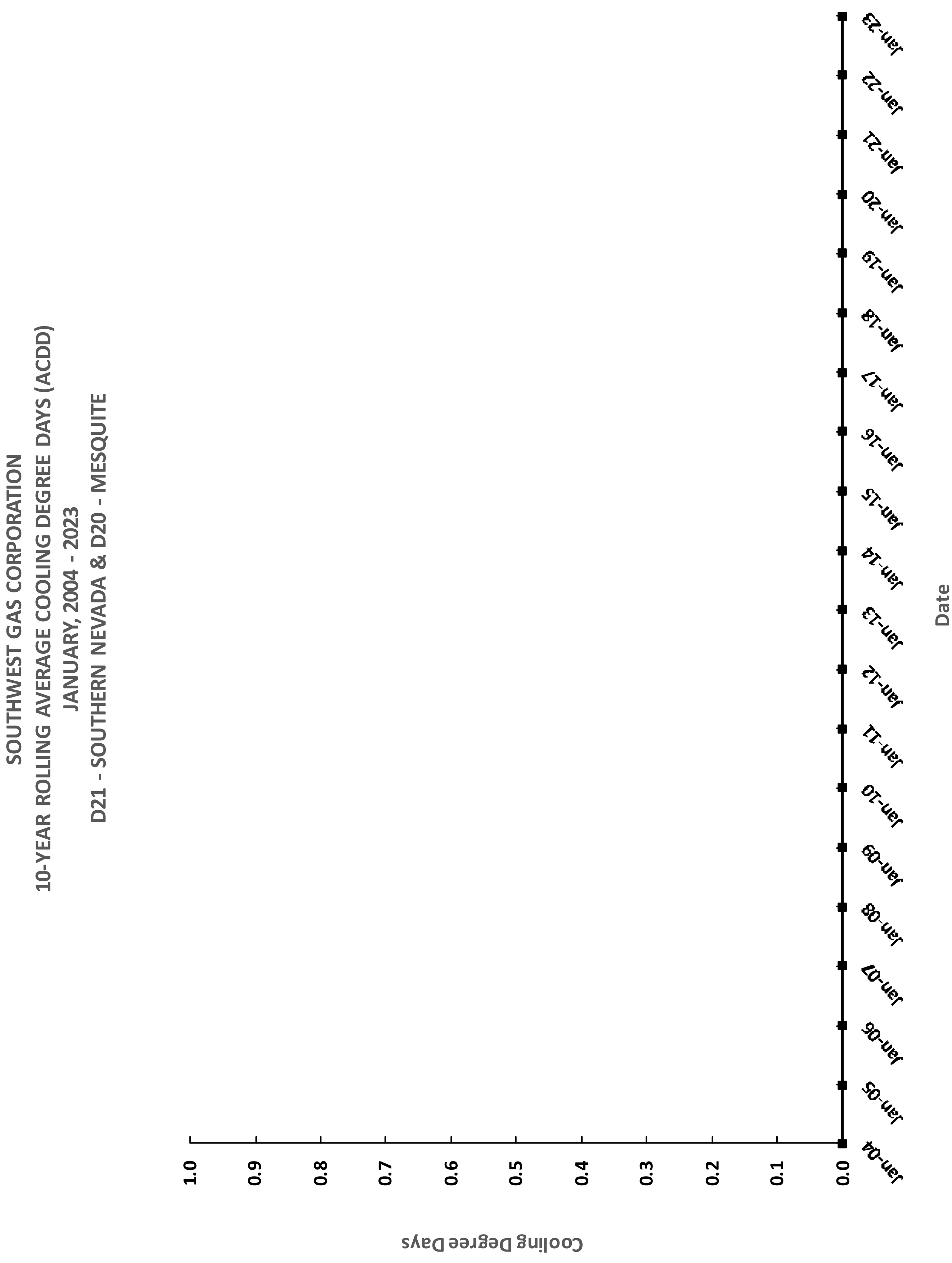
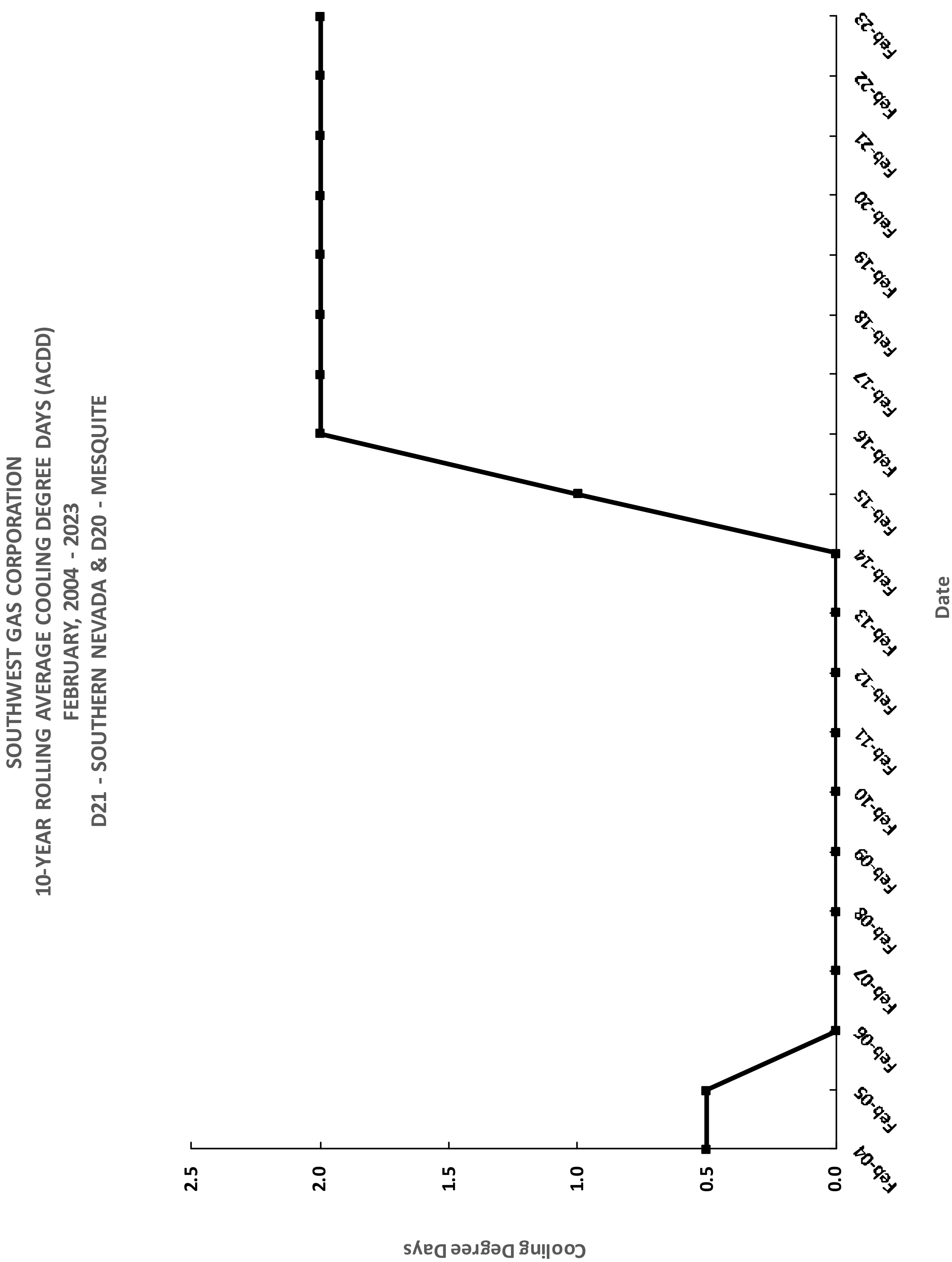
Oct-21
Oct-22
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Heating Degree Days
310.0
290.0
270.0
250.0
230.0
210.0
190.0
Nov-03
Nov-04
Nov-05
Nov-06
Nov-07
Nov-08
Nov-09
Nov-10
Nov-11
Nov-12
Nov-13
Nov-14
Nov-15
Nov-16
Nov-17
Nov-18
Nov-19
Nov-20
Nov-21
Nov-22
Date

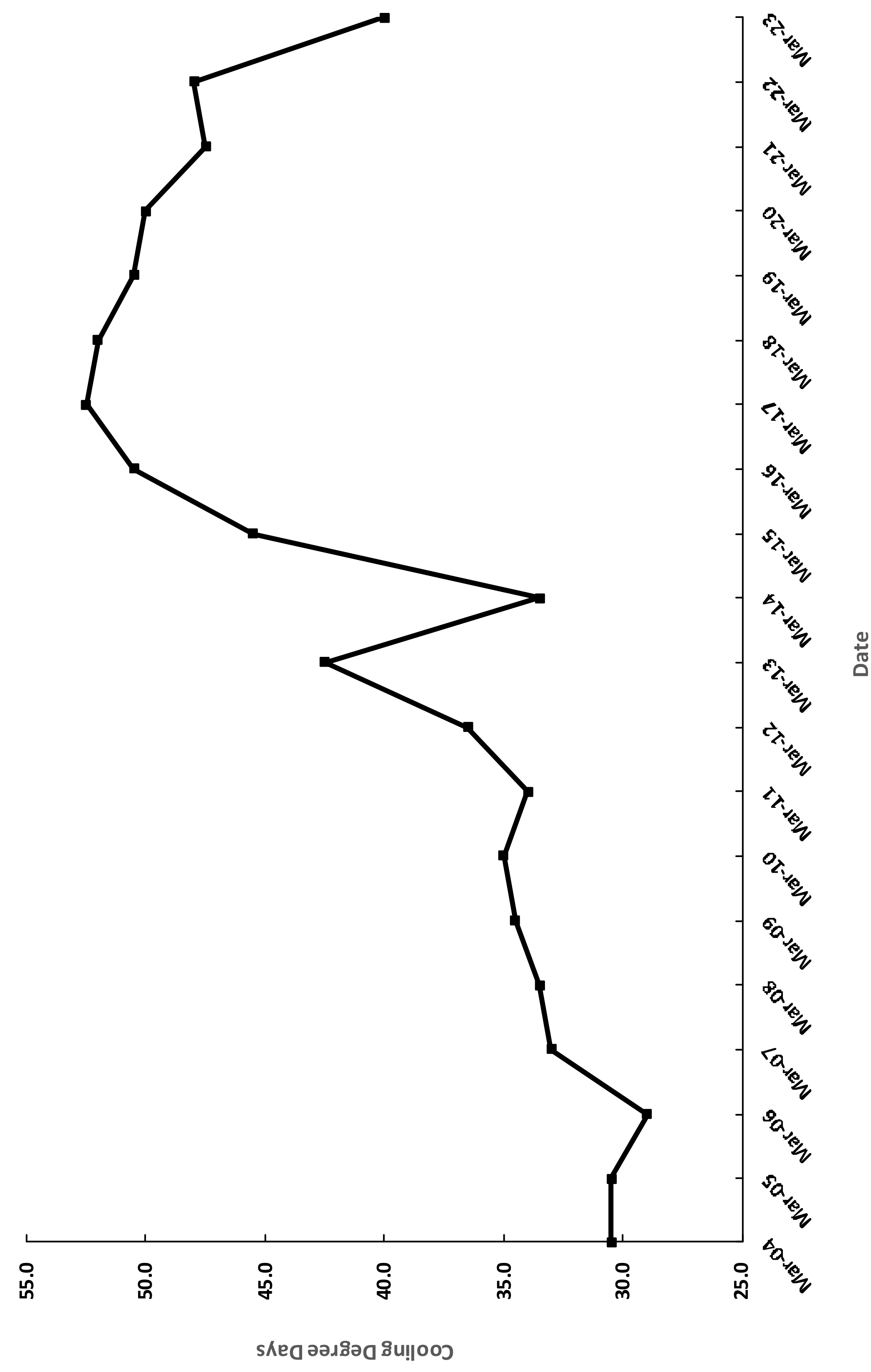
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
DECEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE

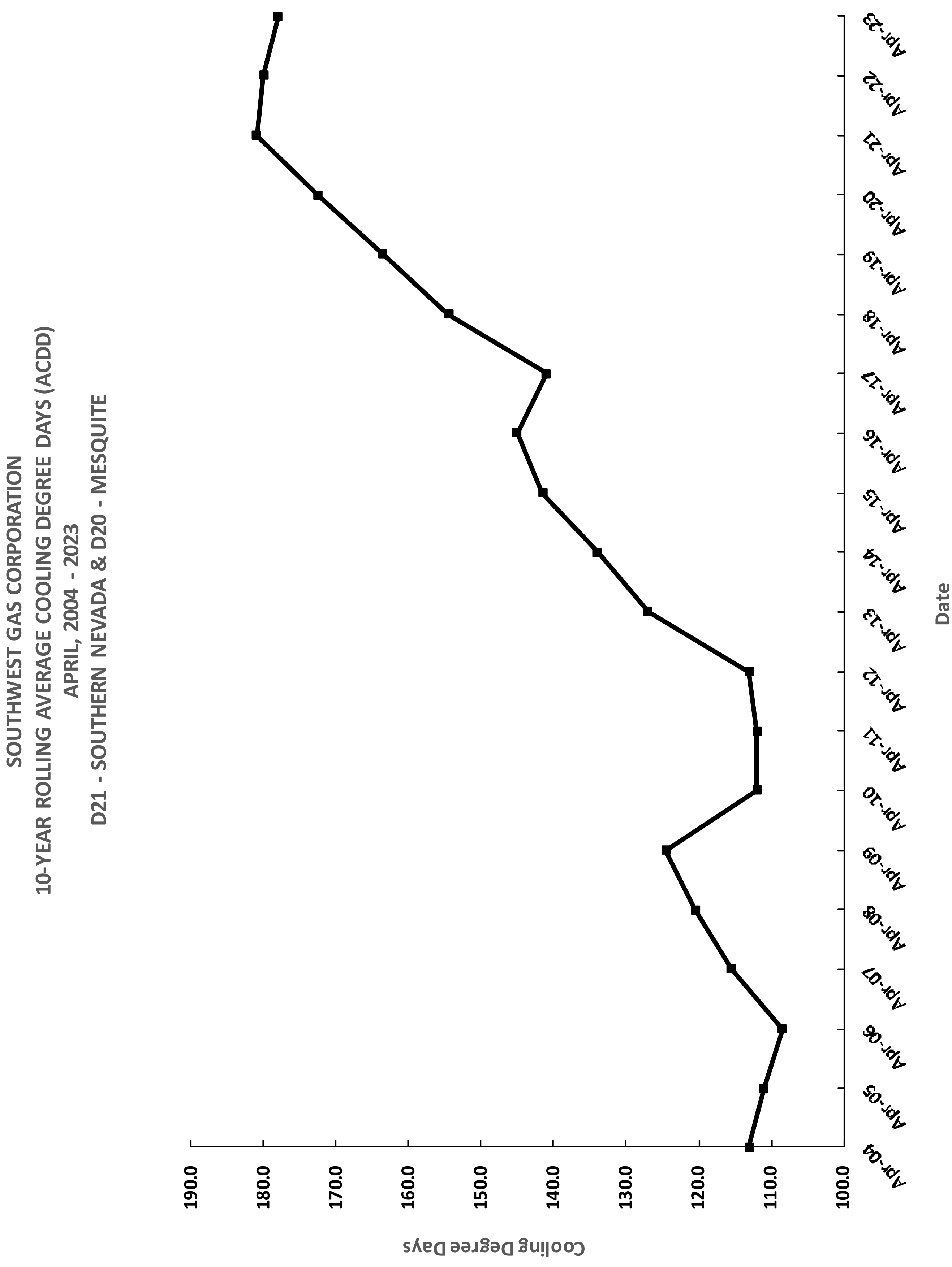



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JANUARY, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Cooling Degree Days
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Date

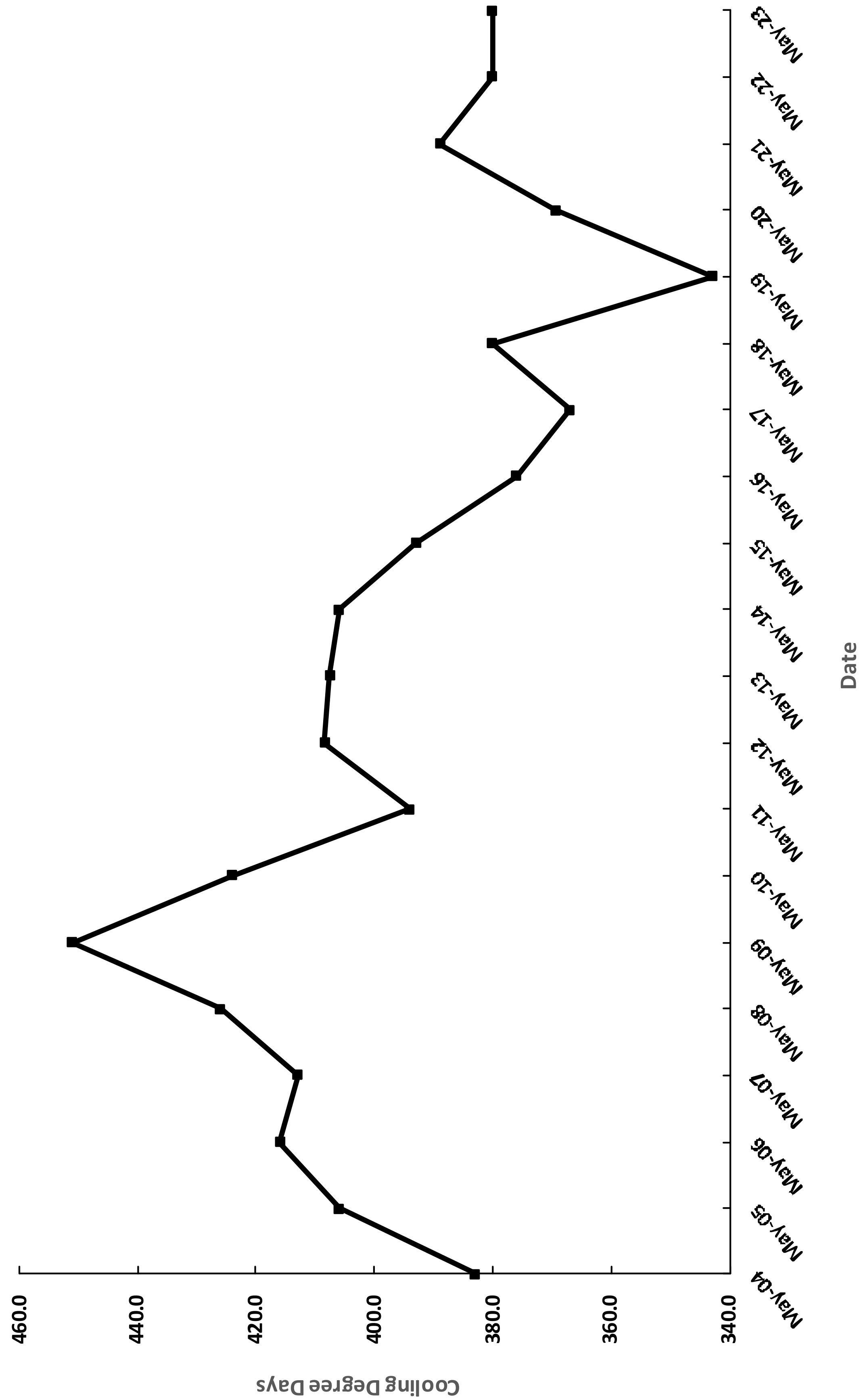

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
FEBRUARY, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Cooling Degree Days
0.0
0.5
1.0
1.5
2.0
2.5
Date
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
Feb-13
Feb-14
Feb-15
Feb-16
Feb-17
Feb-18
Feb-19
Feb-20
Feb-21
Feb-22
Feb-23

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
MARCH, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE

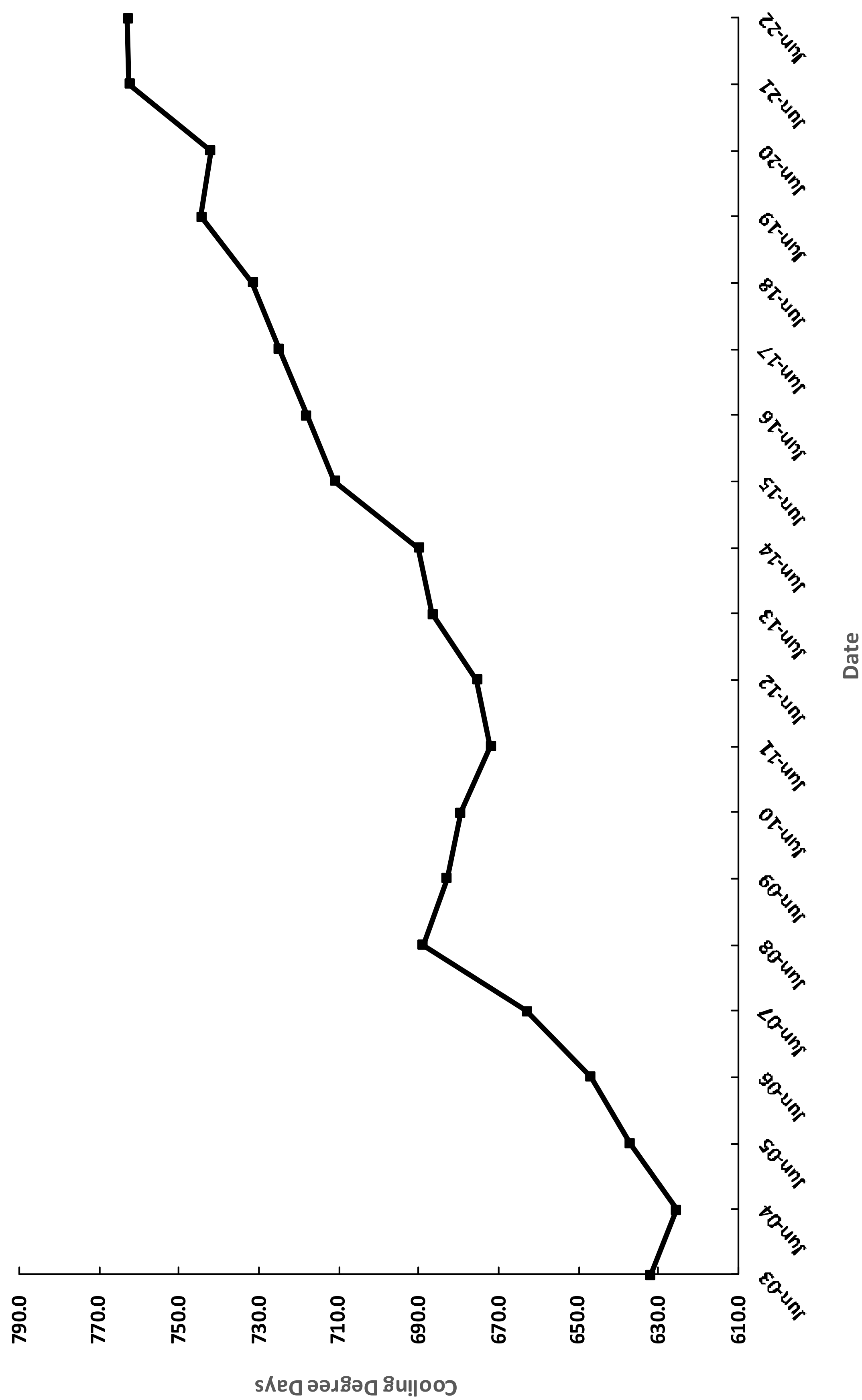



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
APRIL, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Cooling Degree Days
190.0
180.0
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23
Date

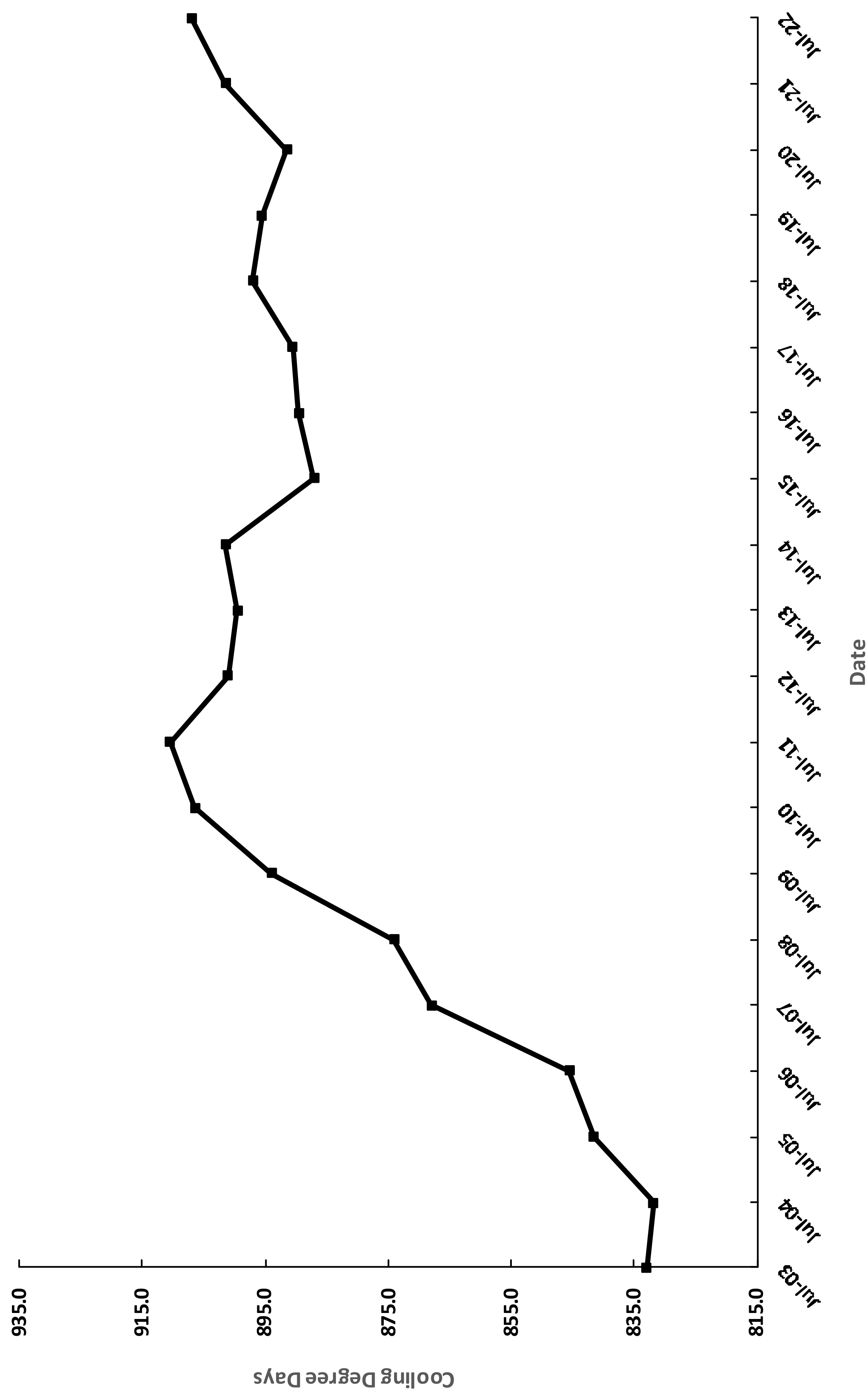
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
MAY, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE



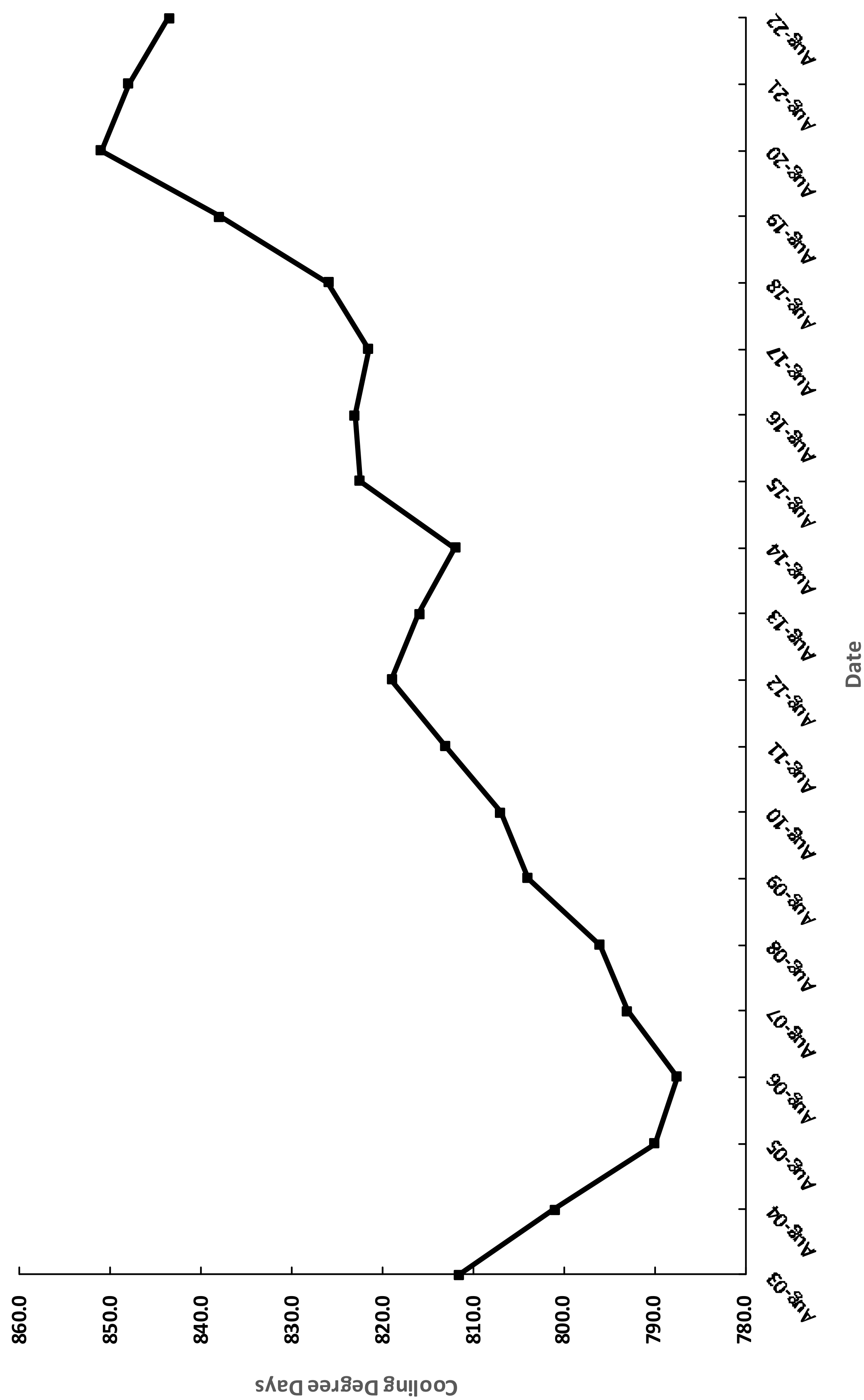
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JUNE, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE

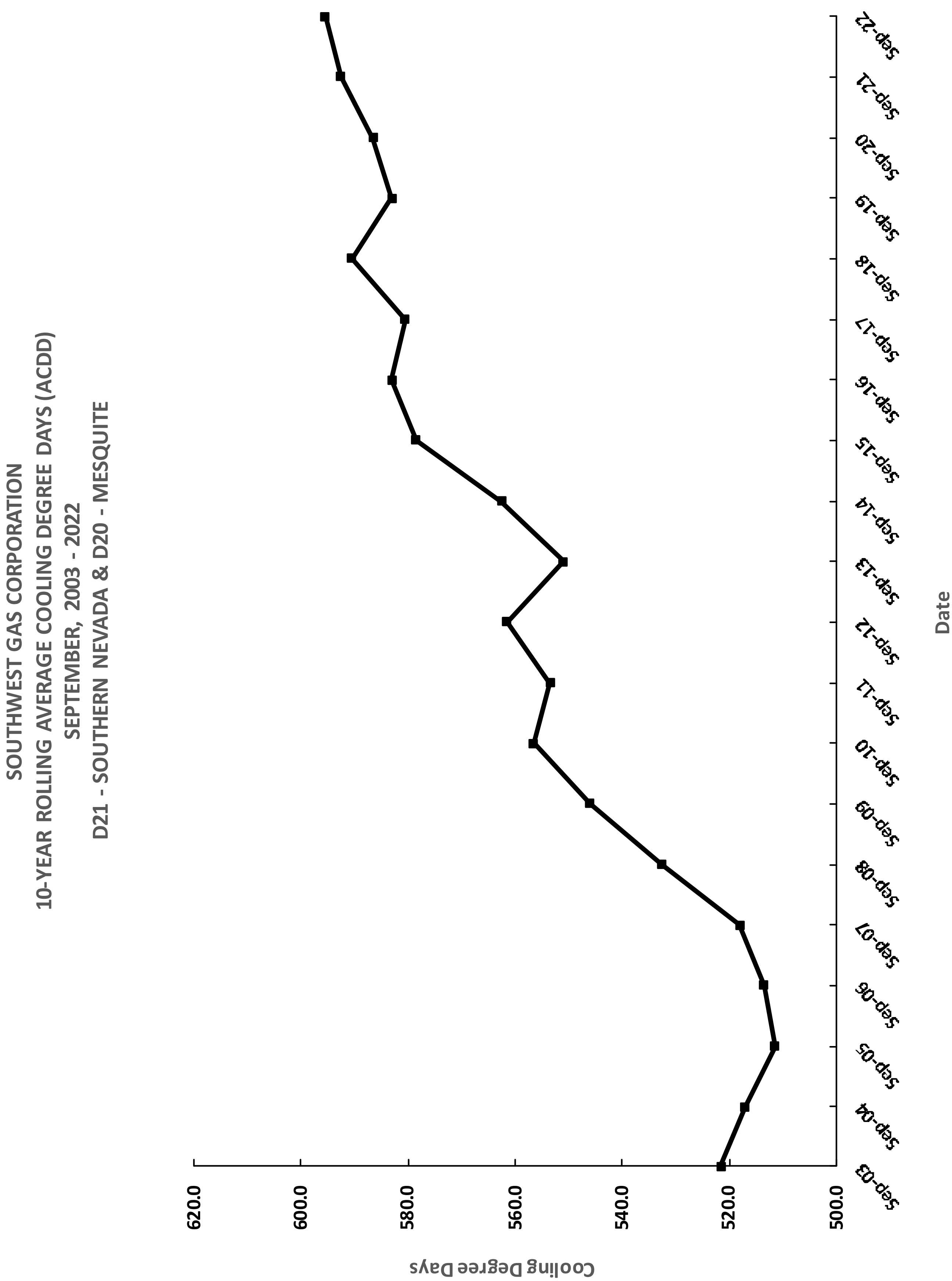


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JULY, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
AUGUST, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
SEPTEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Cooling Degree Days
620.0
600.0
580.0
560.0
540.0
520.0
500.0
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
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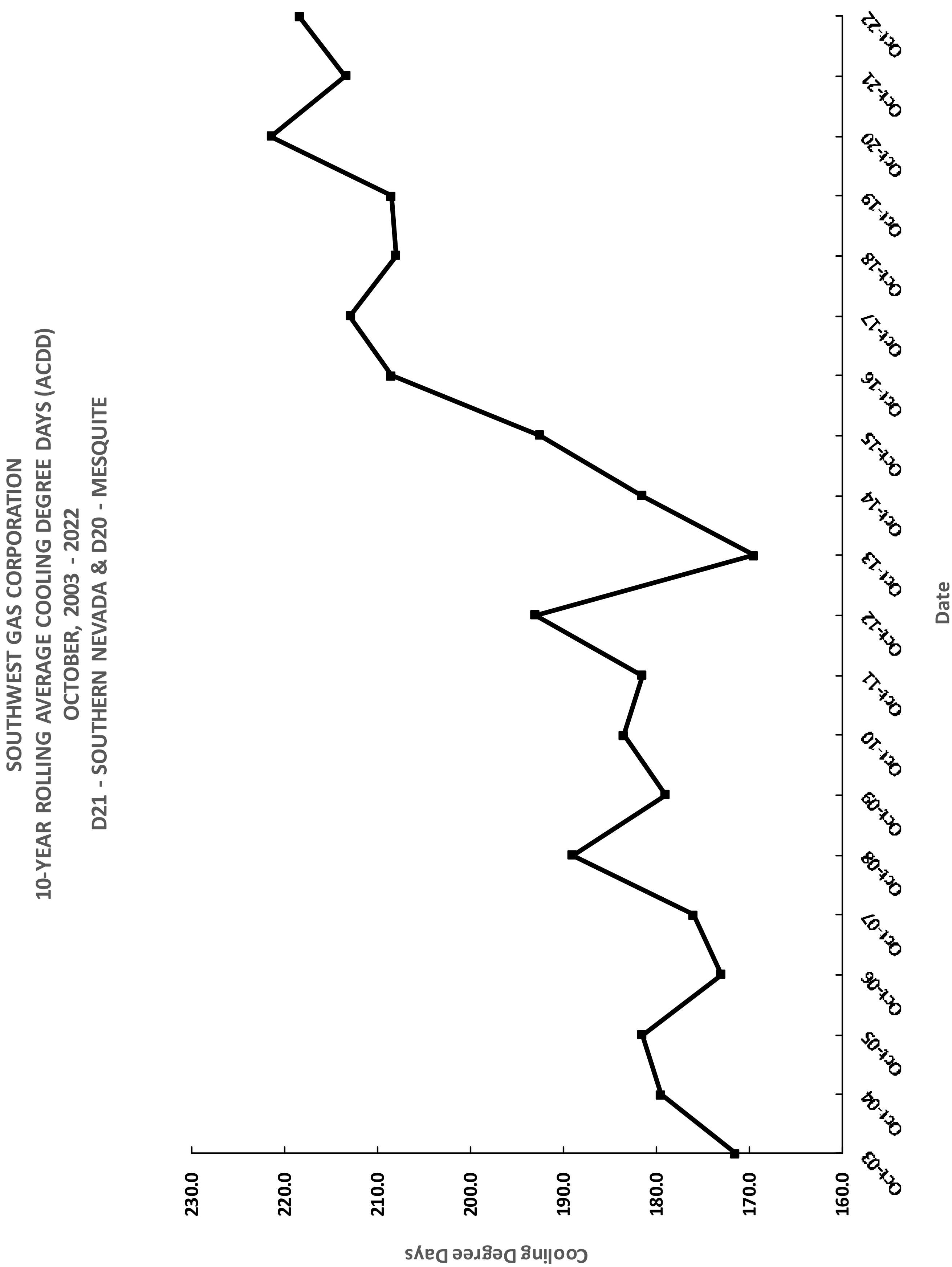
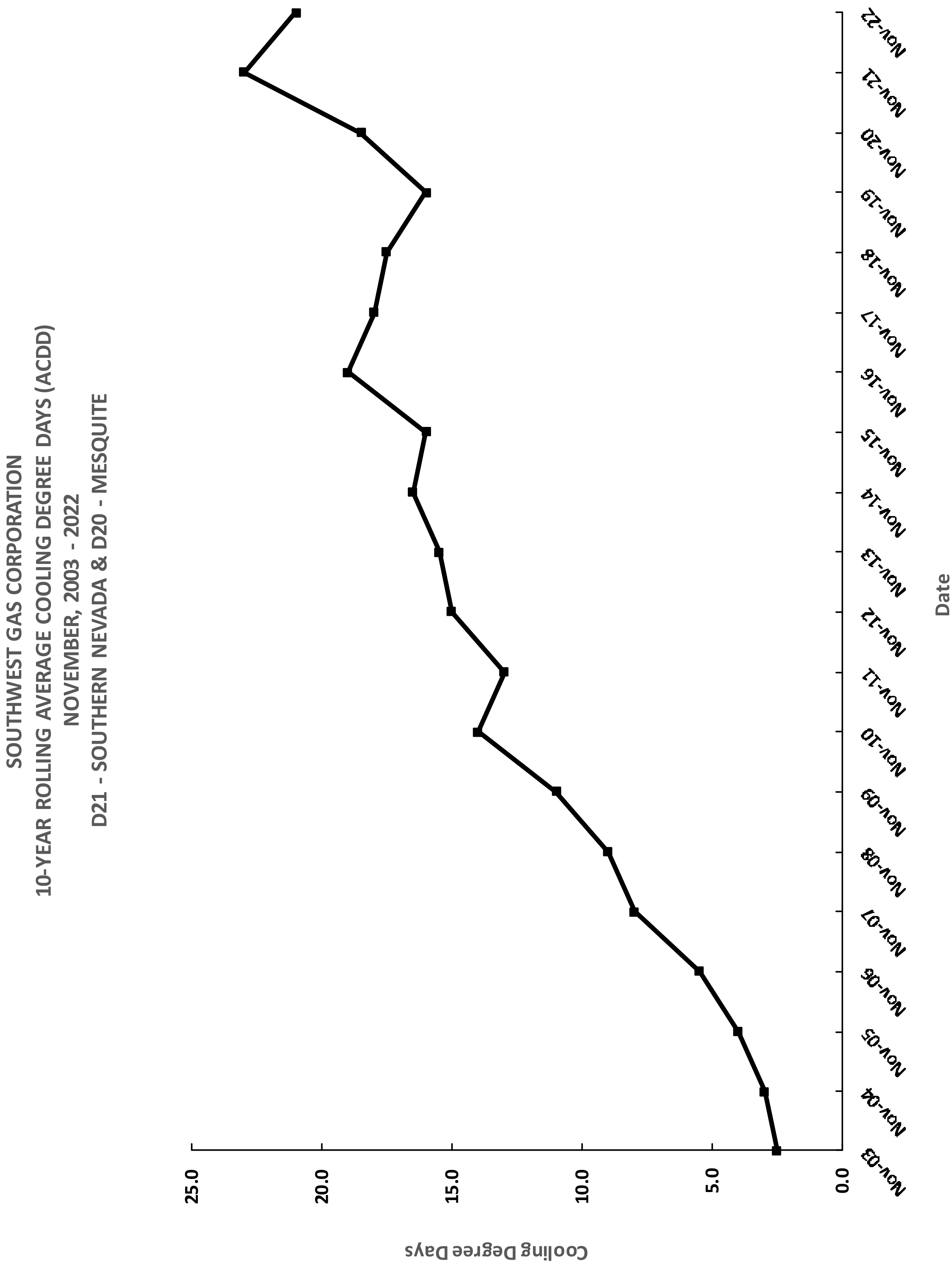
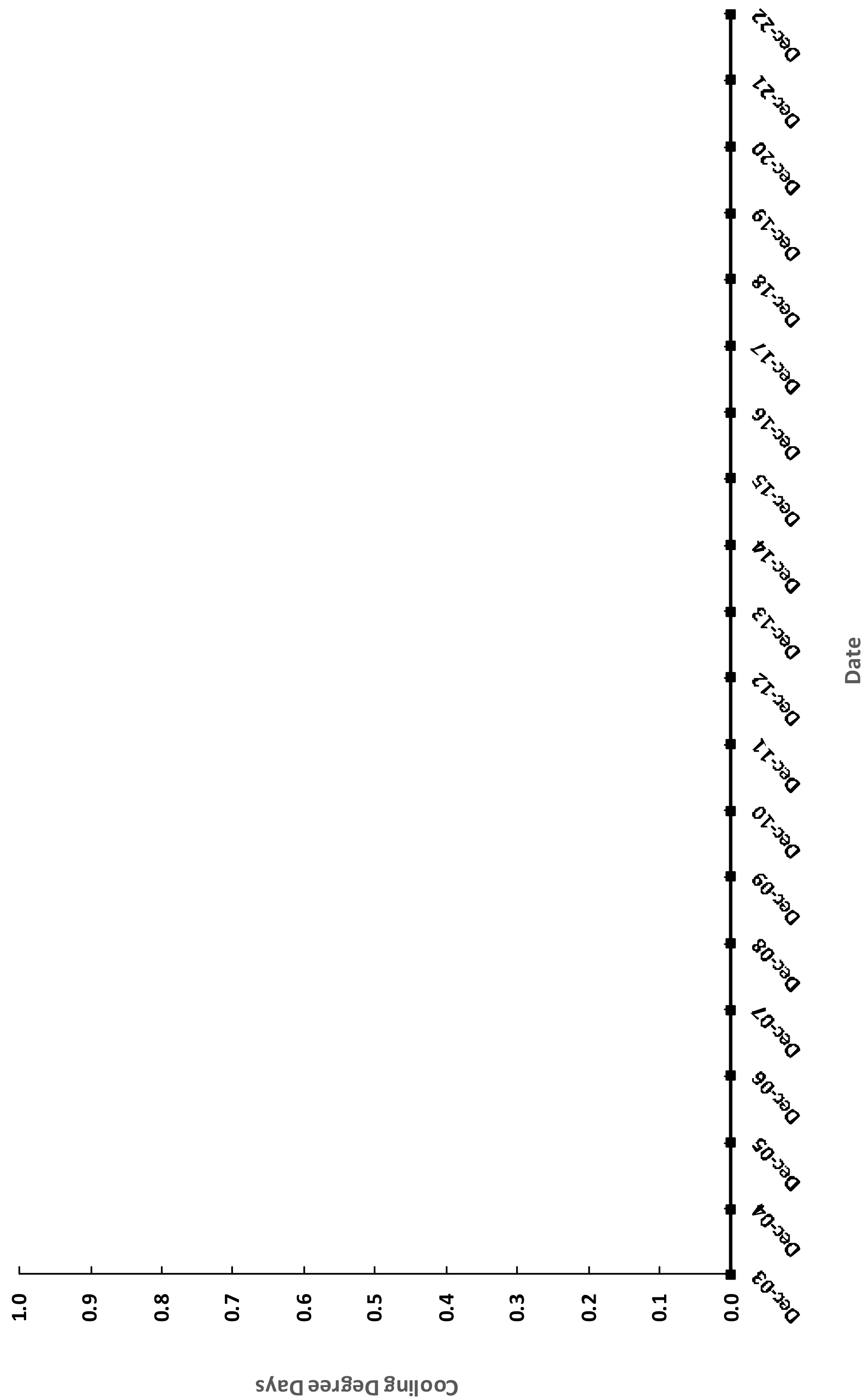
Sep-19
Sep-20
Sep-21
Sep-22
Date

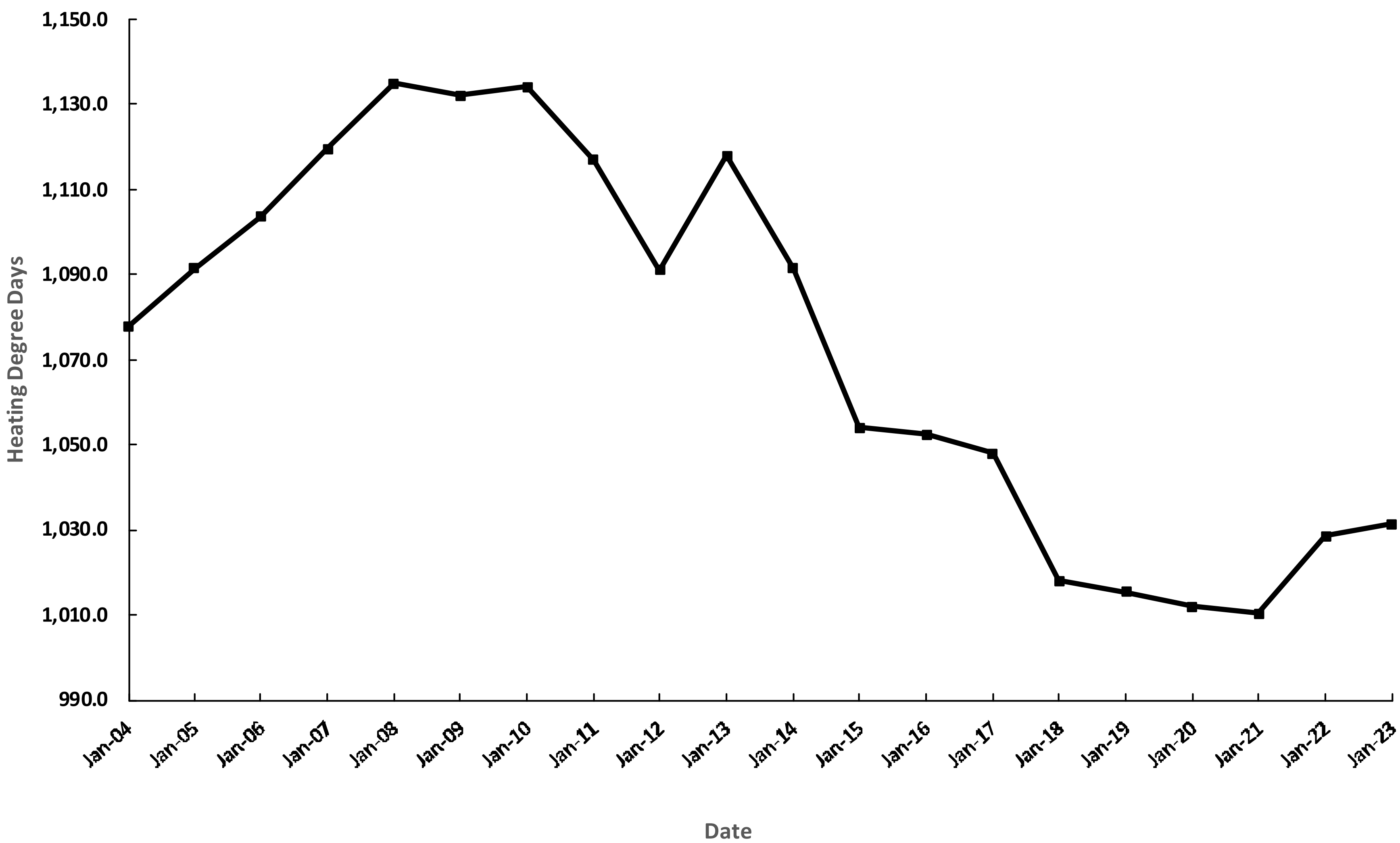

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
OCTOBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Cooling Degree Days
230.0
220.0
210.0
200.0
190.0
180.0
170.0
160.0
Date
Oct-03
Oct-04
Oct-05
Oct-06
Oct-07
Oct-08
Oct-09
Oct-10
Oct-11
Oct-12
Oct-13
Oct-14
Oct-15
Oct-16
Oct-17
Oct-18
Oct-19
Oct-20
Oct-21
Oct-22


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
NOVEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
Cooling Degree Days
0.0
5.0
10.0
15.0
20.0
25.0
Nov-03
Nov-04
Nov-05
Nov-06
Nov-07
Nov-08
Nov-09
Nov-10
Nov-11
Nov-12
Nov-13
Nov-14
Nov-15
Nov-16
Nov-17
Nov-18
Nov-19
Nov-20
Nov-21
Nov-22
Date

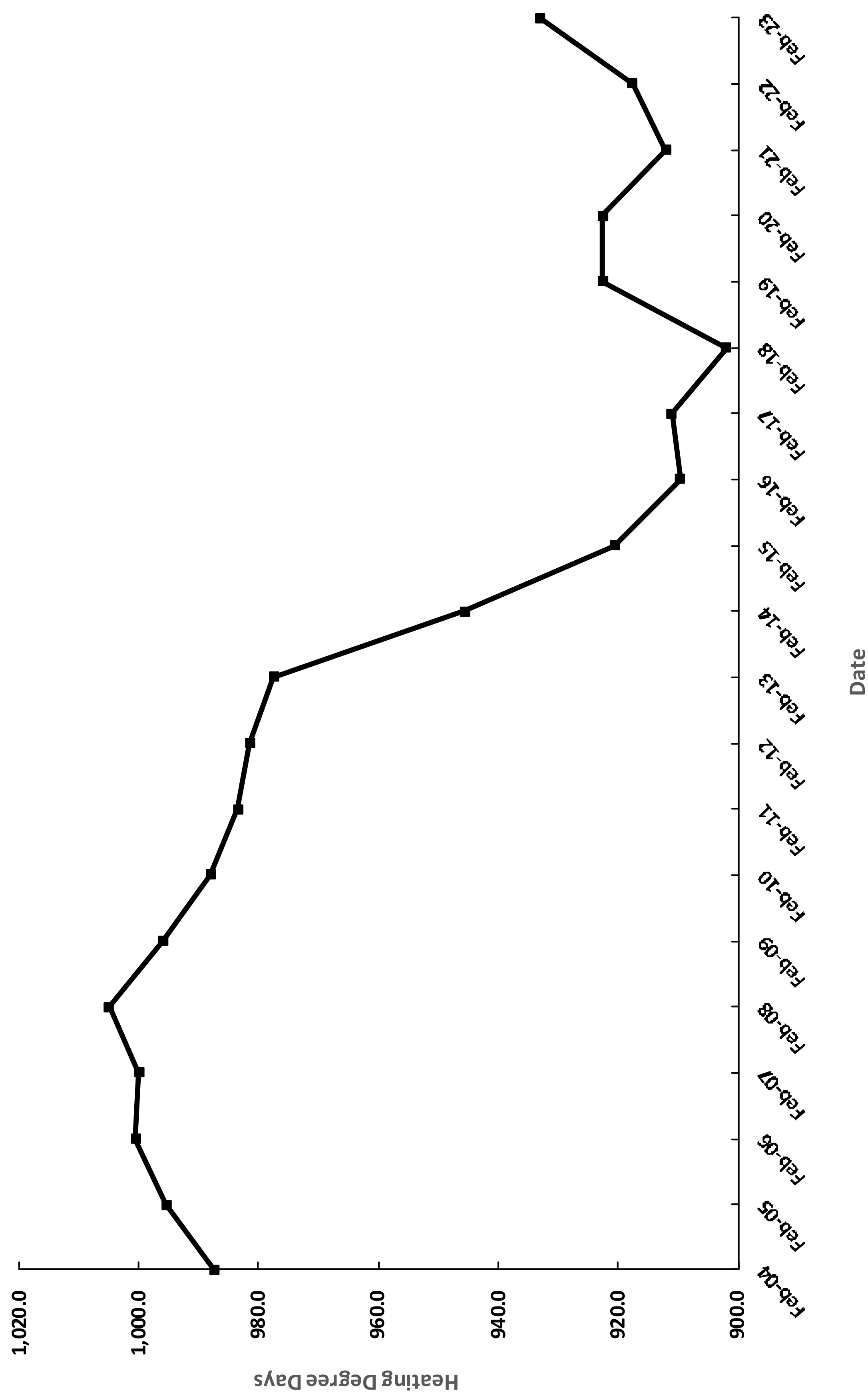
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
DECEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE

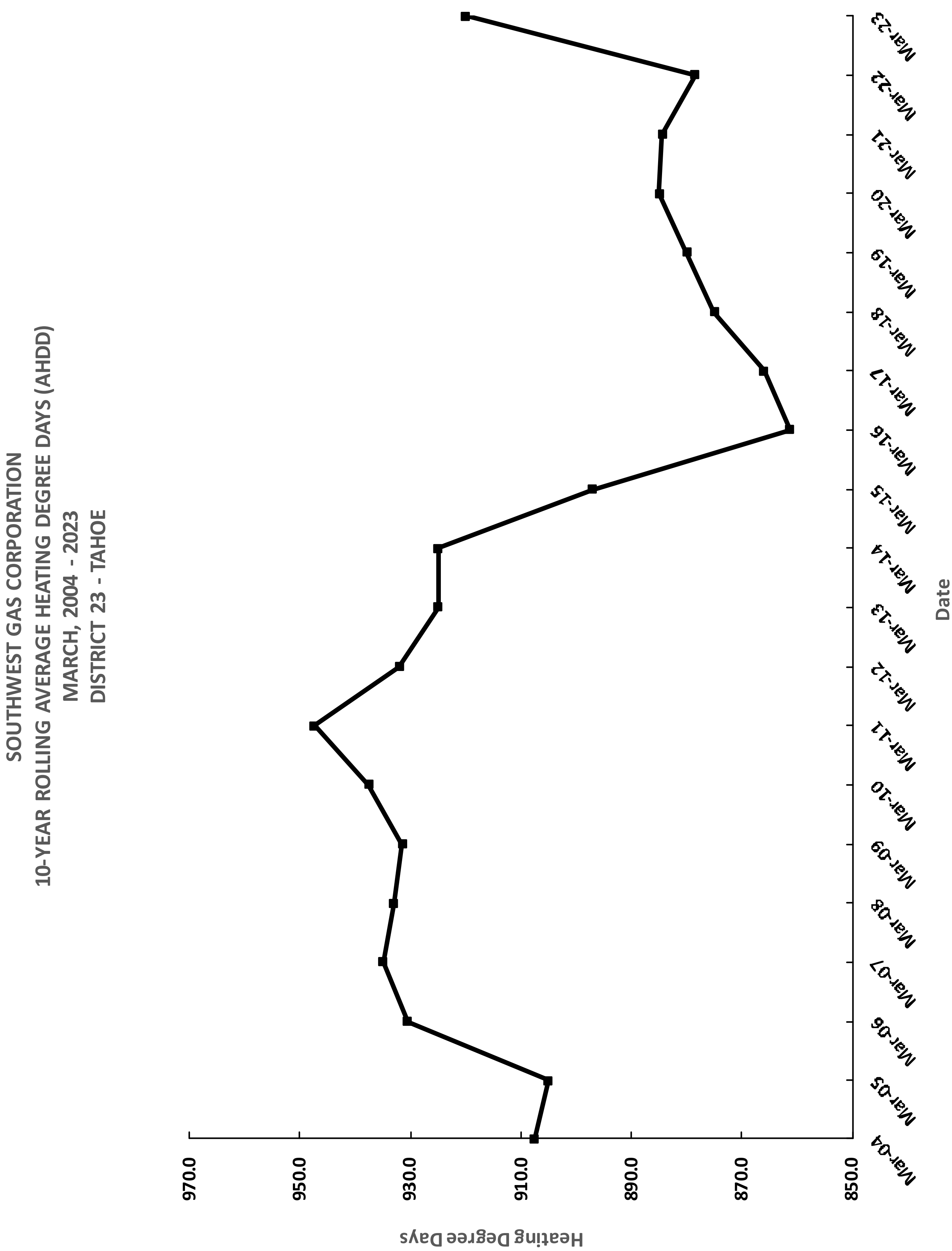


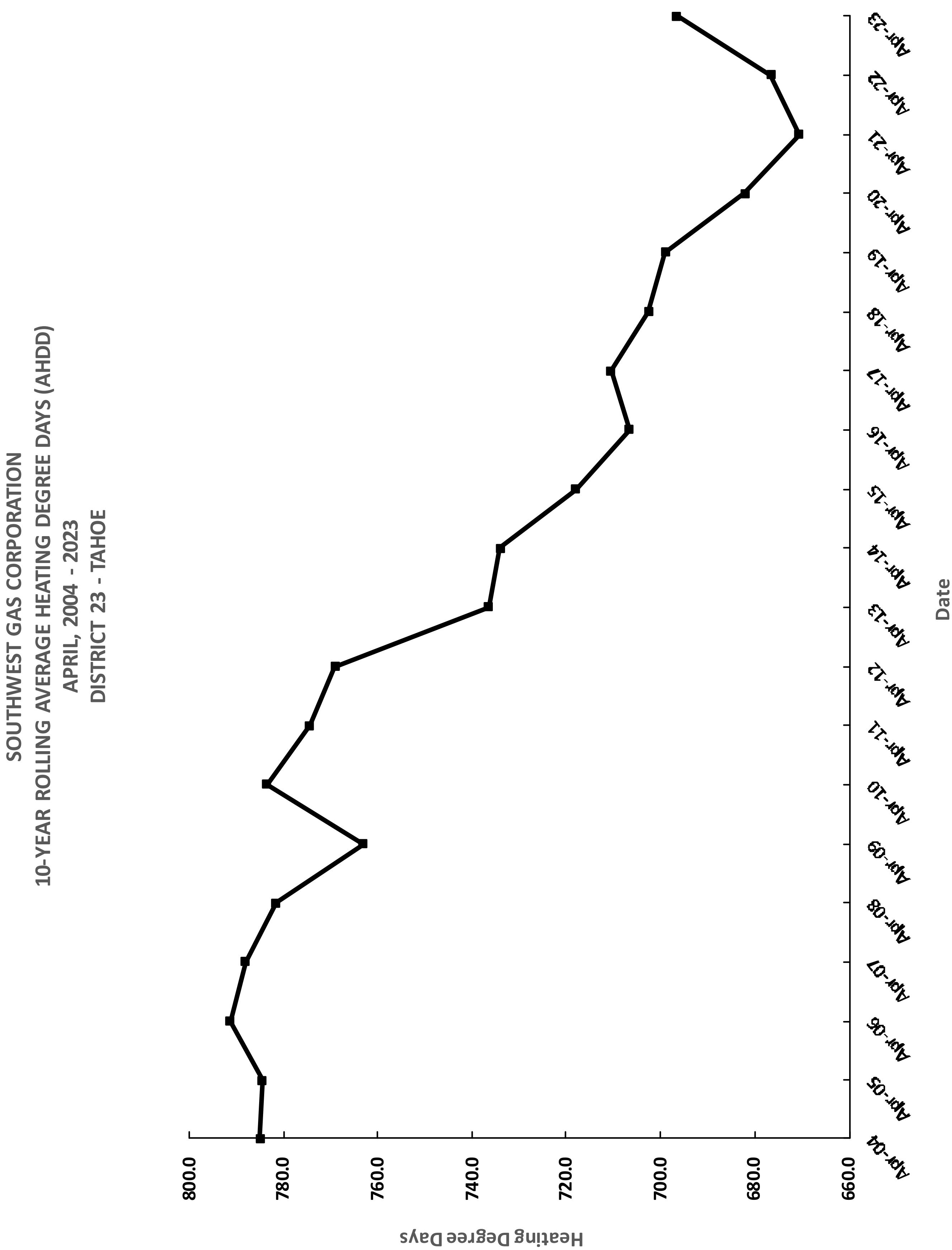
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JANUARY, 2004 - 2023
DISTRICT 23 - TAHOE



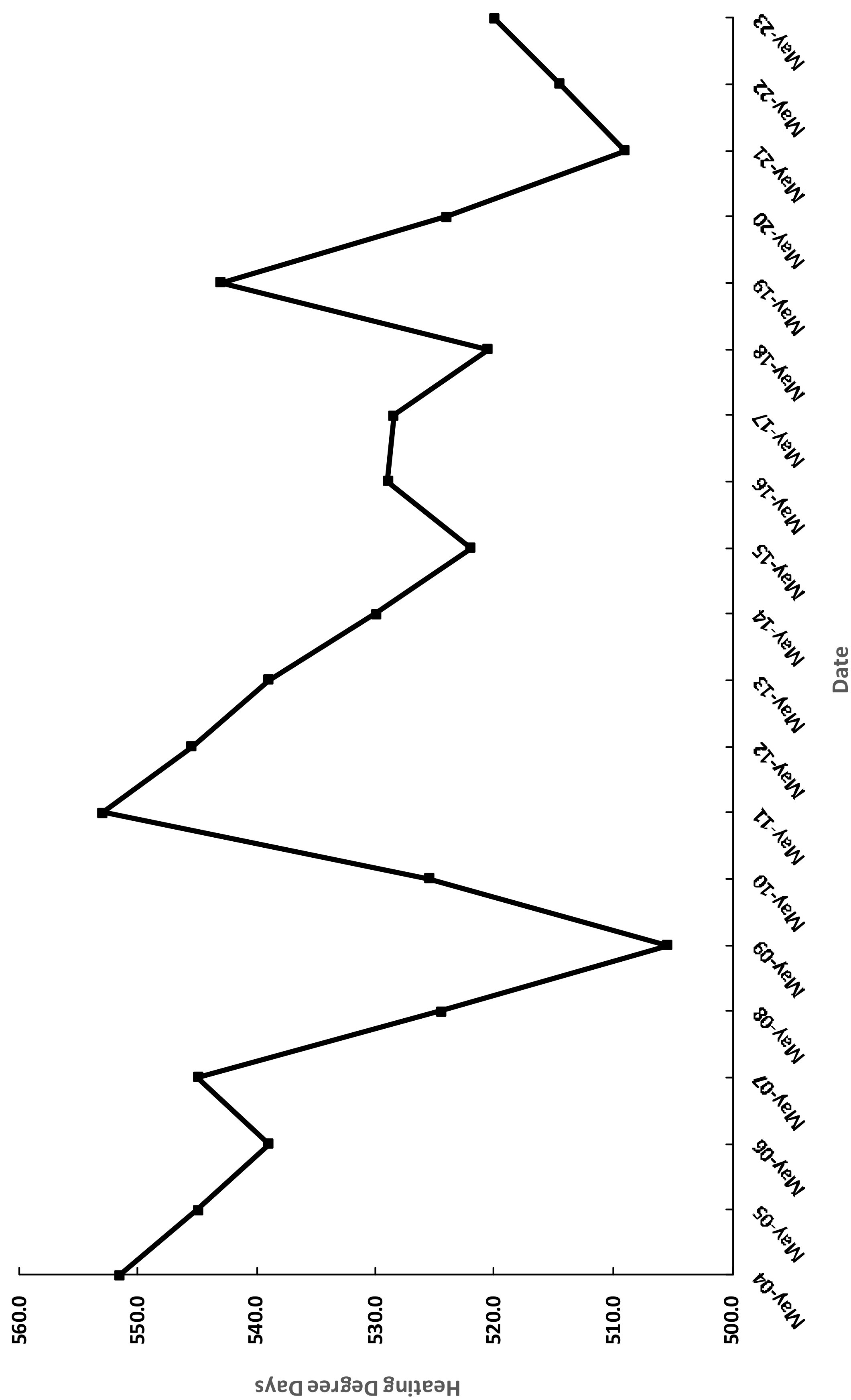
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
DISTRICT 23 - TAHOE



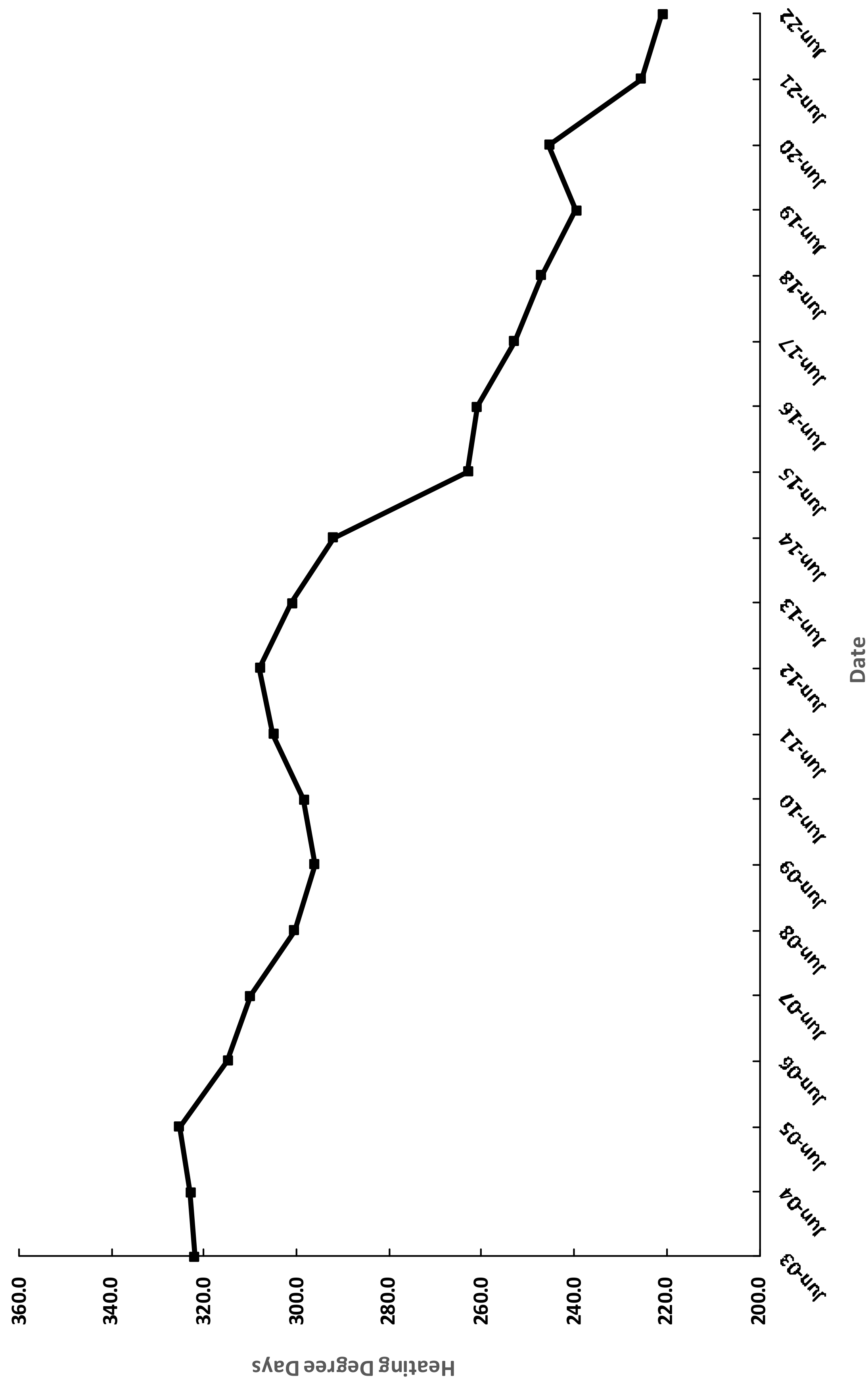

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
DISTRICT 23 - TAHOE
Heating Degree Days
970.0
950.0
930.0
910.0
890.0
870.0
850.0
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Mar-23
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
DISTRICT 23 - TAHOE
Heating Degree Days
800.0
780.0
760.0
740.0
720.0
700.0
680.0
660.0
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23
Date

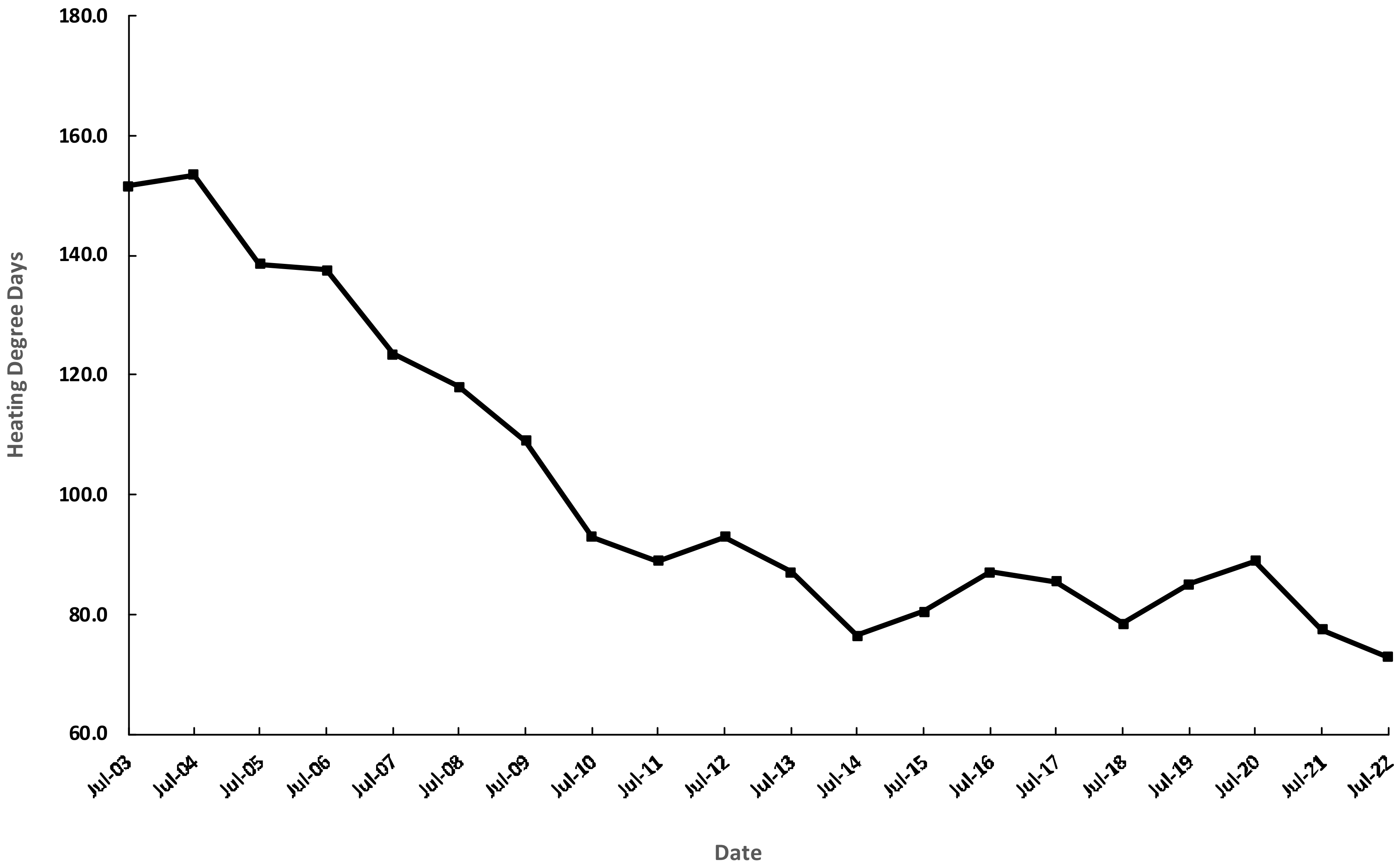
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MAY, 2004 - 2023
DISTRICT 23 - TAHOE

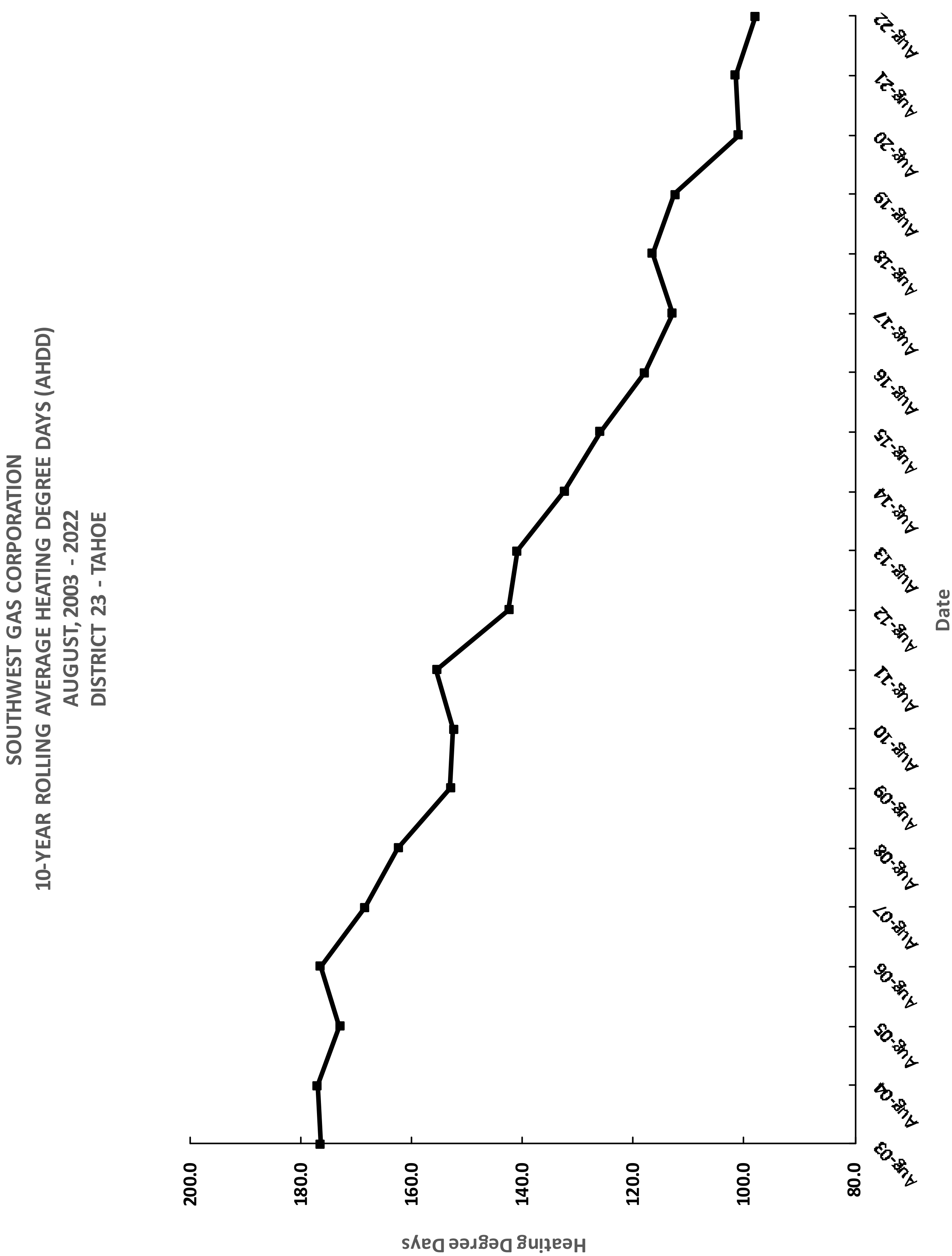


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
DISTRICT 23 - TAHOE

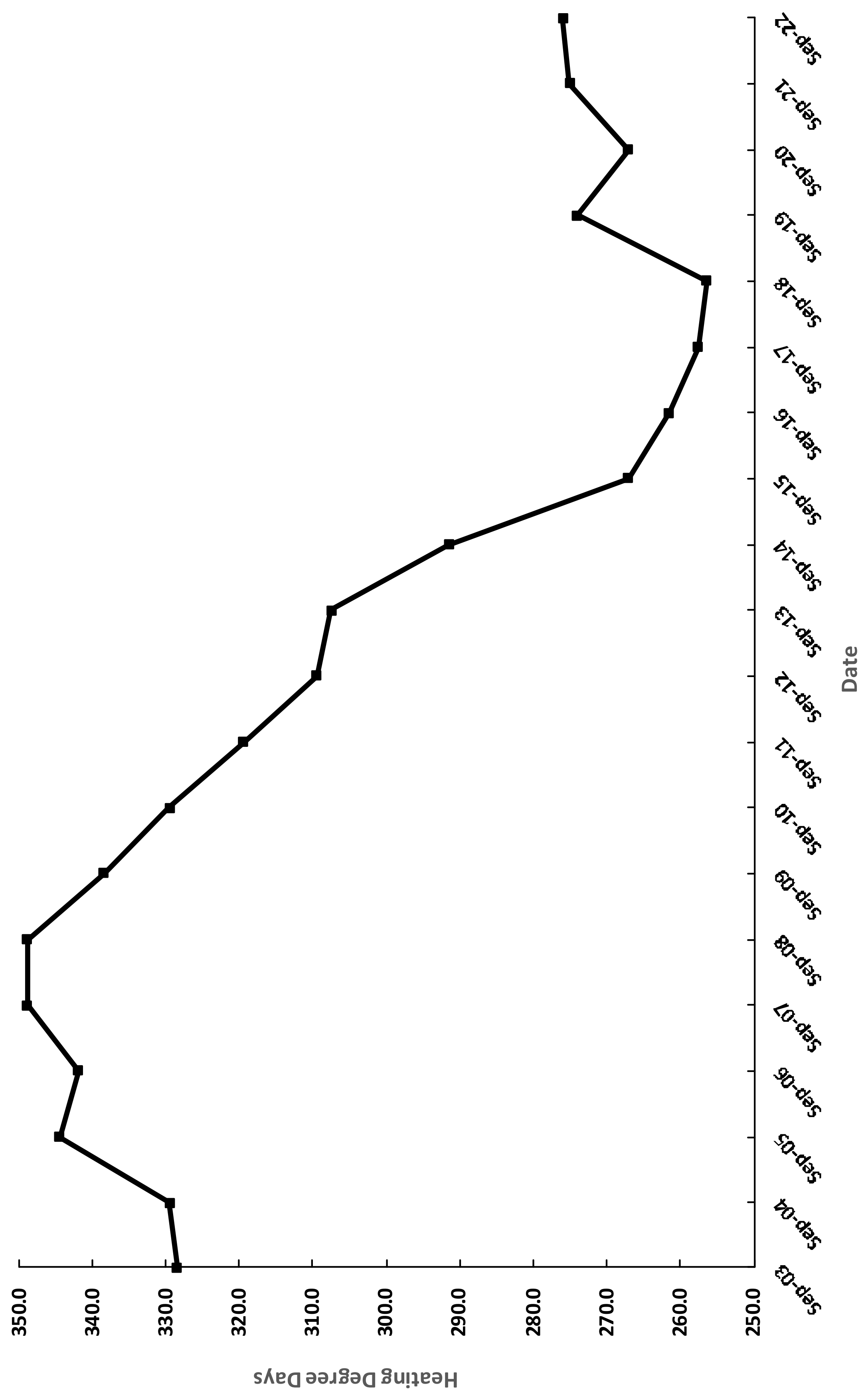


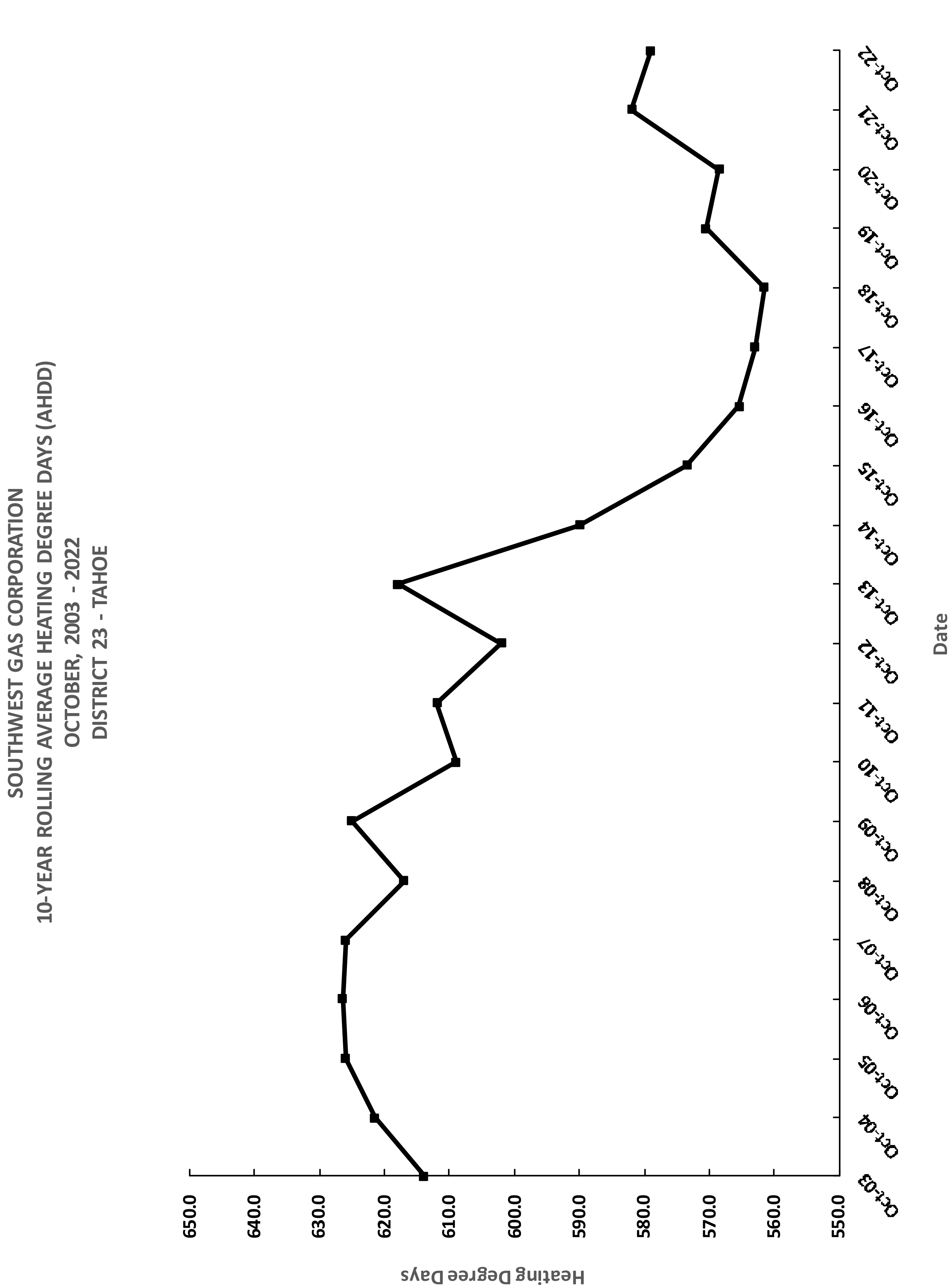
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
DISTRICT 23 - TAHOE



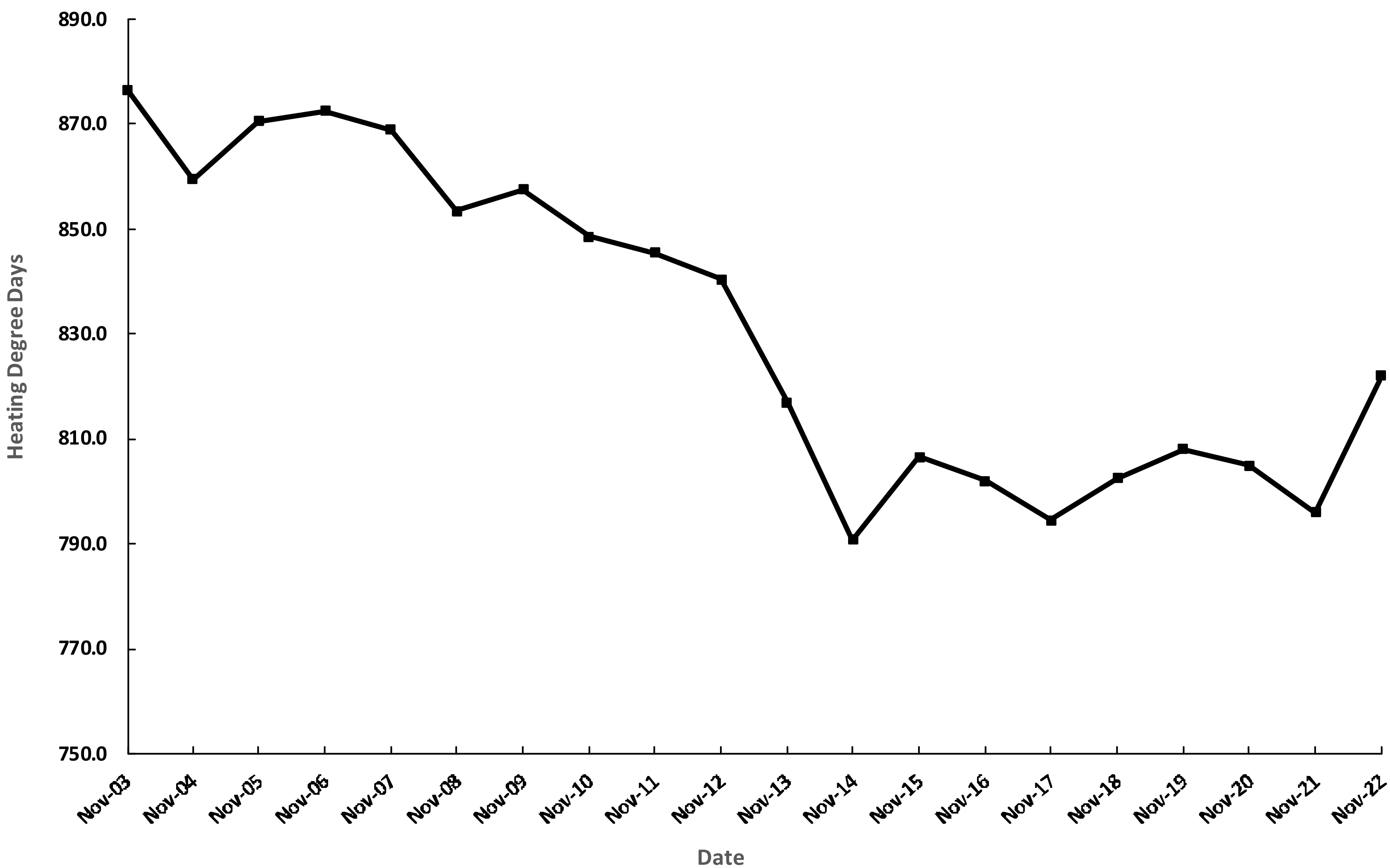

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
DISTRICT 23 - TAHOE
Heating Degree Days
200.0
180.0
160.0
140.0
120.0
100.0
80.0
Date
Aug-03
Aug-04
Aug-05
Aug-06
Aug-07
Aug-08
Aug-09
Aug-10
Aug-11
Aug-12
Aug-13
Aug-14
Aug-15
Aug-16
Aug-17
Aug-18
Aug-19
Aug-20
Aug-21
Aug-22

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
DISTRICT 23 - TAHOE

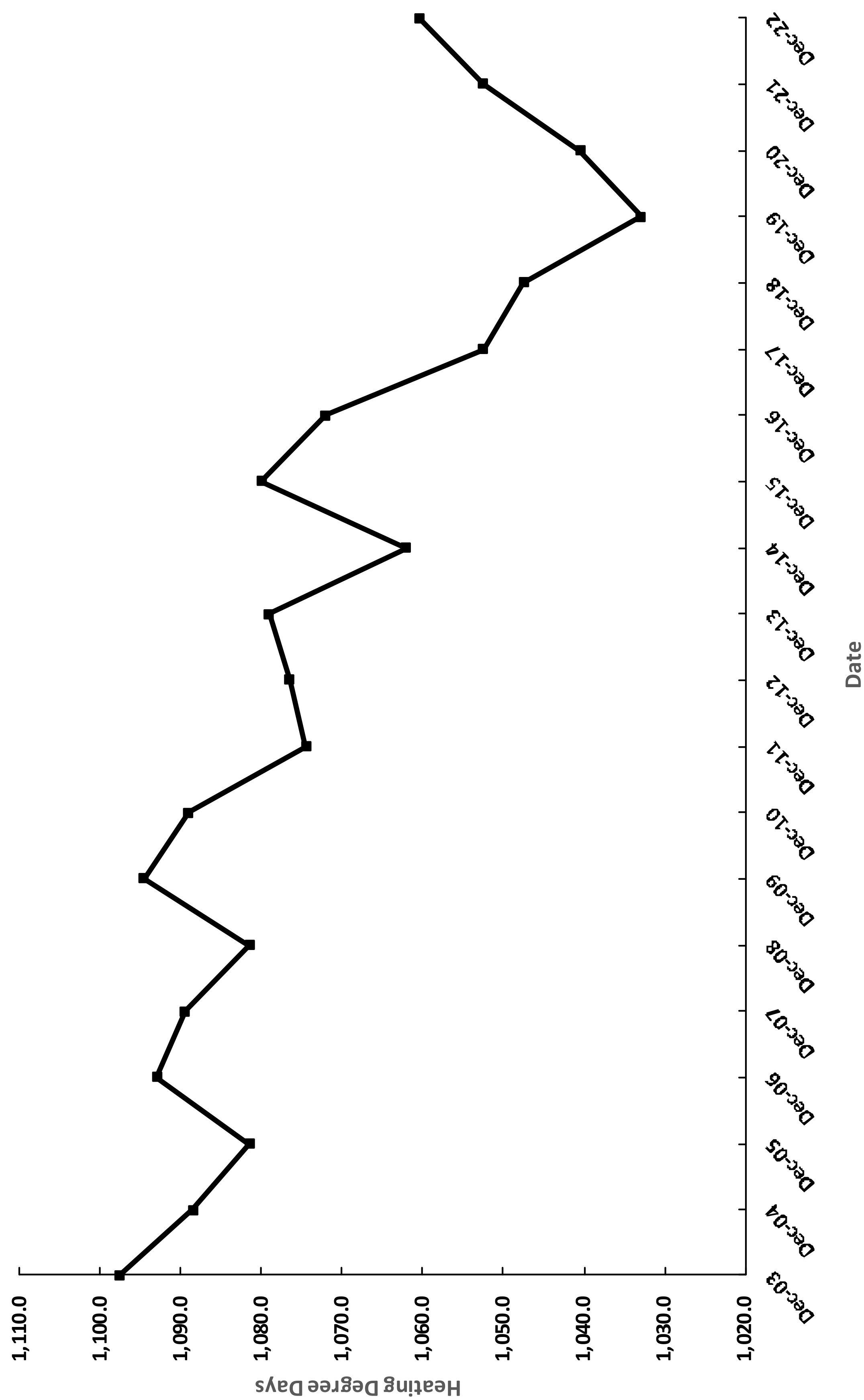



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
DISTRICT 23 - TAHOE
Heating Degree Days
650.0
640.0
630.0
620.0
610.0
600.0
590.0
580.0
570.0
560.0
550.0
Oct-03
Oct-04
Oct-05
Oct-06
Oct-07
Oct-08
Oct-09
Oct-10
Oct-11
Oct-12
Oct-13
Oct-14
Oct-15
Oct-16
Oct-17
Oct-18
Oct-19
Oct-20
Oct-21
Oct-22
Date

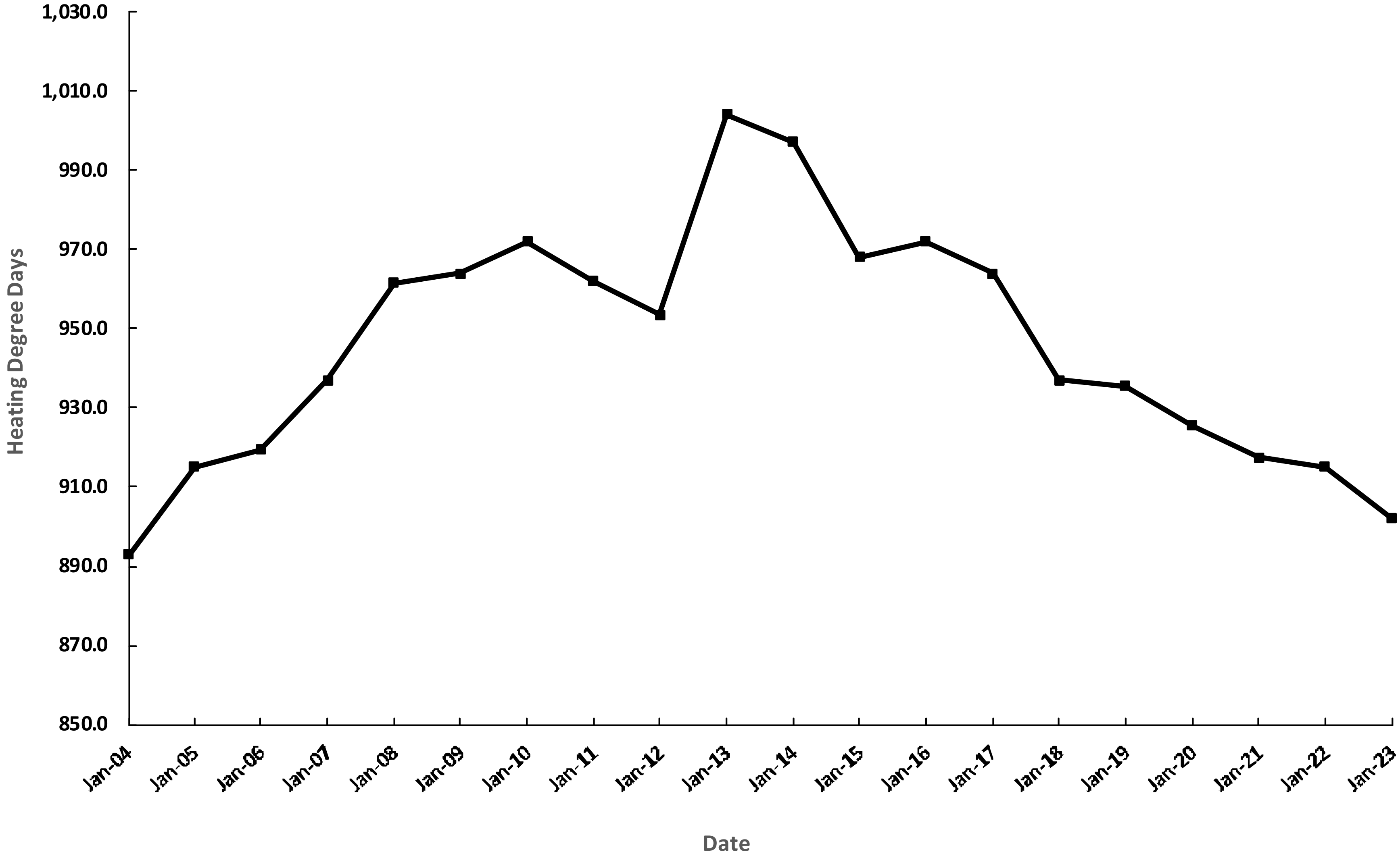
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
DISTRICT 23 - TAHOE



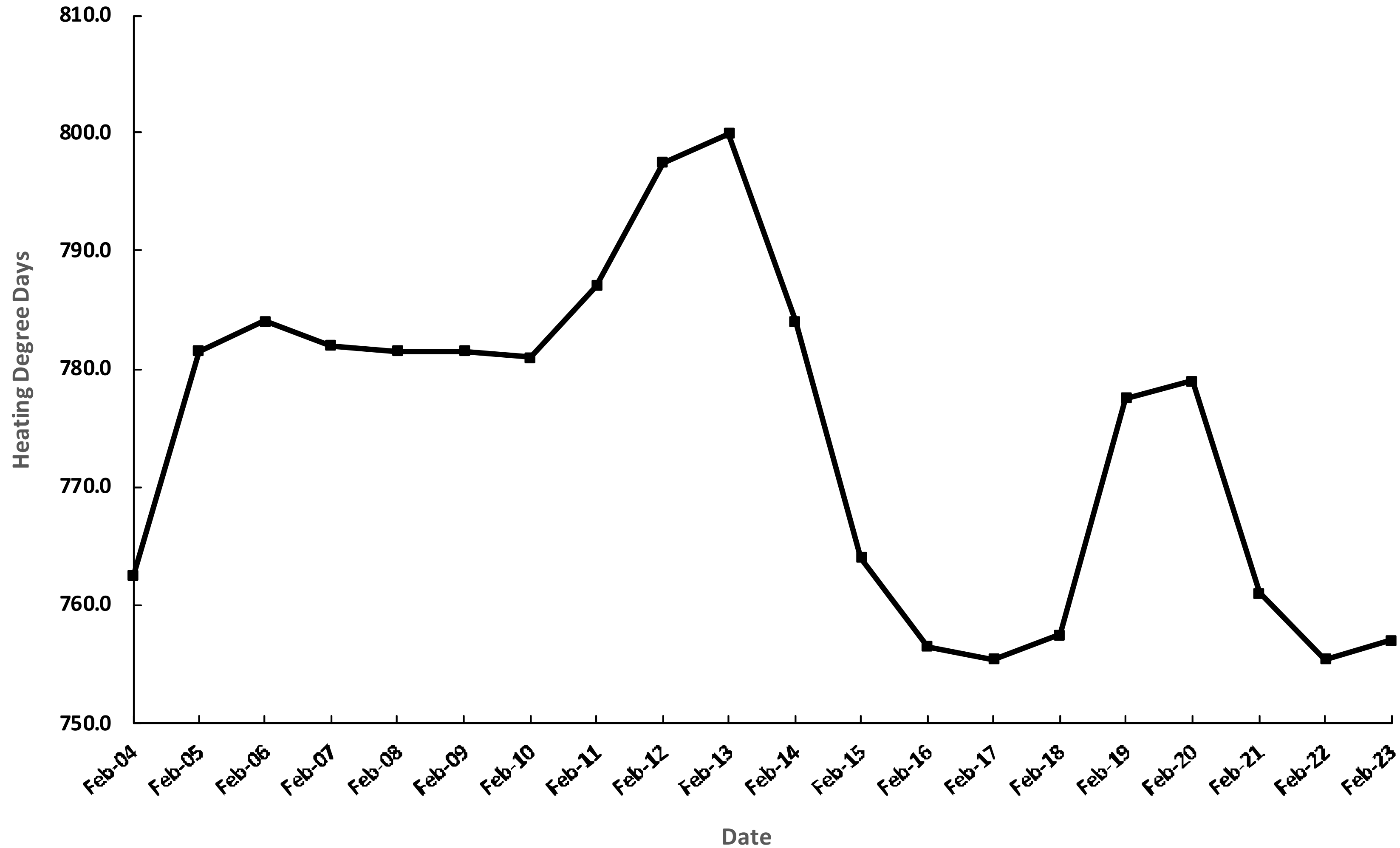
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
DECEMBER, 2003 - 2022
DISTRICT 23 - TAHOE



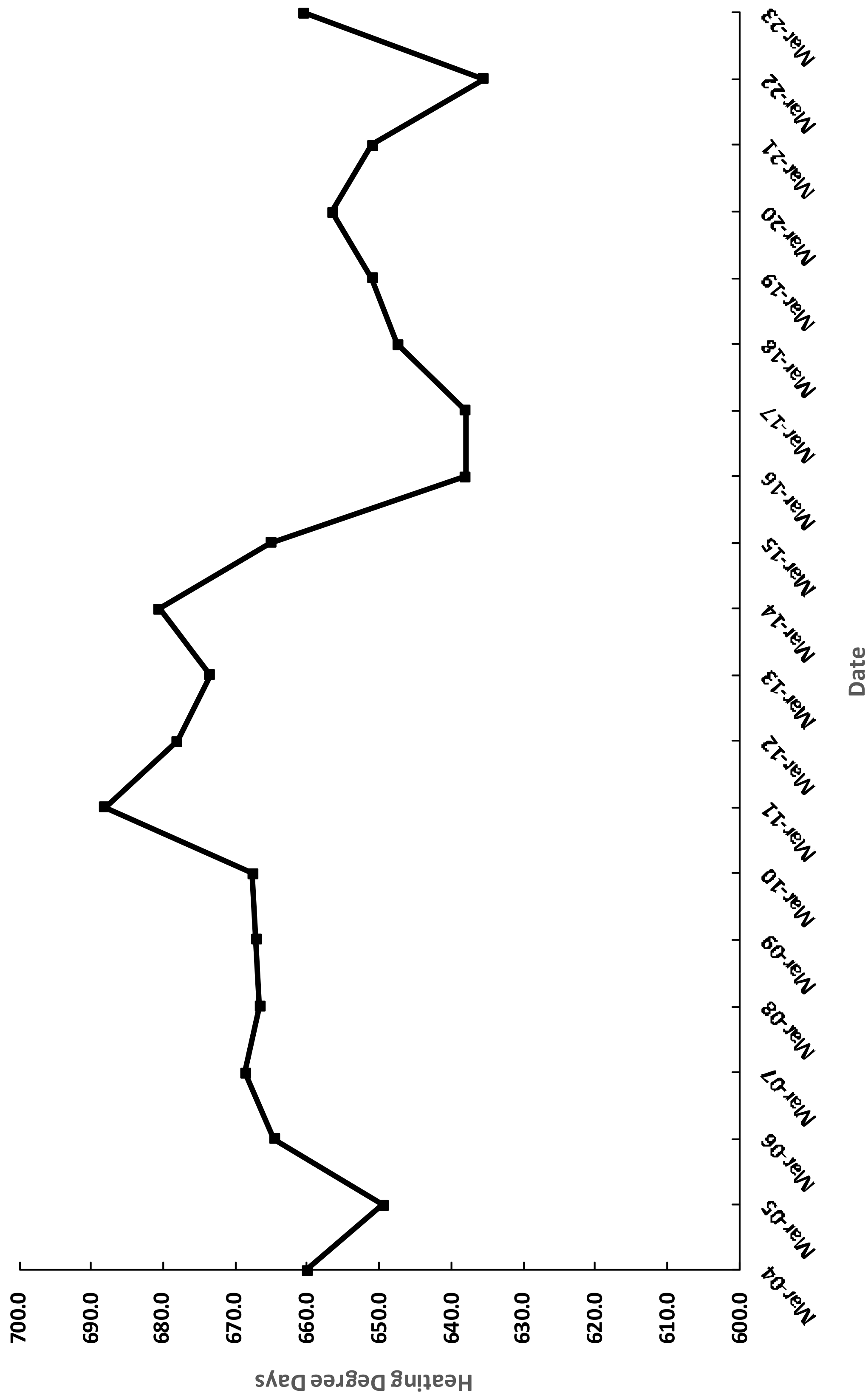
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JANUARY, 2004 - 2023
DISTRICT 24 - CARSON

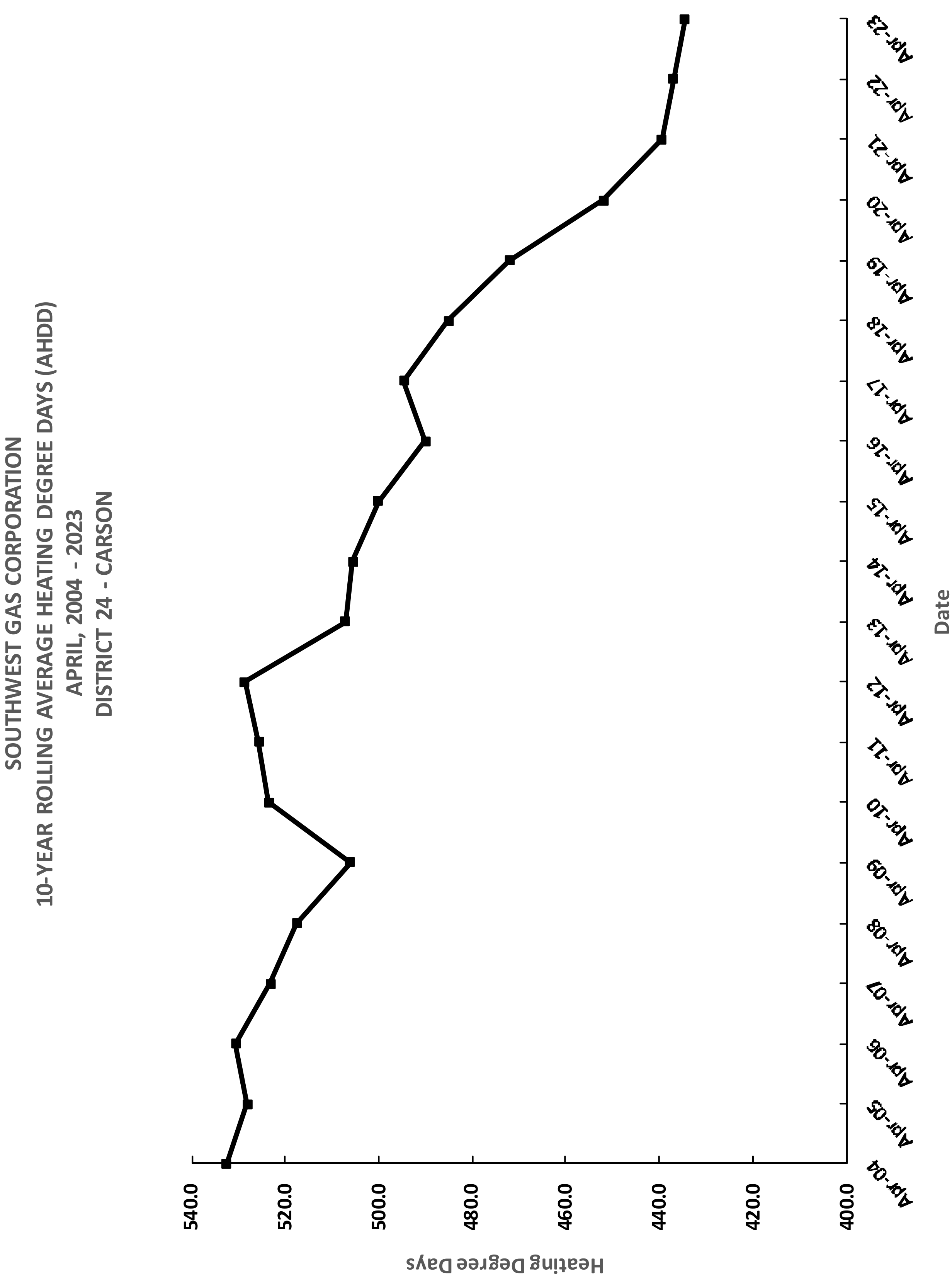


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
DISTRICT 24 - CARSON

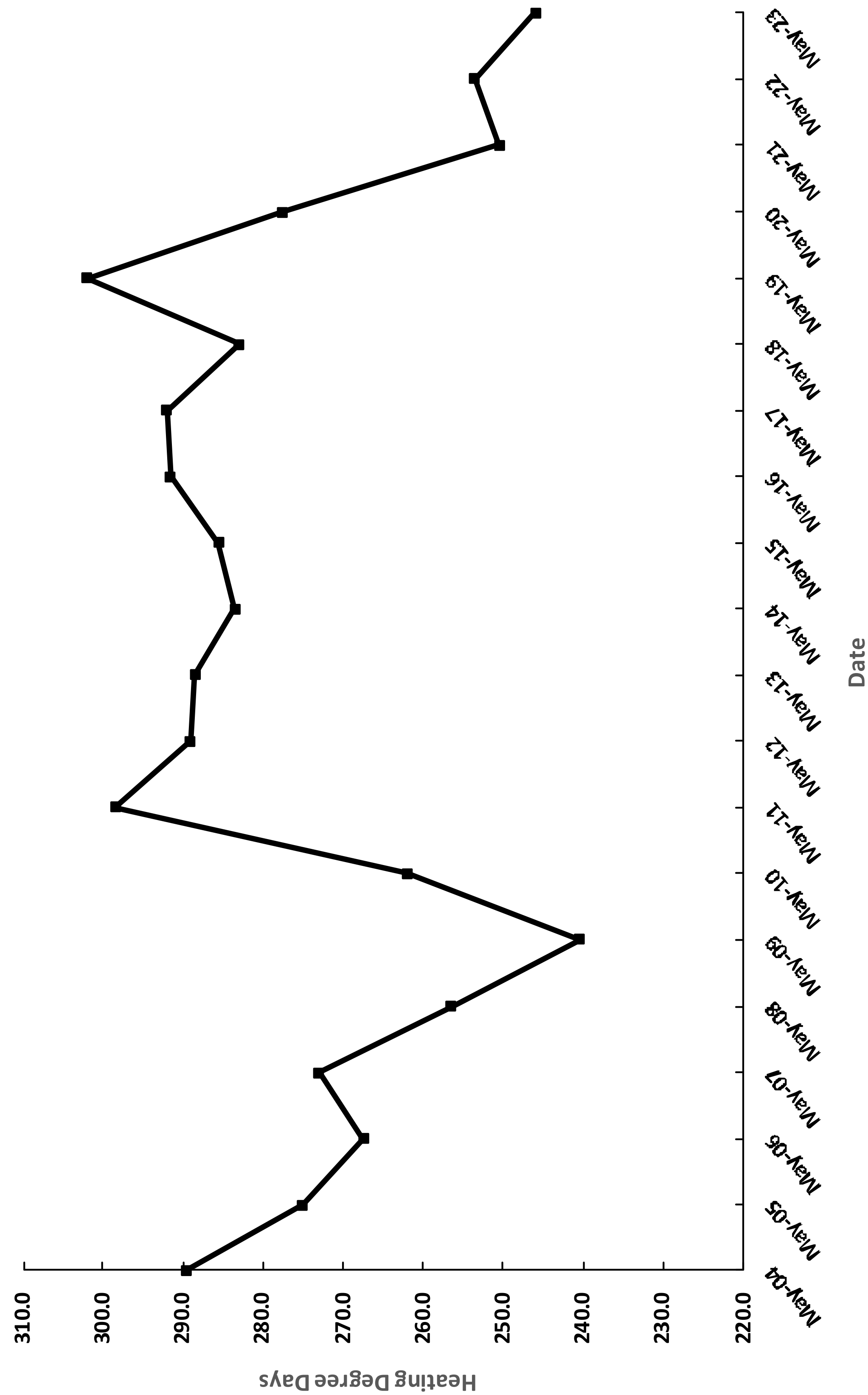


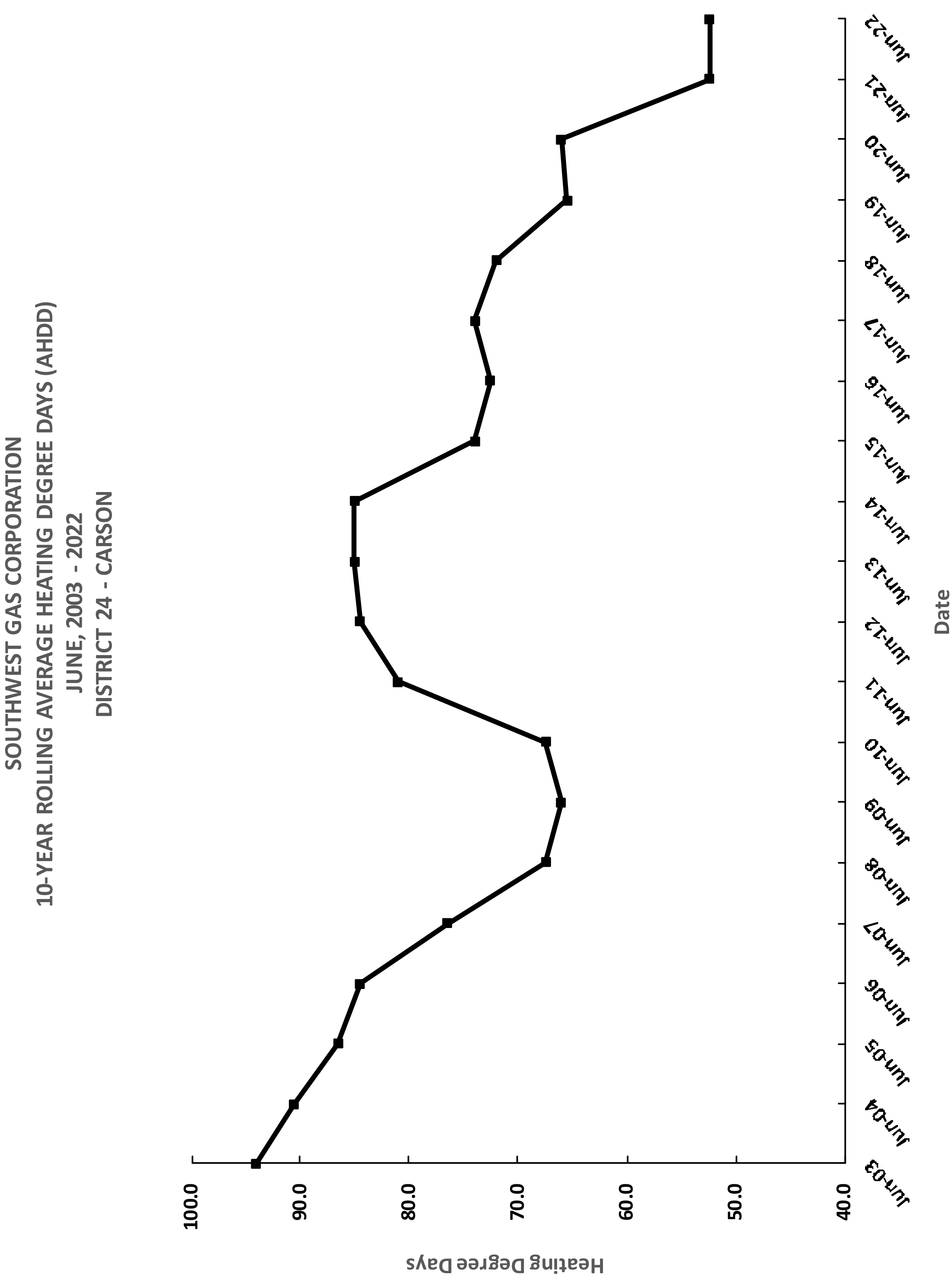
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
DISTRICT 24 - CARSON



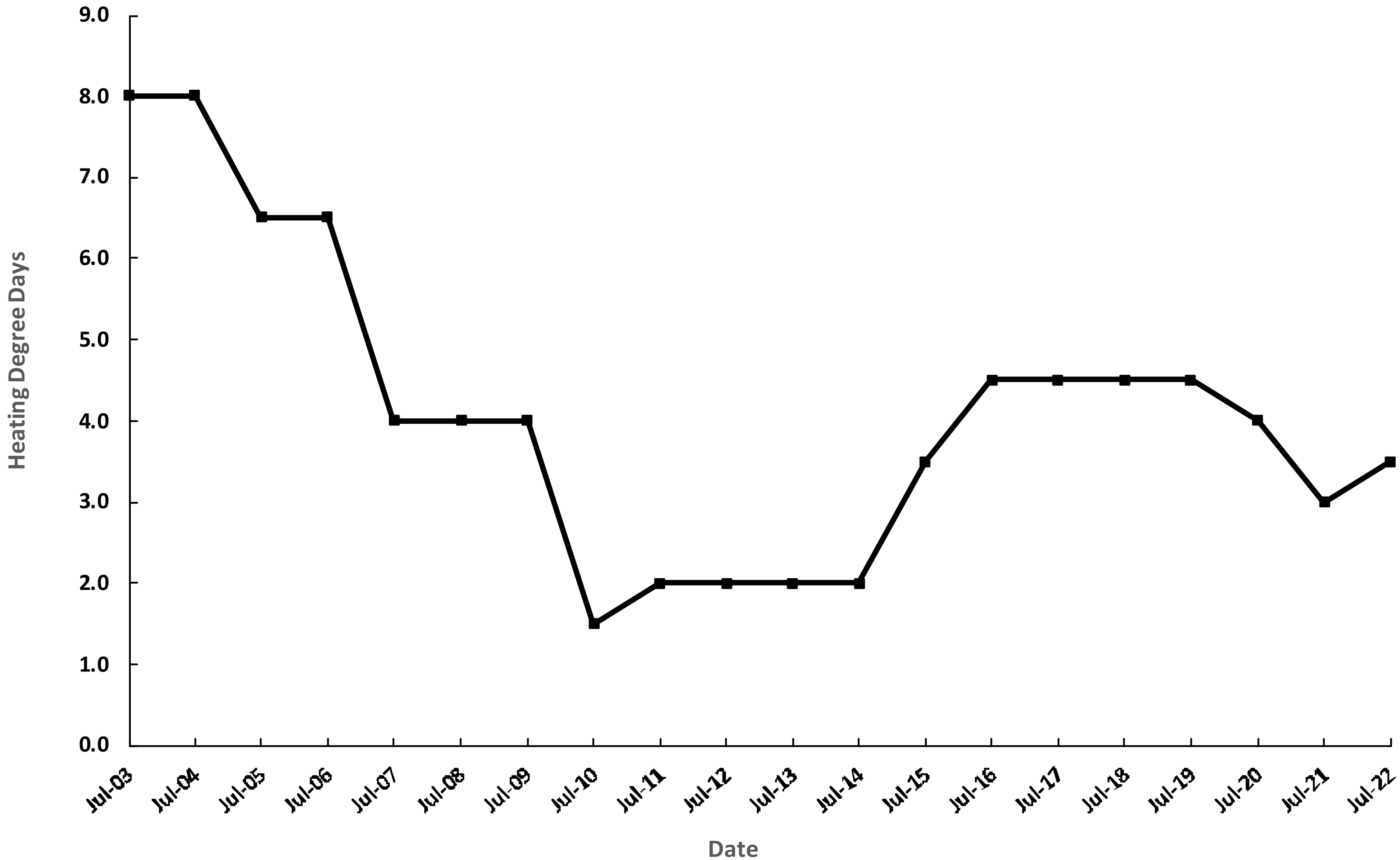

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
DISTRICT 24 - CARSON
Heating Degree Days
540.0
520.0
500.0
480.0
460.0
440.0
420.0
400.0
Date
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MAY, 2004 - 2023
DISTRICT 24 - CARSON

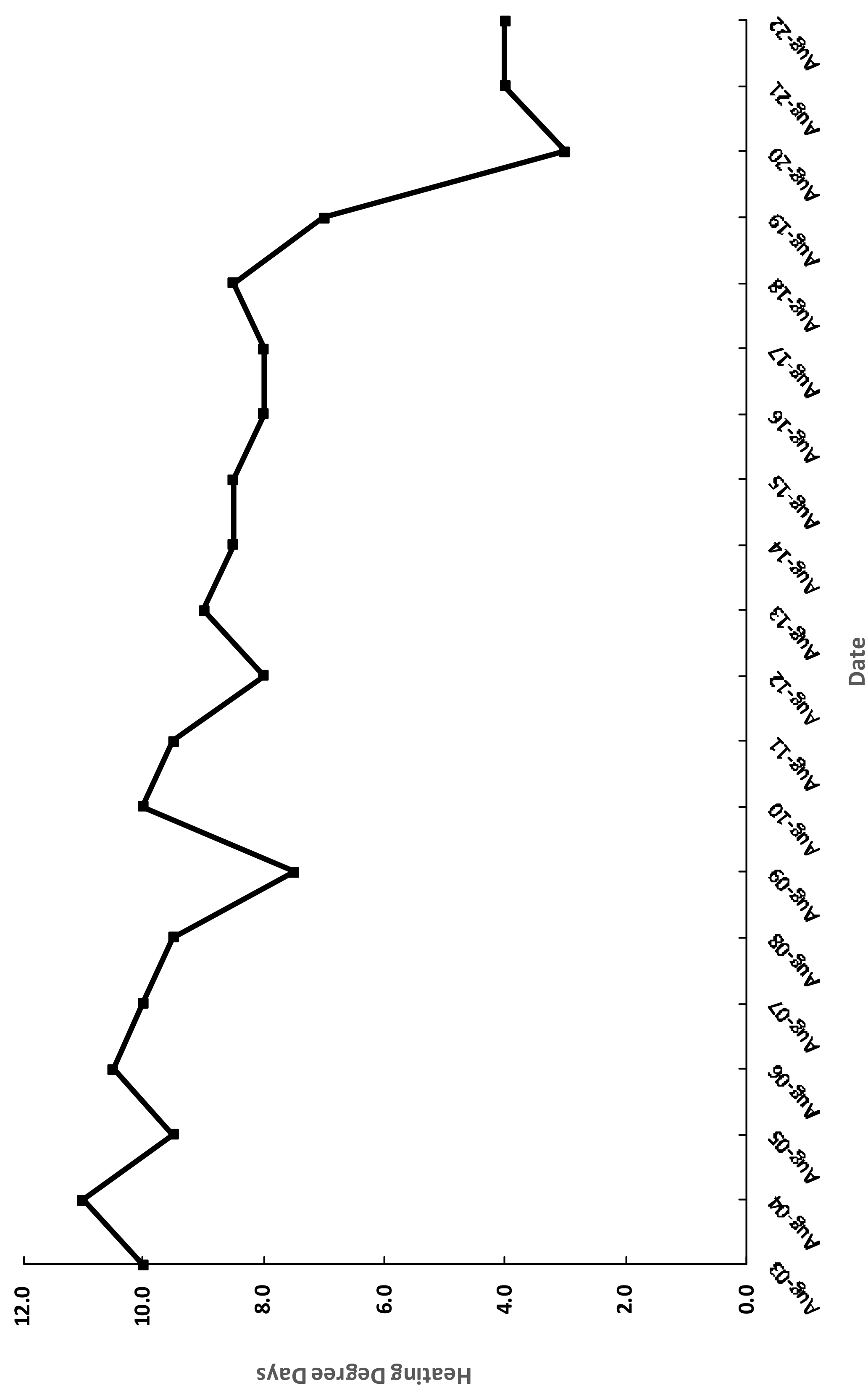



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
DISTRICT 24 - CARSON
Heating Degree Days
100.0
90.0
80.0
70.0
60.0
50.0
40.0
Date
Jun-03
Jun-04
Jun-05
Jun-06
Jun-07
Jun-08
Jun-09
Jun-10
Jun-11
Jun-12
Jun-13
Jun-14
Jun-15
Jun-16
Jun-17
Jun-18
Jun-19
Jun-20
Jun-21
Jun-22

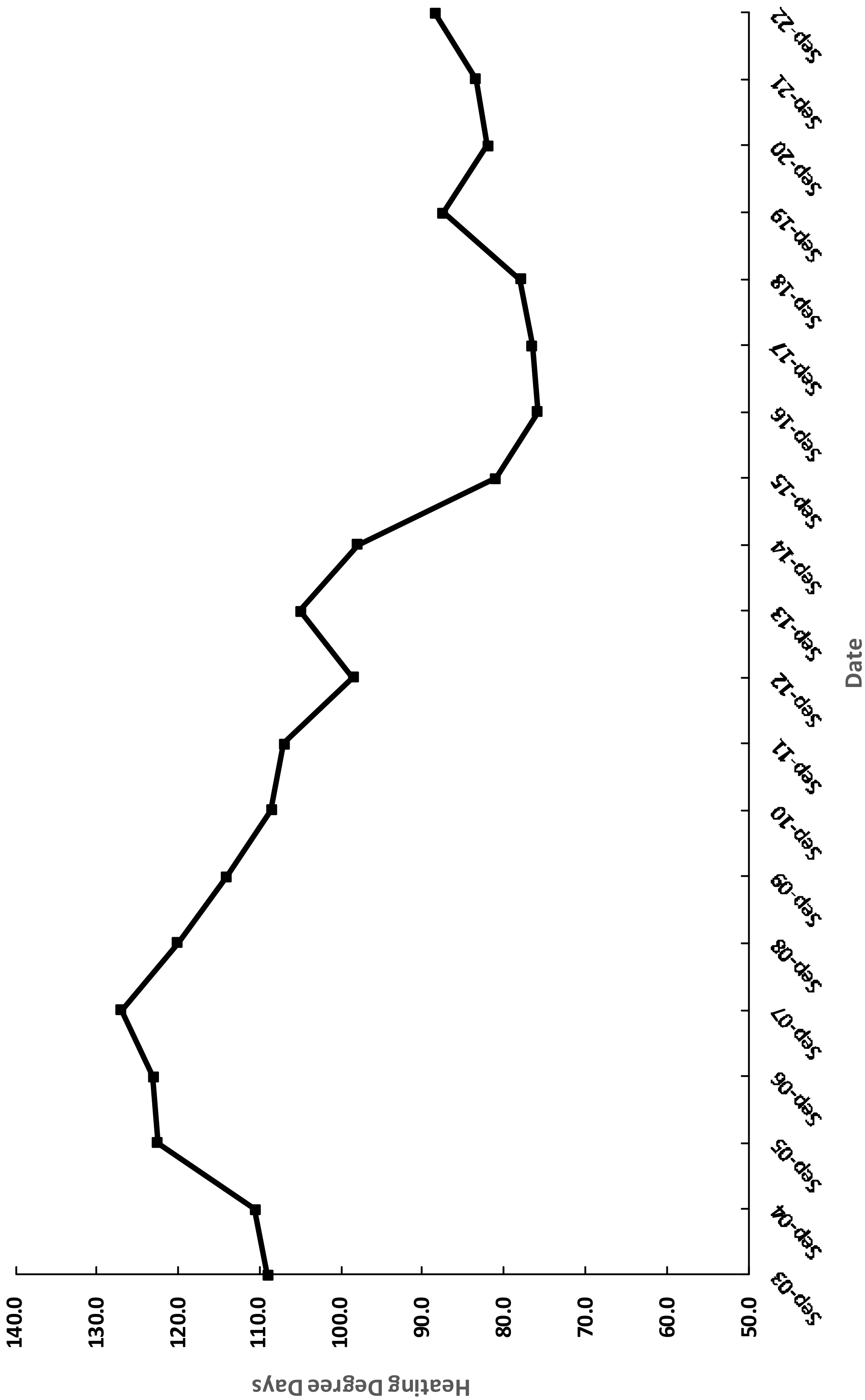
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
DISTRICT 24 - CARSON



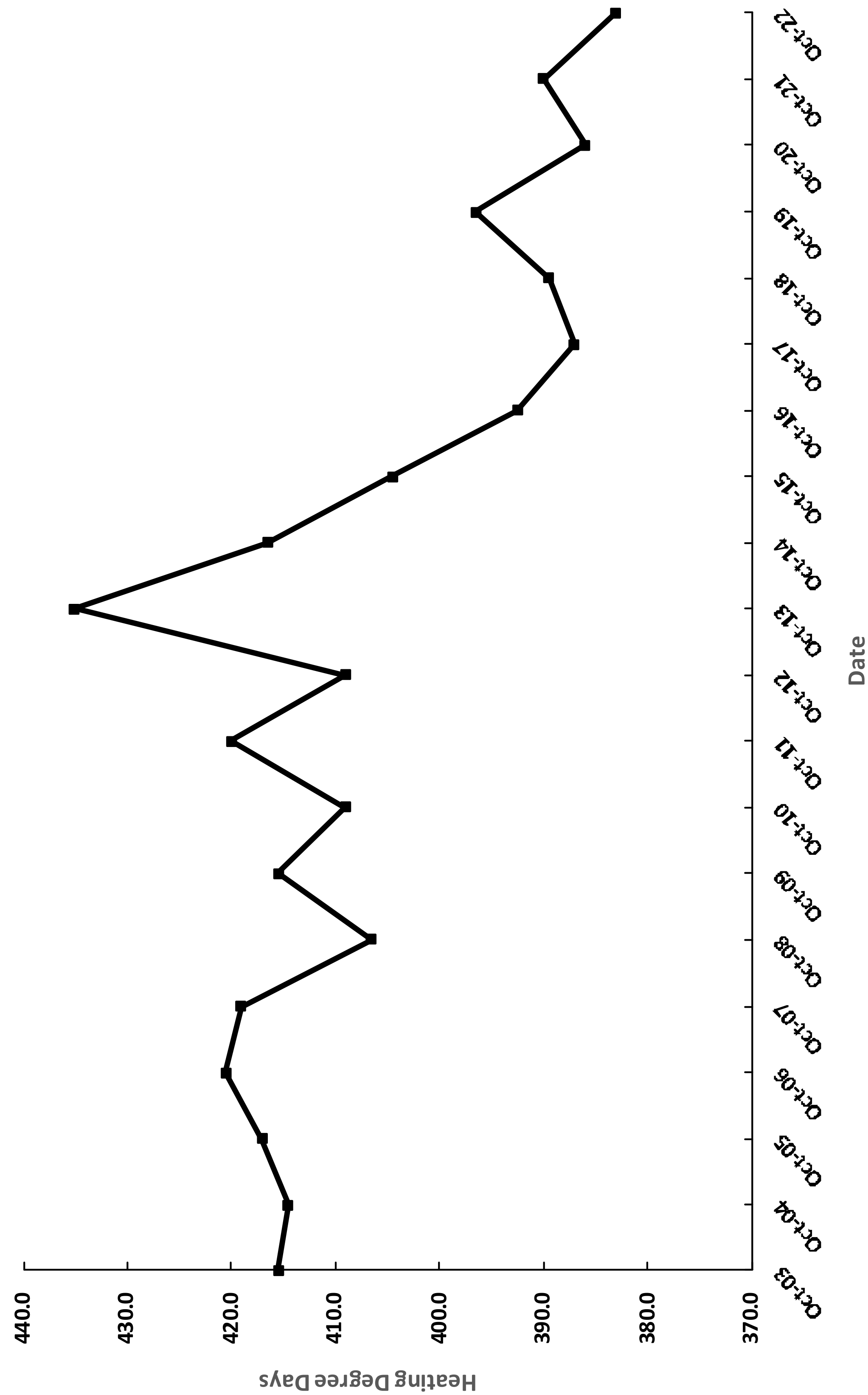
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
DISTRICT 24 - CARSON

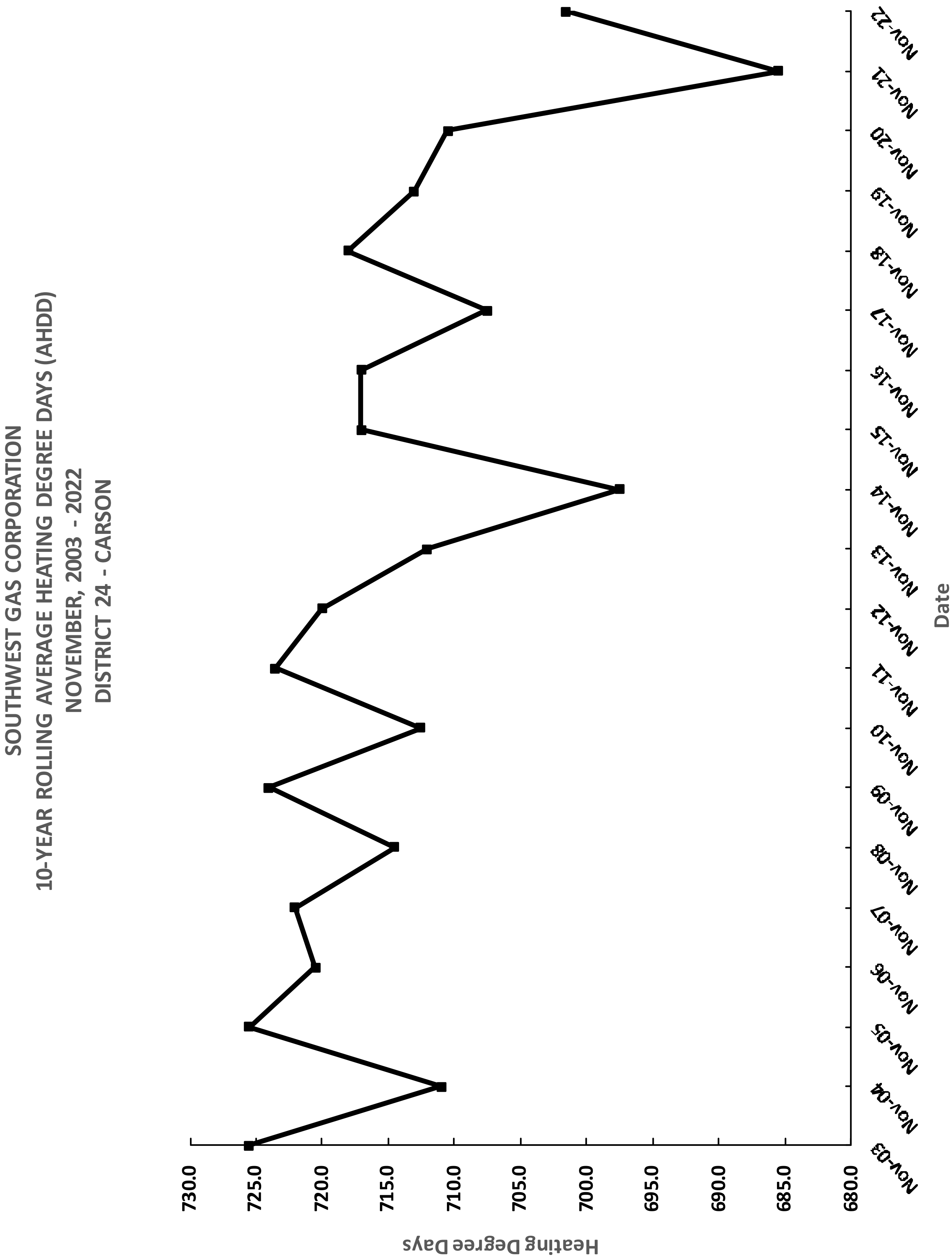


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
DISTRICT 24 - CARSON



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
DISTRICT 24 - CARSON




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
DISTRICT 24 - CARSON
Heating Degree Days
730.0
725.0
720.0
715.0
710.0
705.0
700.0
695.0
690.0
685.0
680.0
Nov-03
Nov-04
Nov-05
Nov-06
Nov-07
Nov-08
Nov-09
Nov-10
Nov-11
Nov-12
Nov-13
Nov-14
Nov-15
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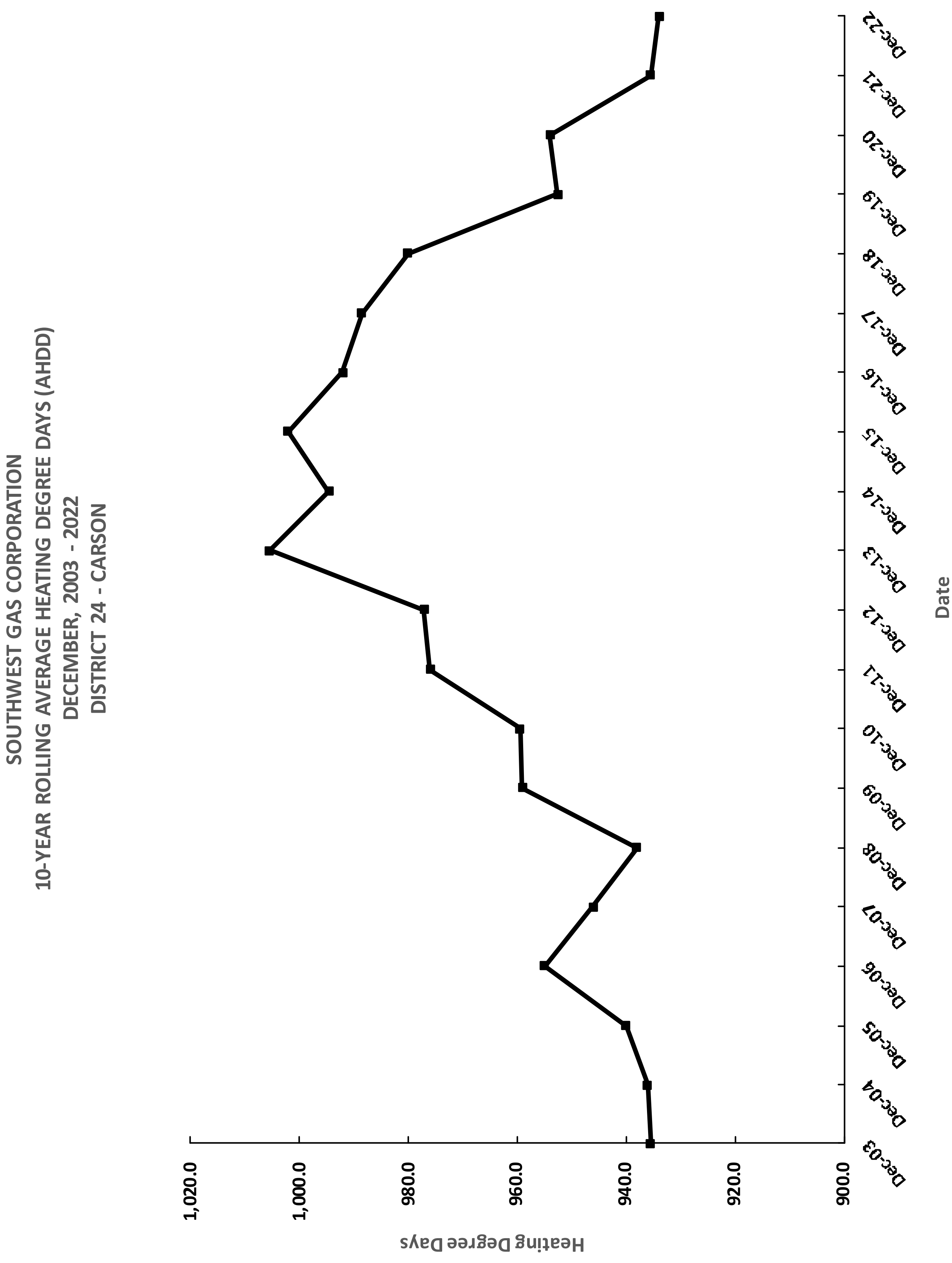
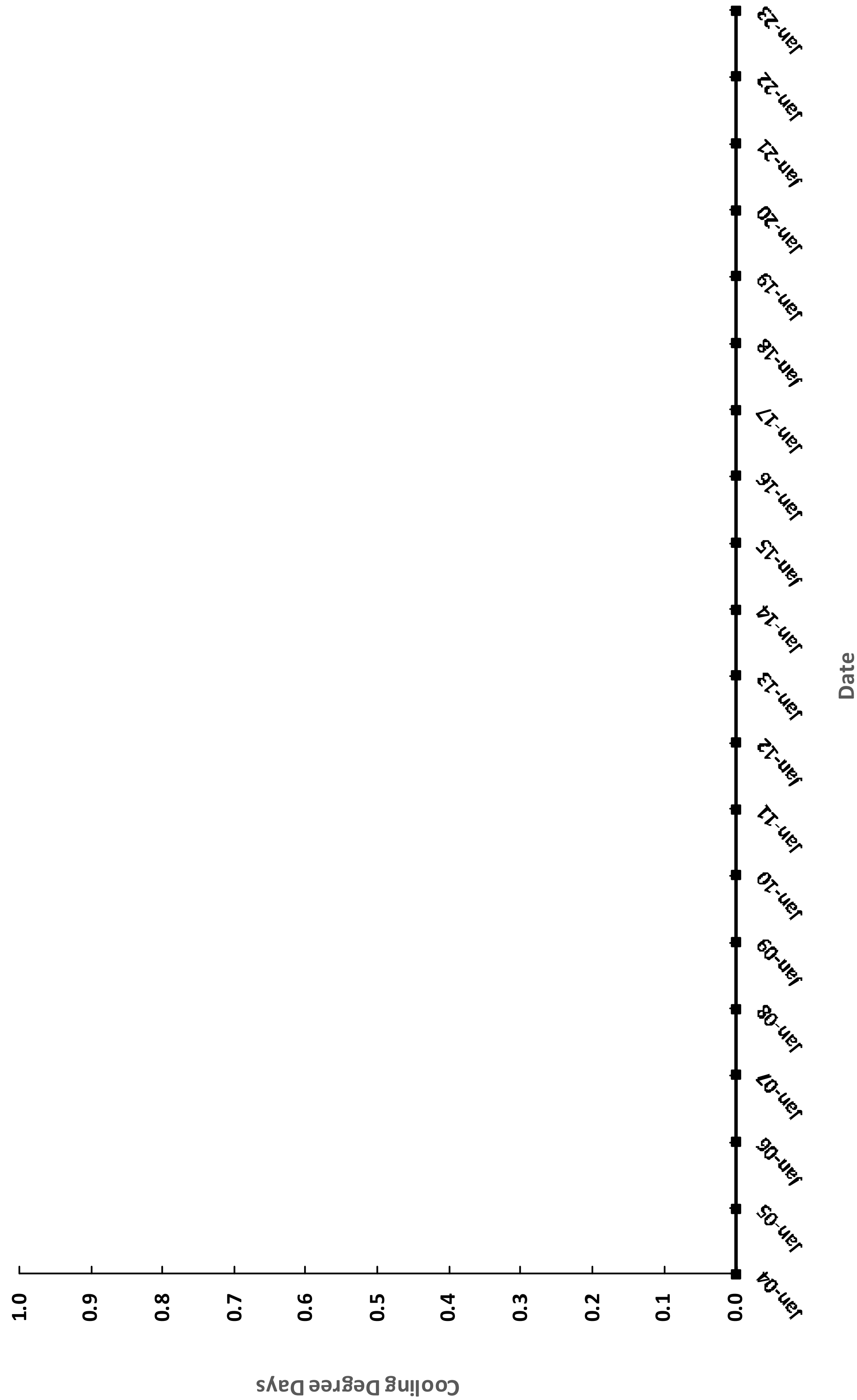
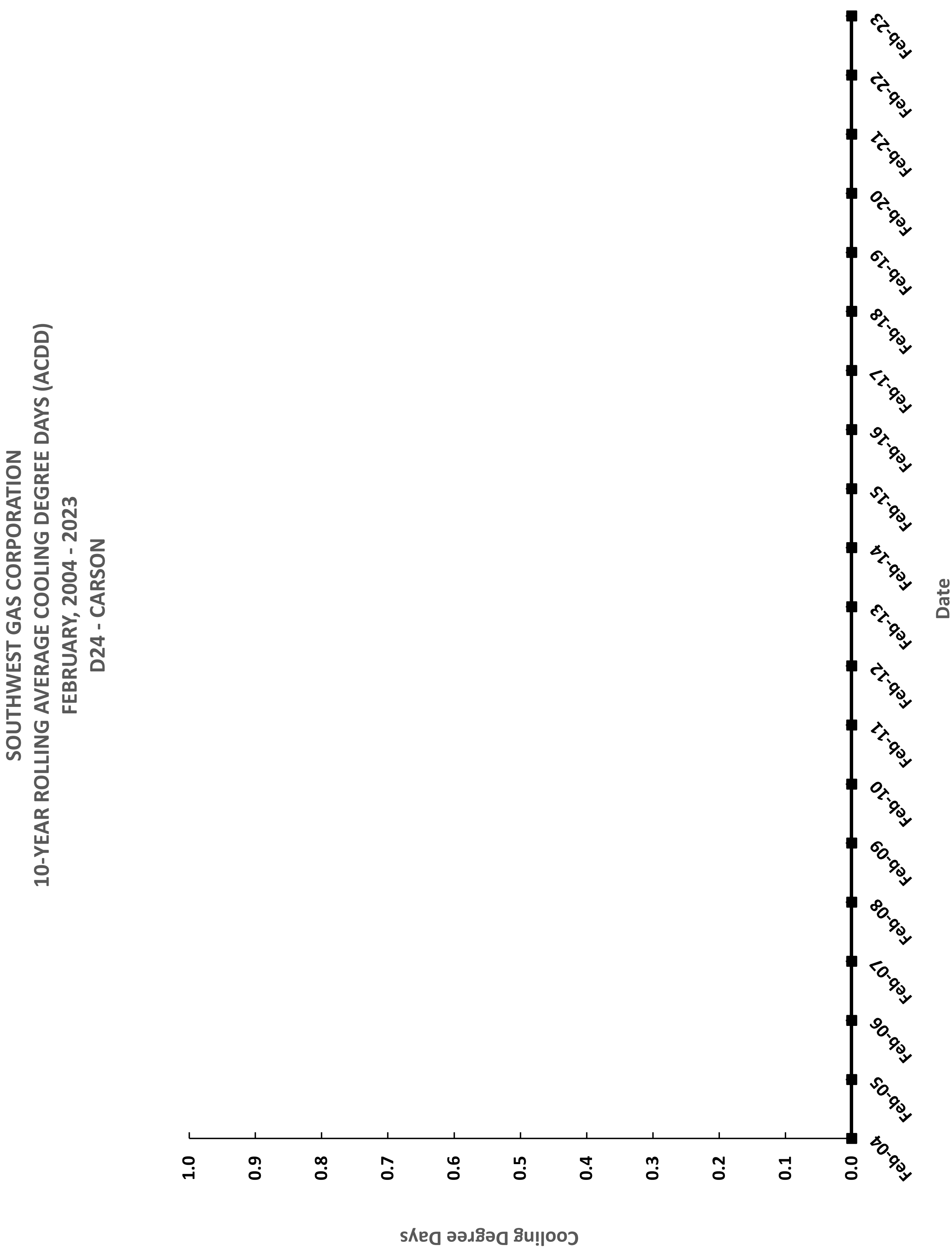
Nov-20
Nov-21
Nov-22
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
DECEMBER, 2003 - 2022
DISTRICT 24 - CARSON
Heating Degree Days
1,020.0
1,000.0
980.0
960.0
940.0
920.0
900.0
Date
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
Dec-16
Dec-17
Dec-18
Dec-19
Dec-20
Dec-21
Dec-22

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JANUARY, 2004 - 2023
D24 - CARSON




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
FEBRUARY, 2004 - 2023
D24 - CARSON
Cooling Degree Days
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
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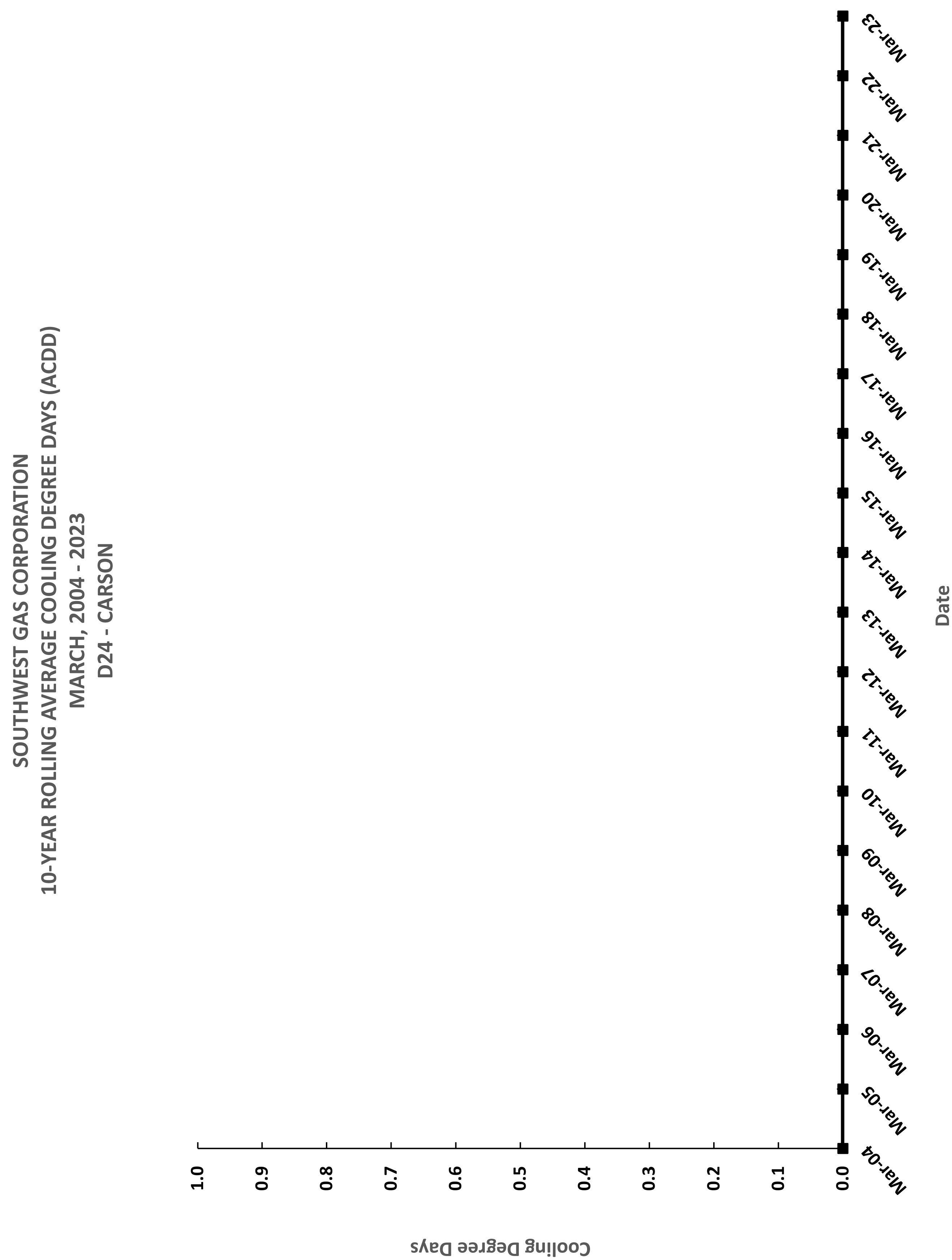
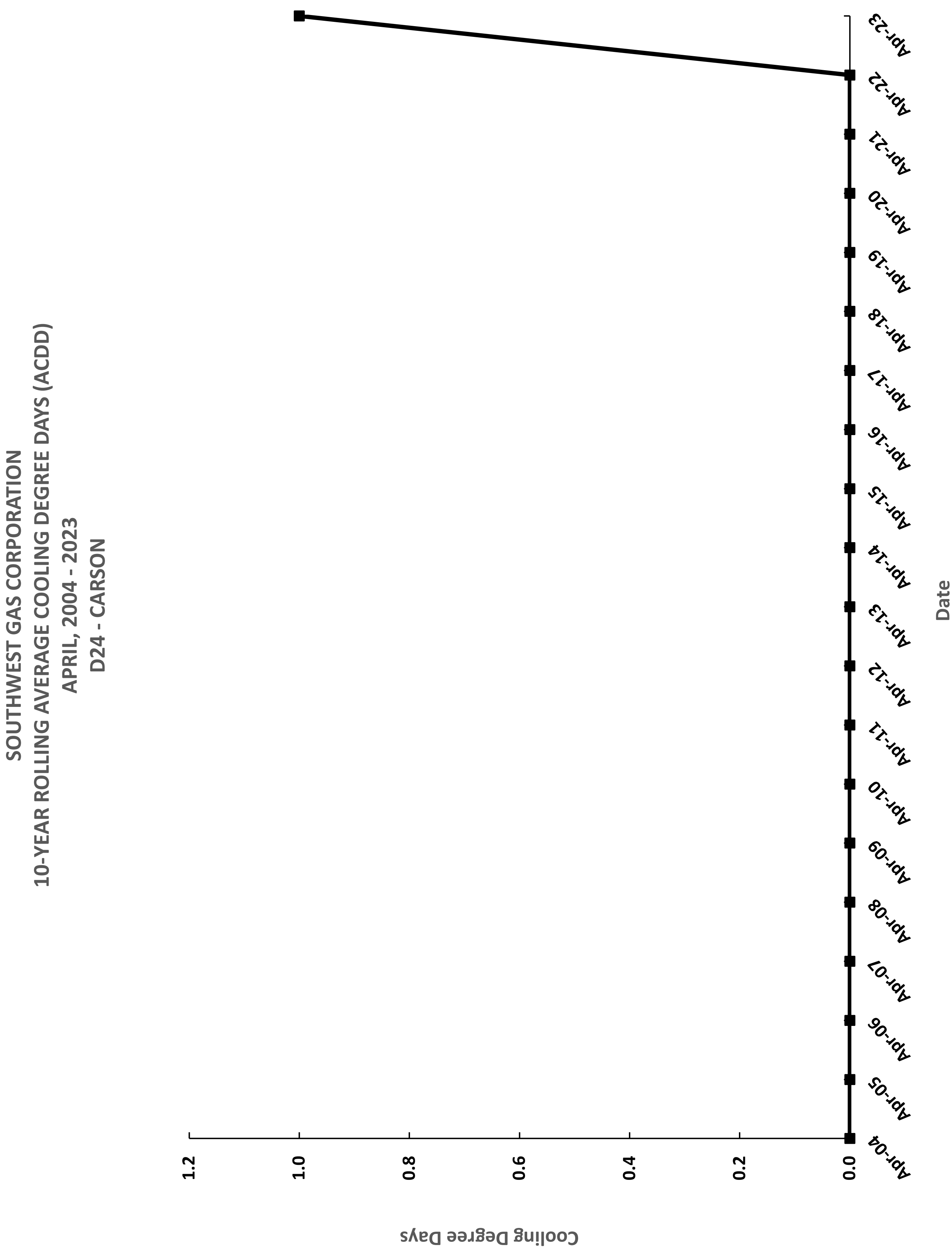
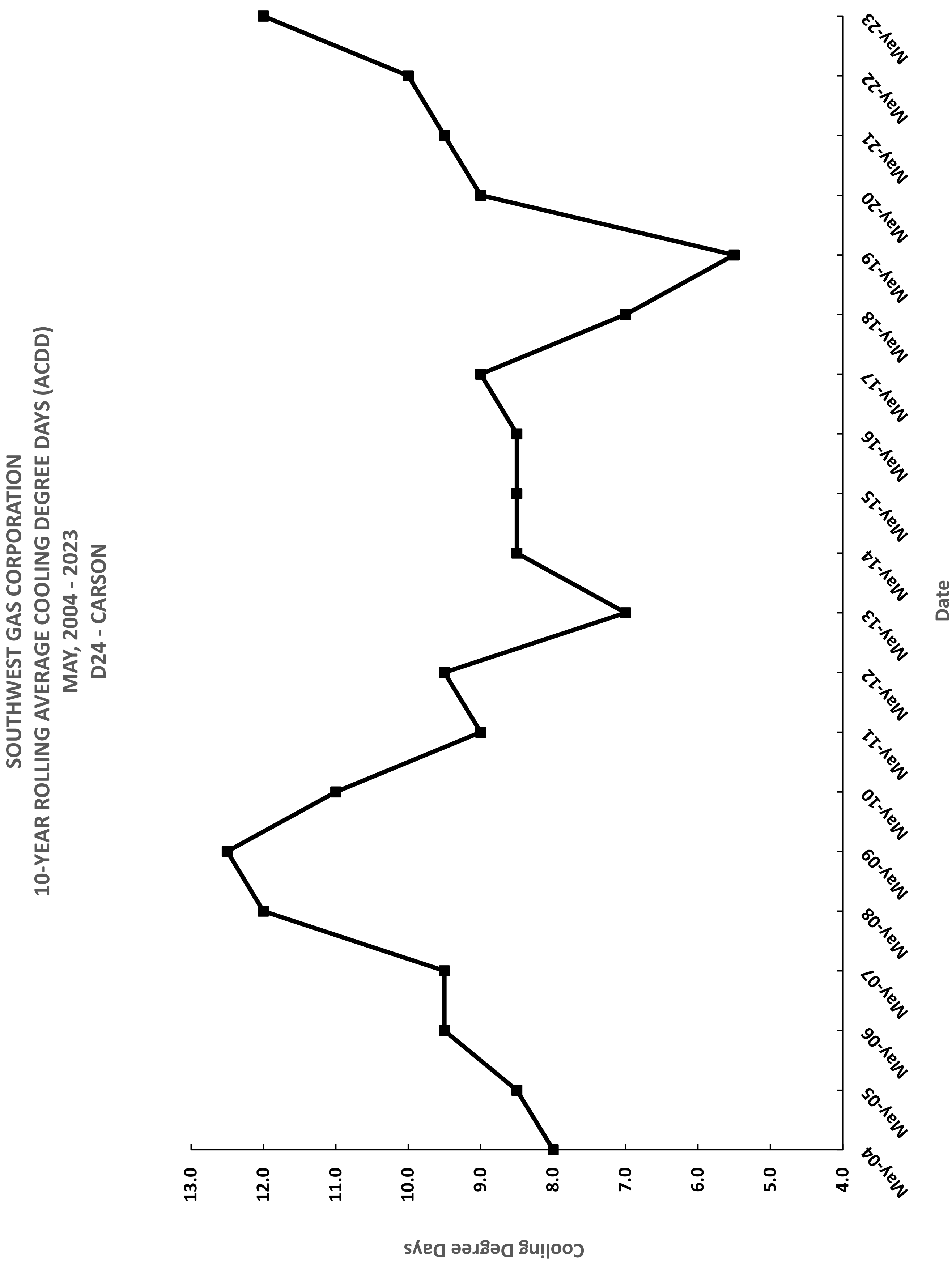
Feb-20
Feb-21
Feb-22
Feb-23
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
MARCH, 2004 - 2023
D24 - CARSON
Cooling Degree Days
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Mar-23
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
APRIL, 2004 - 2023
D24 - CARSON
Cooling Degree Days
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
MAY, 2004 - 2023
D24 - CARSON
Cooling Degree Days
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
May-04
May-05
May-06
May-07
May-08
May-09
May-10
May-11
May-12
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May-15
May-16
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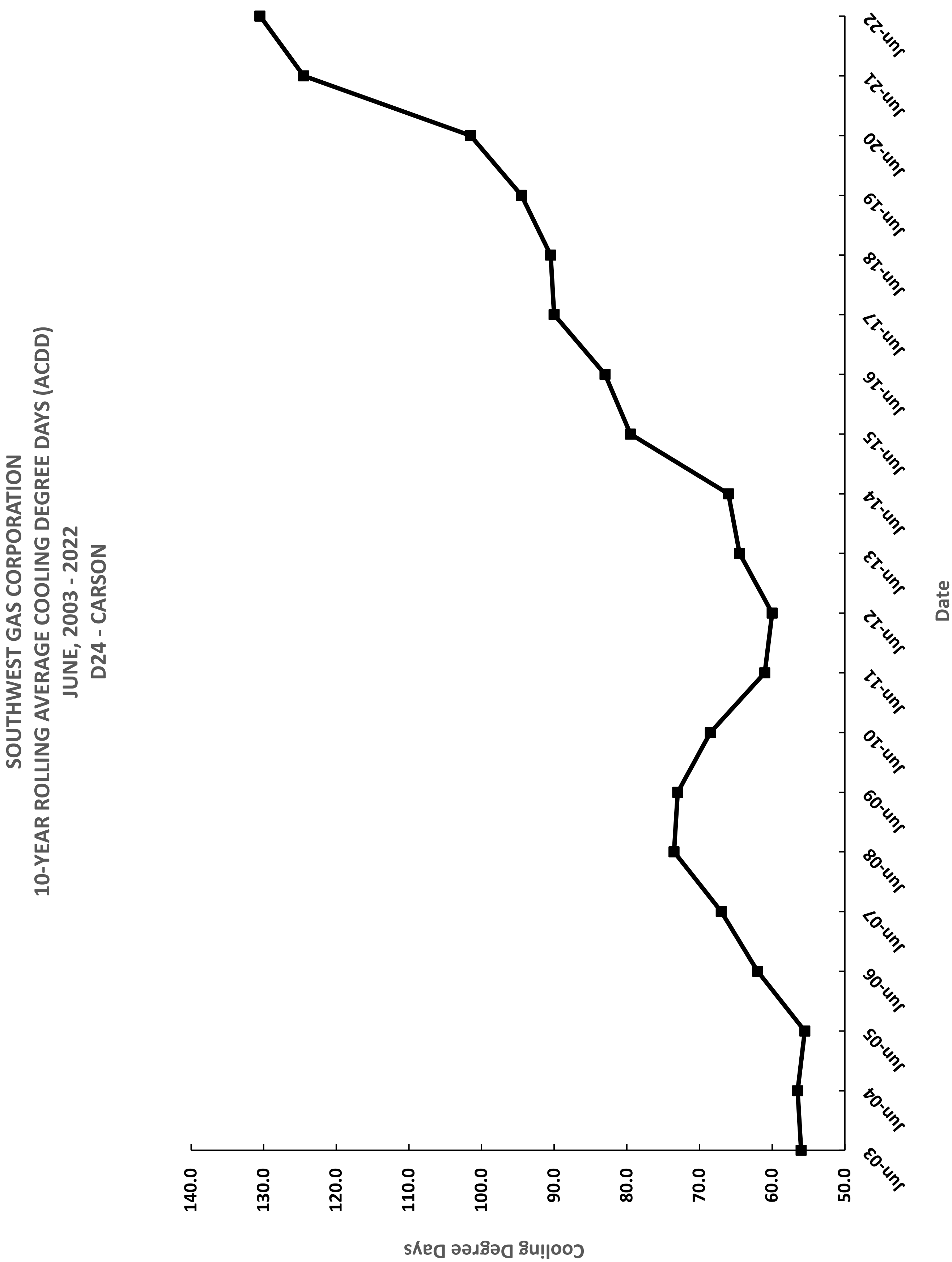
May-22
May-23
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JUNE, 2003 - 2022
D24 - CARSON
Cooling Degree Days
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
Jun-03
Jun-04
Jun-05
Jun-06
Jun-07
Jun-08
Jun-09
Jun-10
Jun-11
Jun-12
Jun-13
Jun-14
Jun-15
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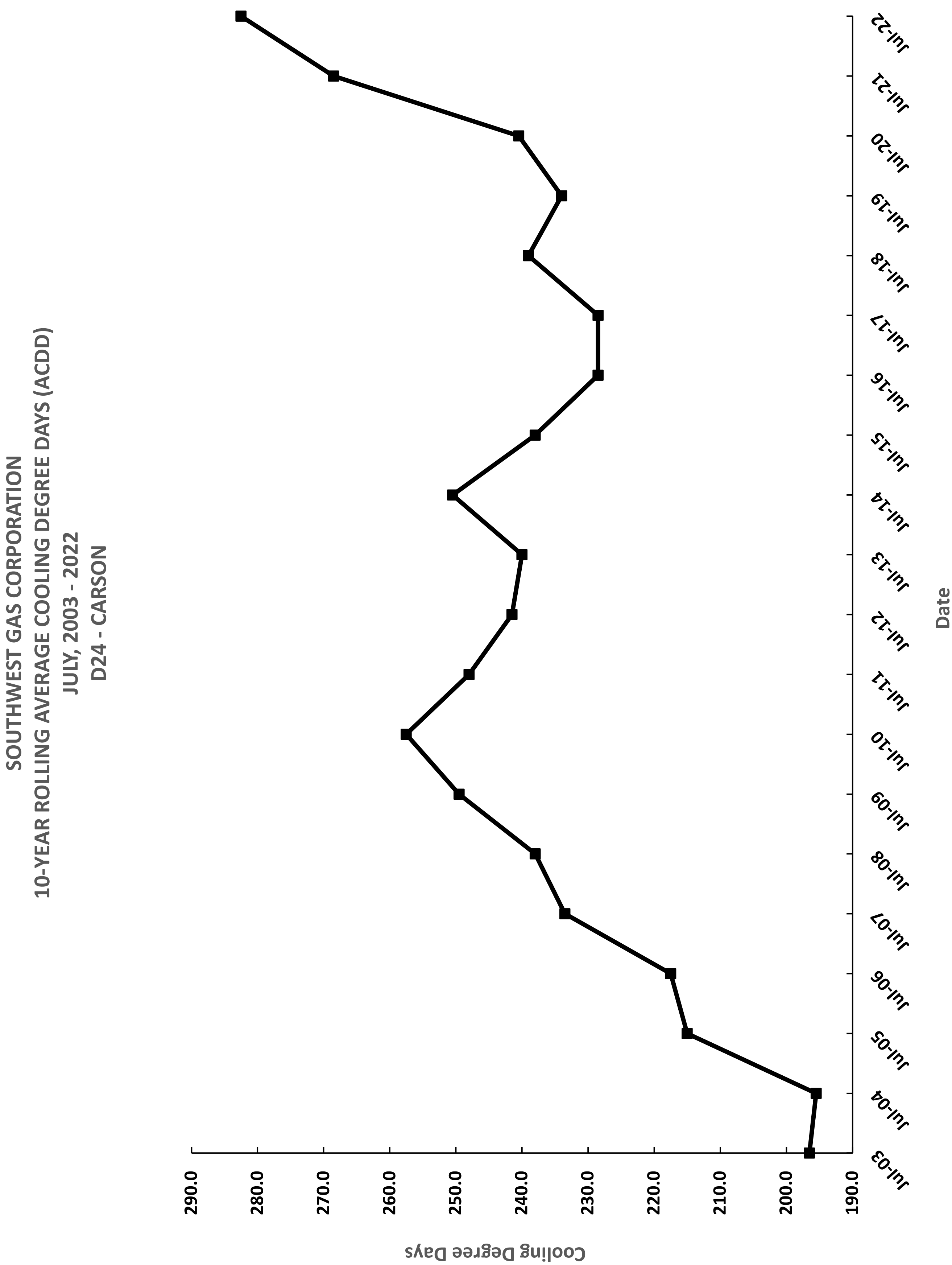
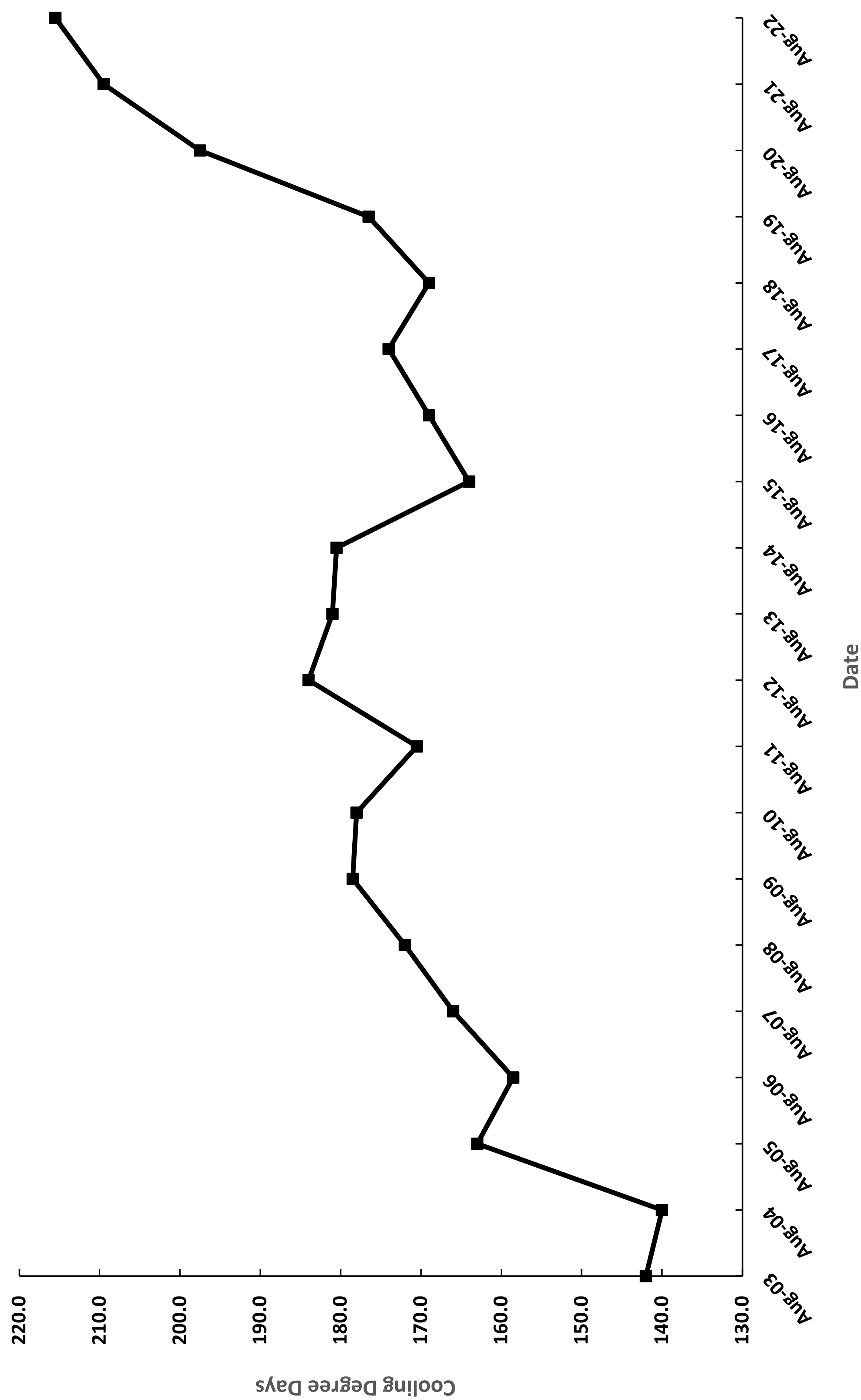
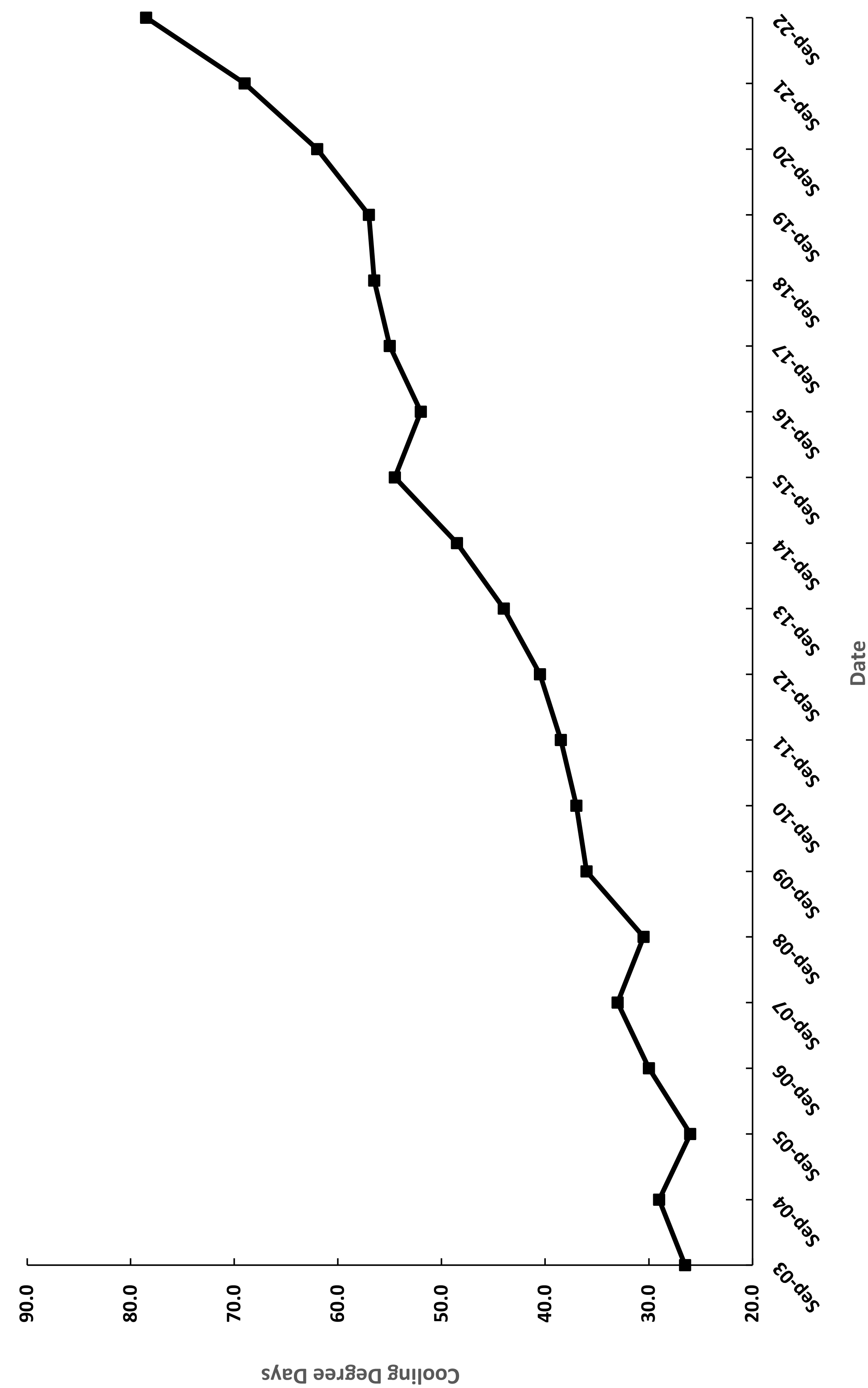
Jun-21
Jun-22
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JULY, 2003 - 2022
D24 - CARSON
Cooling Degree Days
Date
190.0
200.0
210.0
220.0
230.0
240.0
250.0
260.0
270.0
280.0
290.0
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Jul-16
Jul-17
Jul-18
Jul-19
Jul-20
Jul-21
Jul-22

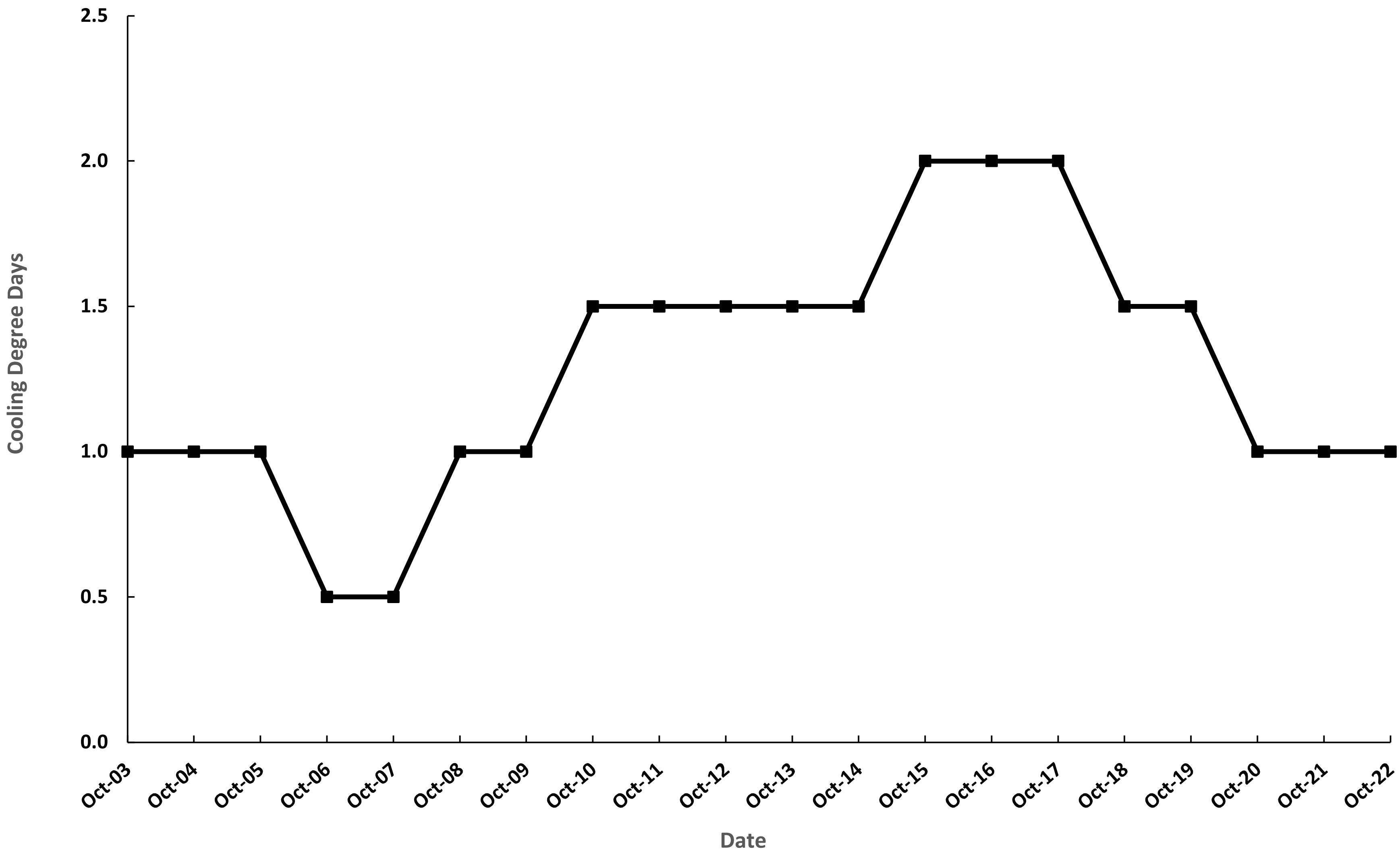
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
AUGUST, 2003 - 2022
D24 - CARSON

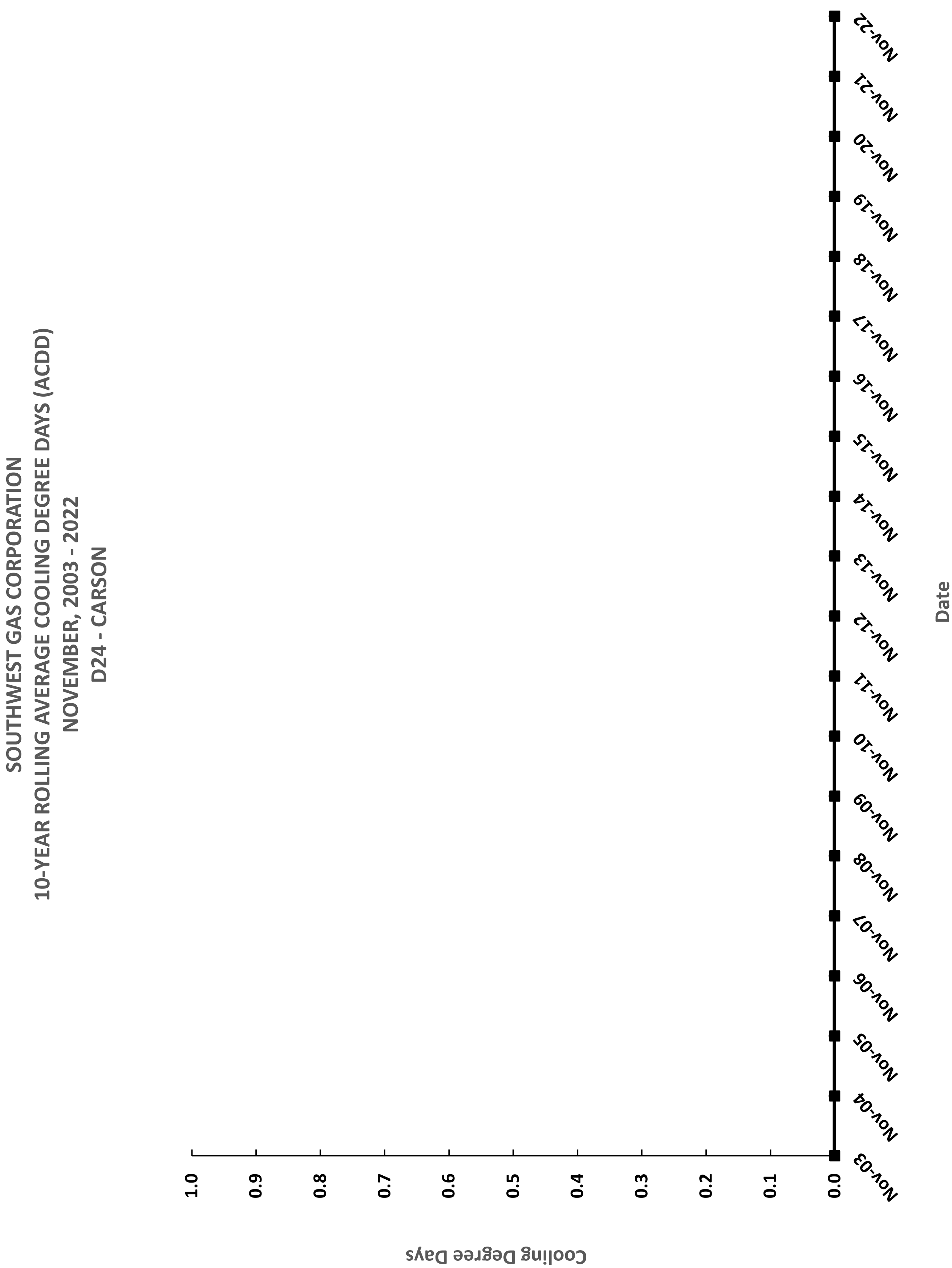


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
SEPTEMBER, 2003 - 2022
D24 - CARSON

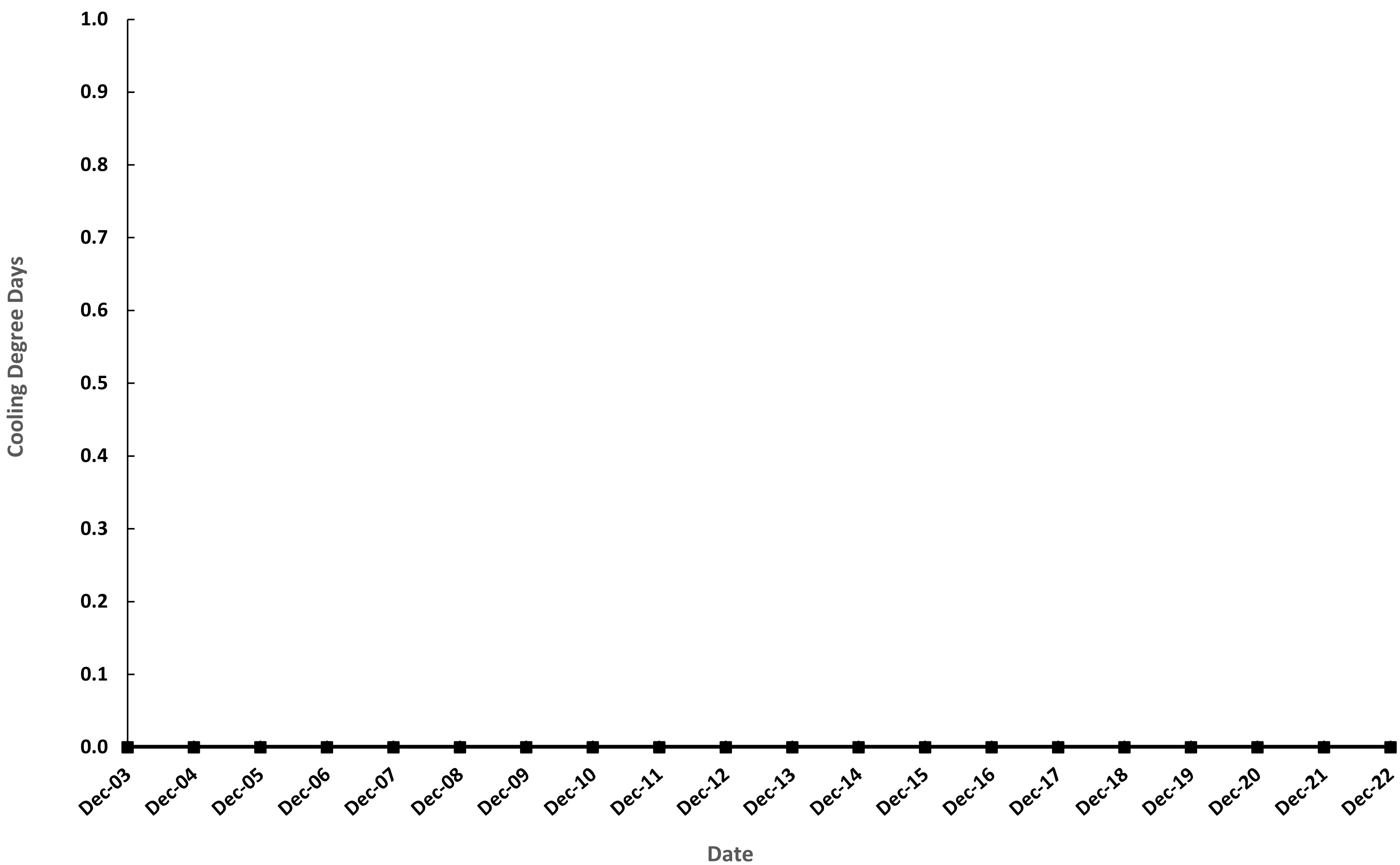


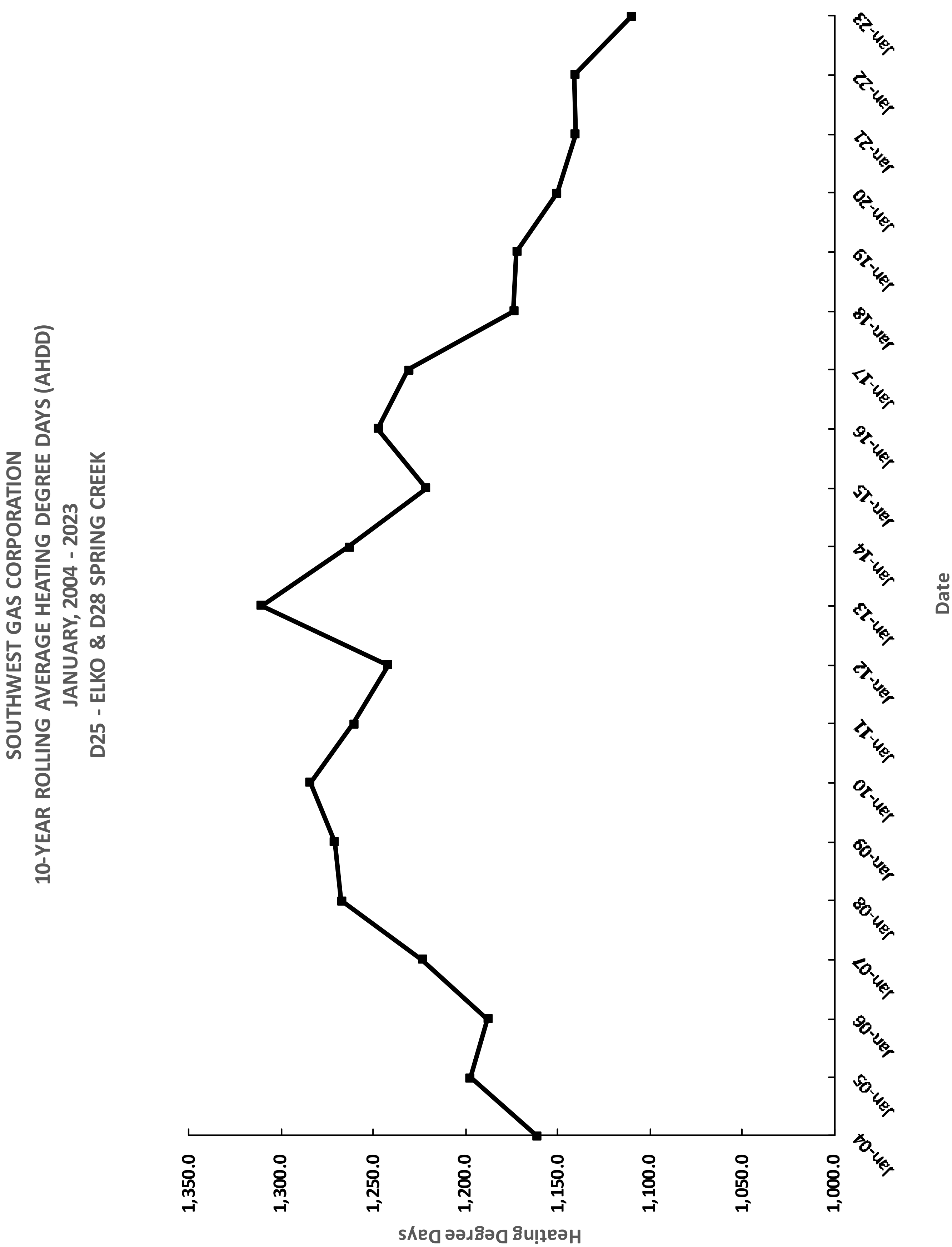
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
OCTOBER, 2003 - 2022
D24 - CARSON




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
NOVEMBER, 2003 - 2022
D24 - CARSON
Cooling Degree Days
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Nov-03
Nov-04
Nov-05
Nov-06
Nov-07
Nov-08
Nov-09
Nov-10
Nov-11
Nov-12
Nov-13
Nov-14
Nov-15
Nov-16
Nov-17
Nov-18
Nov-19
Nov-20
Nov-21
Nov-22
Date

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
DECEMBER, 2003 - 2022
D24 - CARSON




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JANUARY, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK
Heating Degree Days
1,350.0
1,300.0
1,250.0
1,200.0
1,150.0
1,100.0
1,050.0
1,000.0
Date
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
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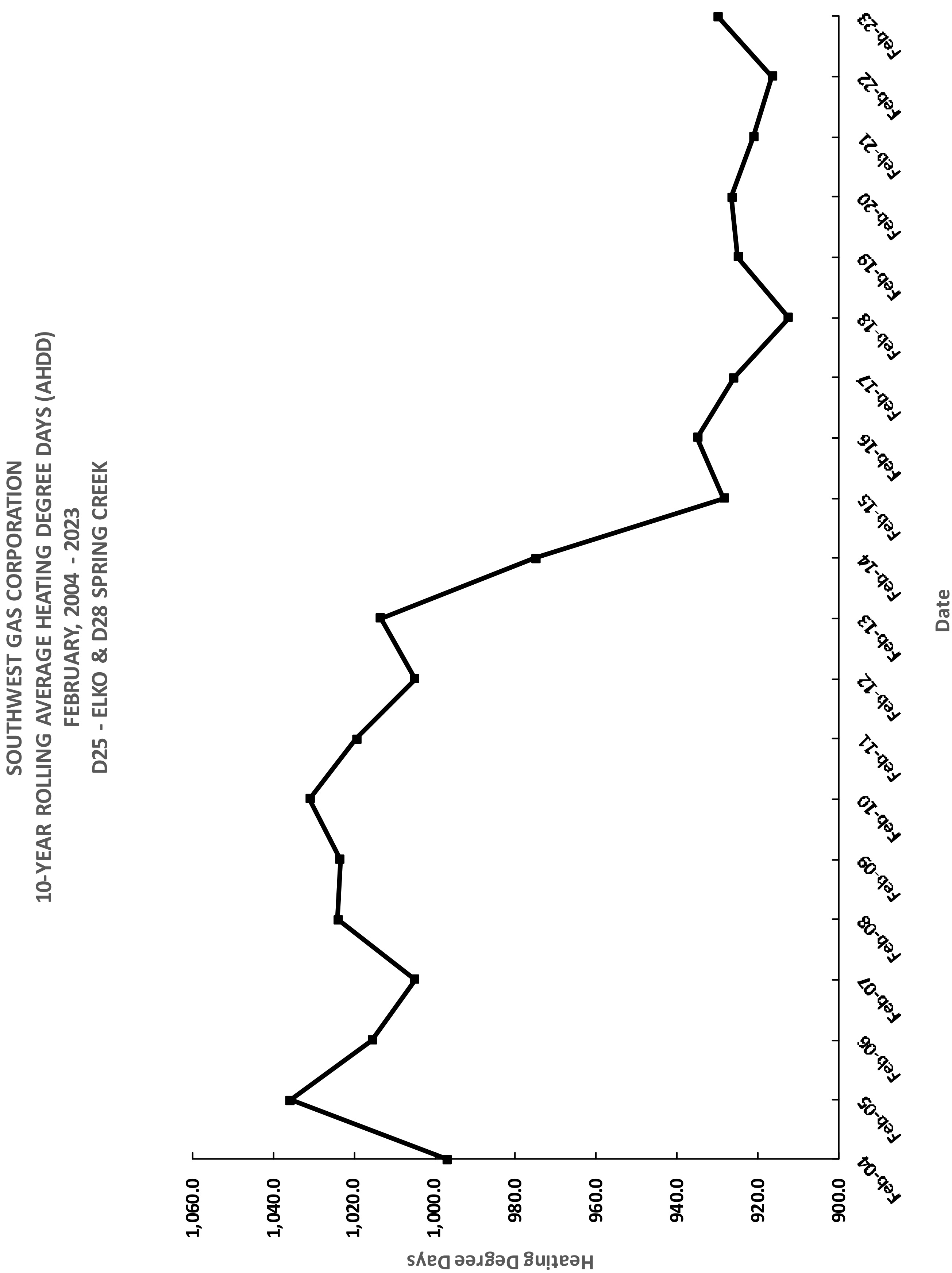
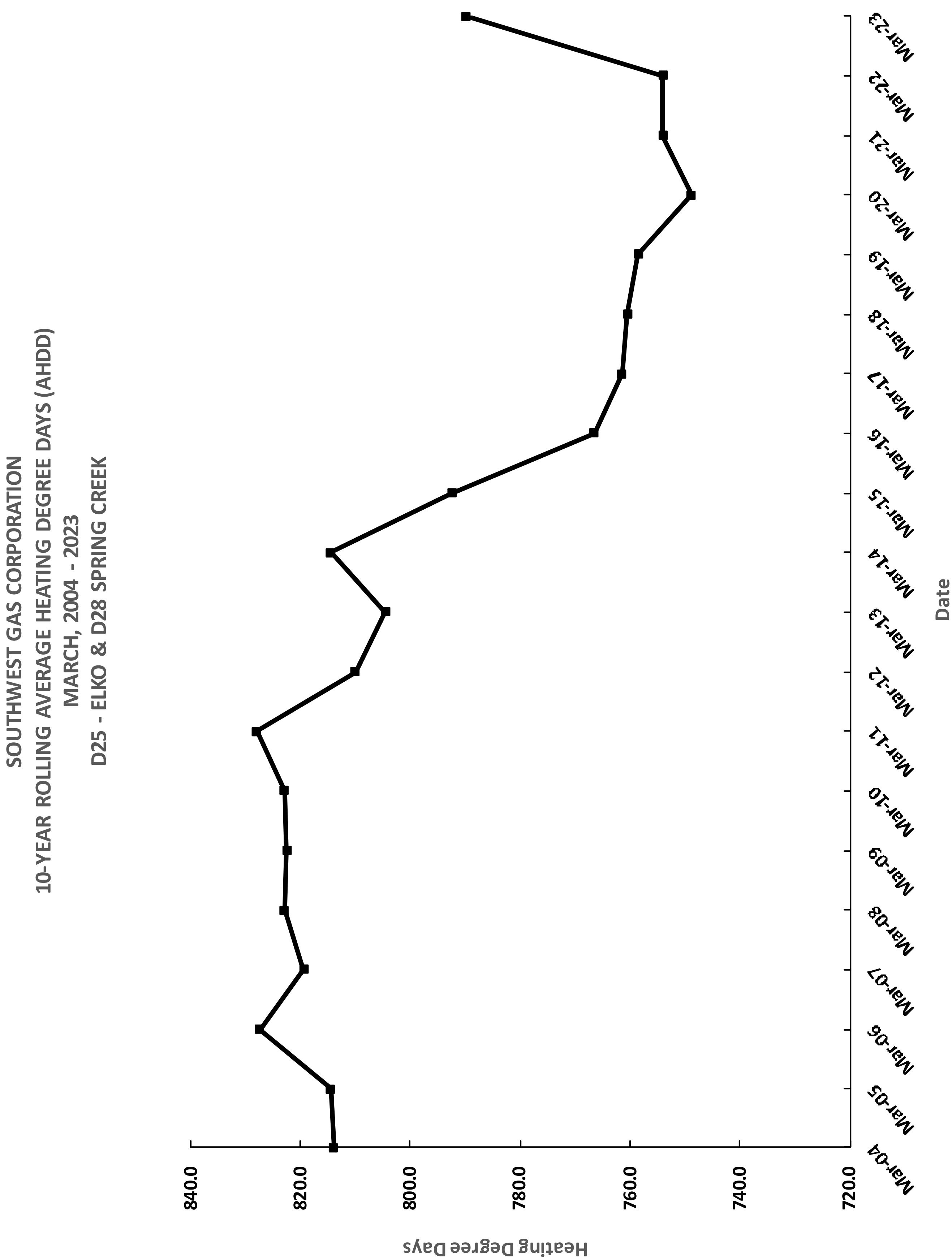
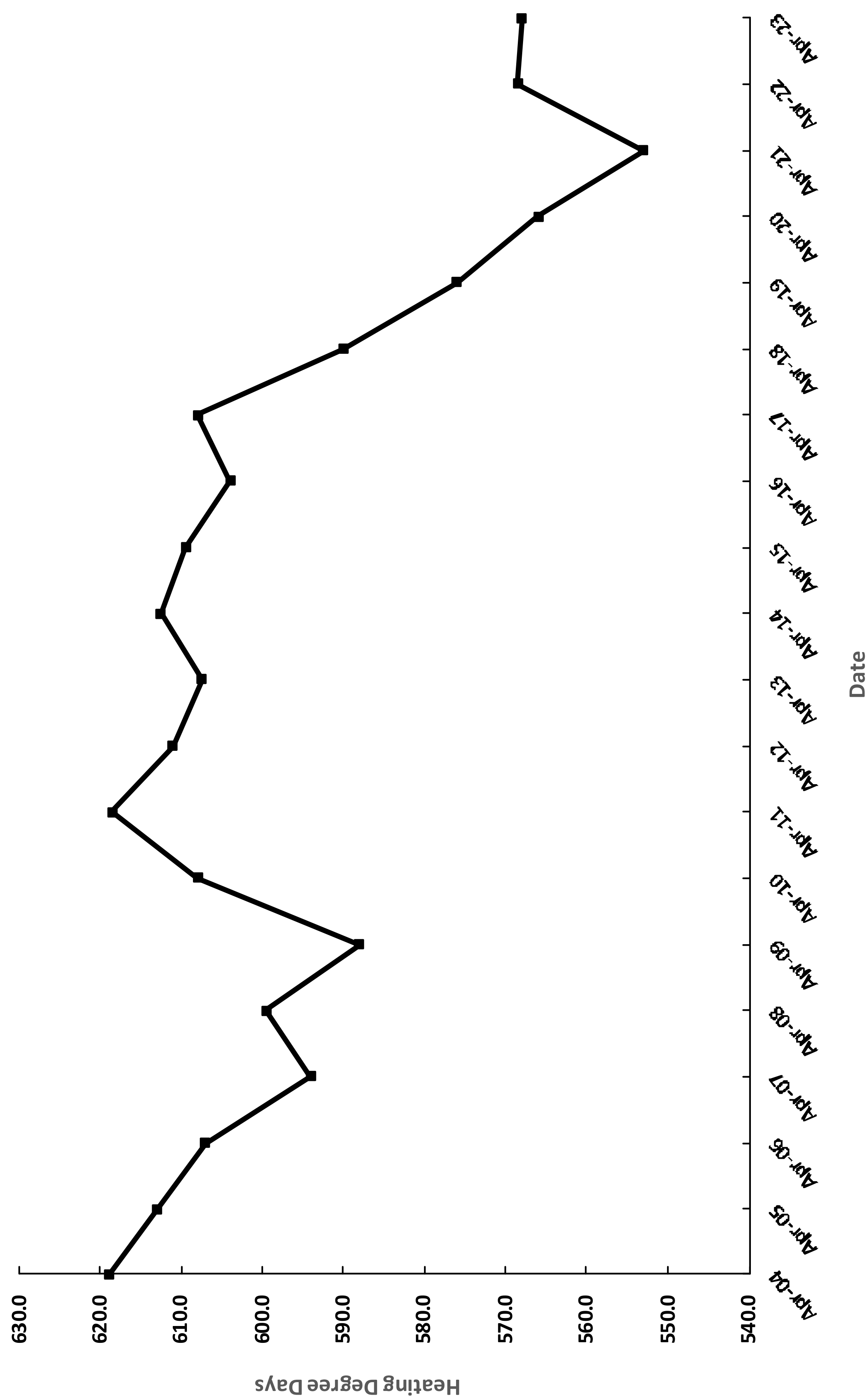
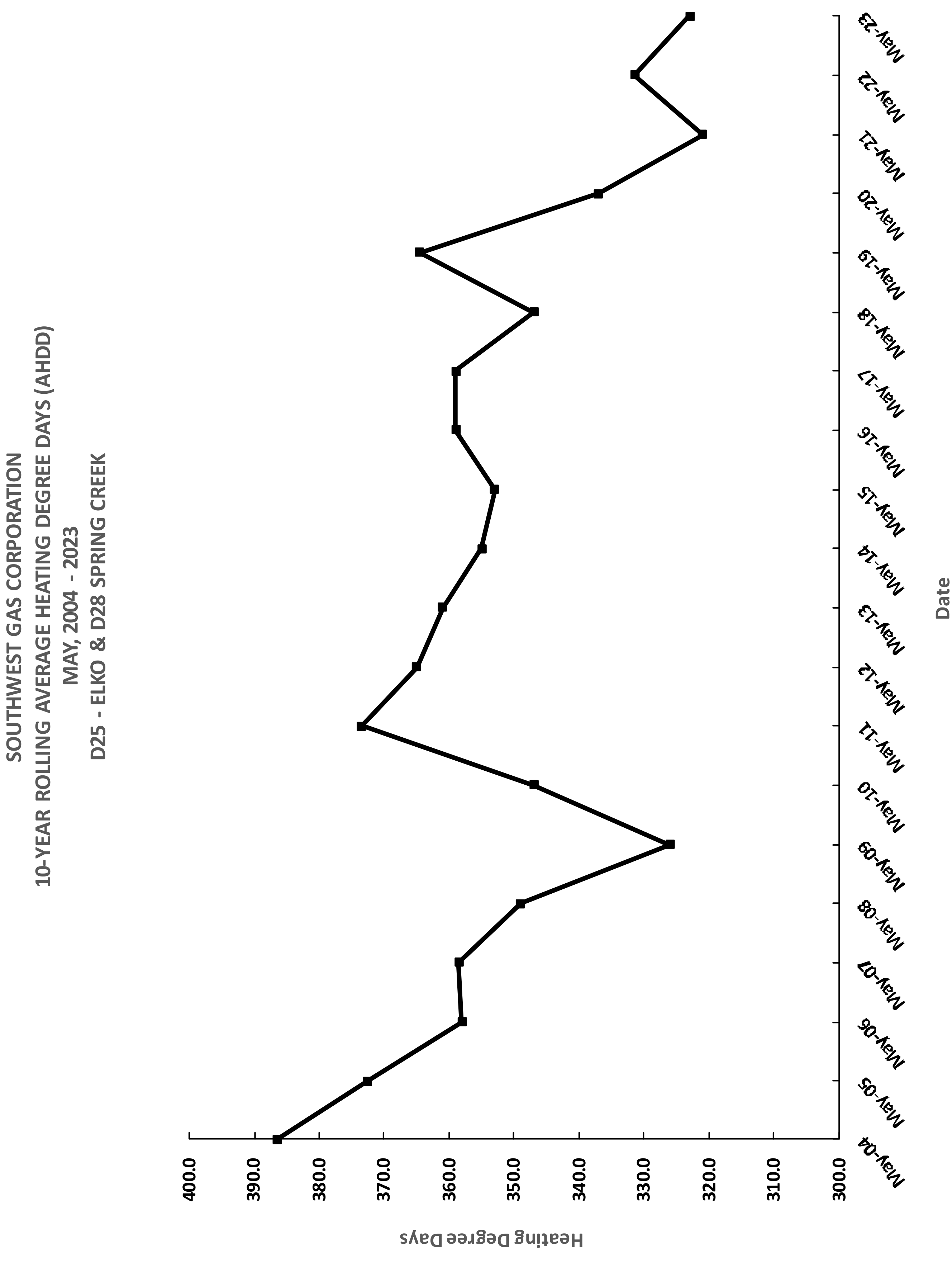
Jan-21
Jan-22
Jan-23


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK
Heating Degree Days
1,060.0
1,040.0
1,020.0
1,000.0
980.0
960.0
940.0
920.0
900.0
Date
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
Feb-13
Feb-14
Feb-15
Feb-16
Feb-17
Feb-18
Feb-19
Feb-20
Feb-21
Feb-22
Feb-23

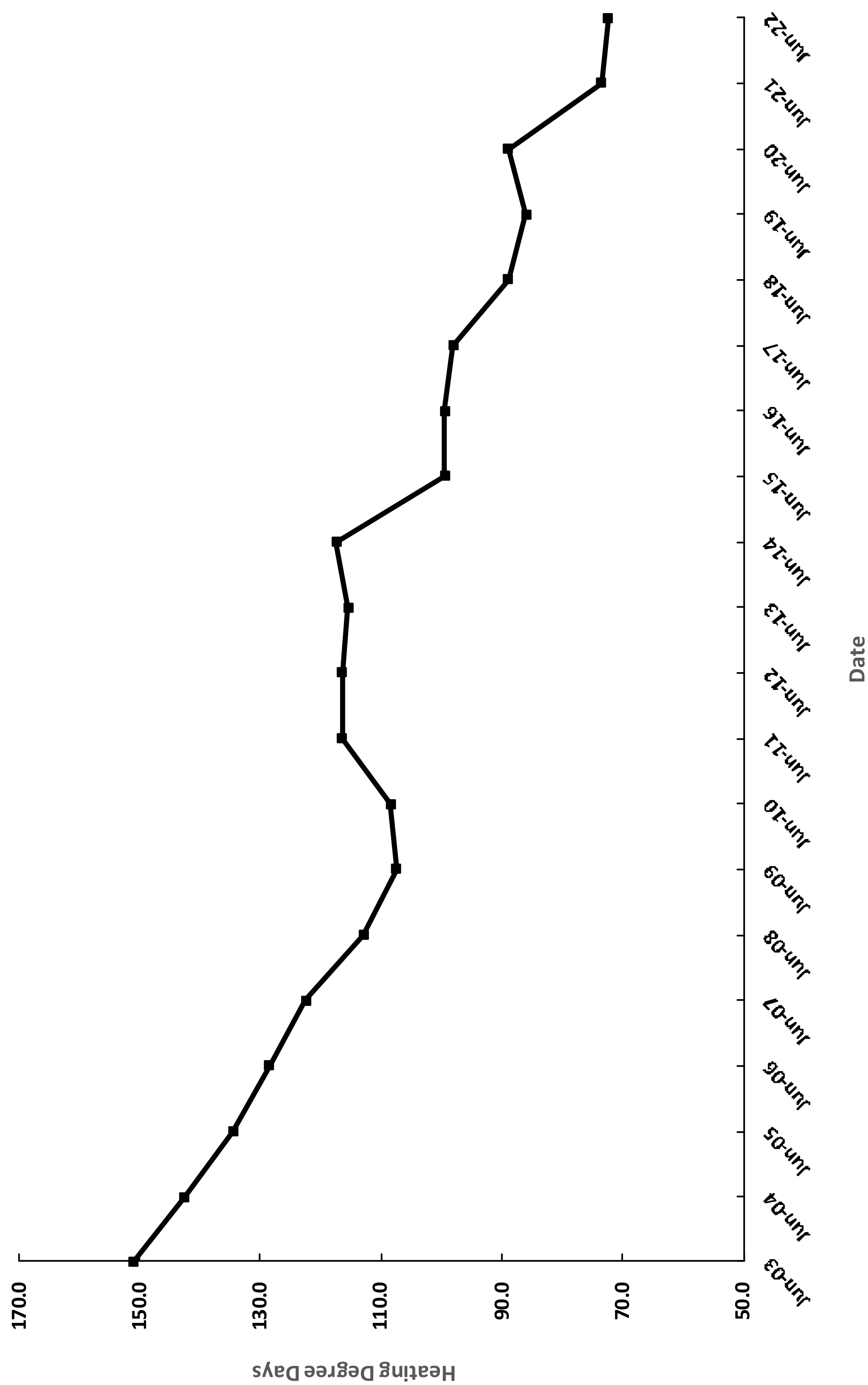

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK
Heating Degree Days
840.0
820.0
800.0
780.0
760.0
740.0
720.0
Date
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Mar-23

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK

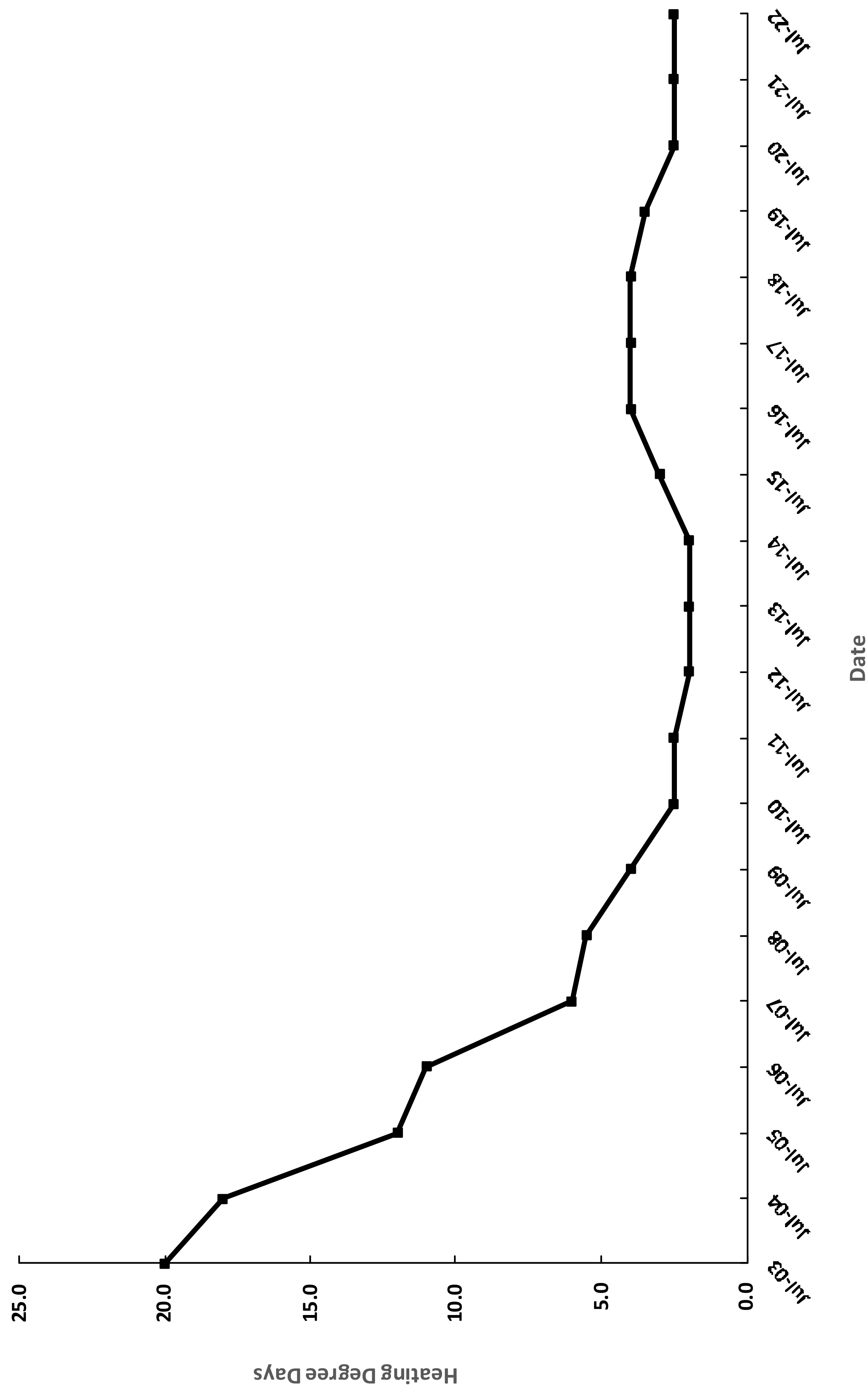


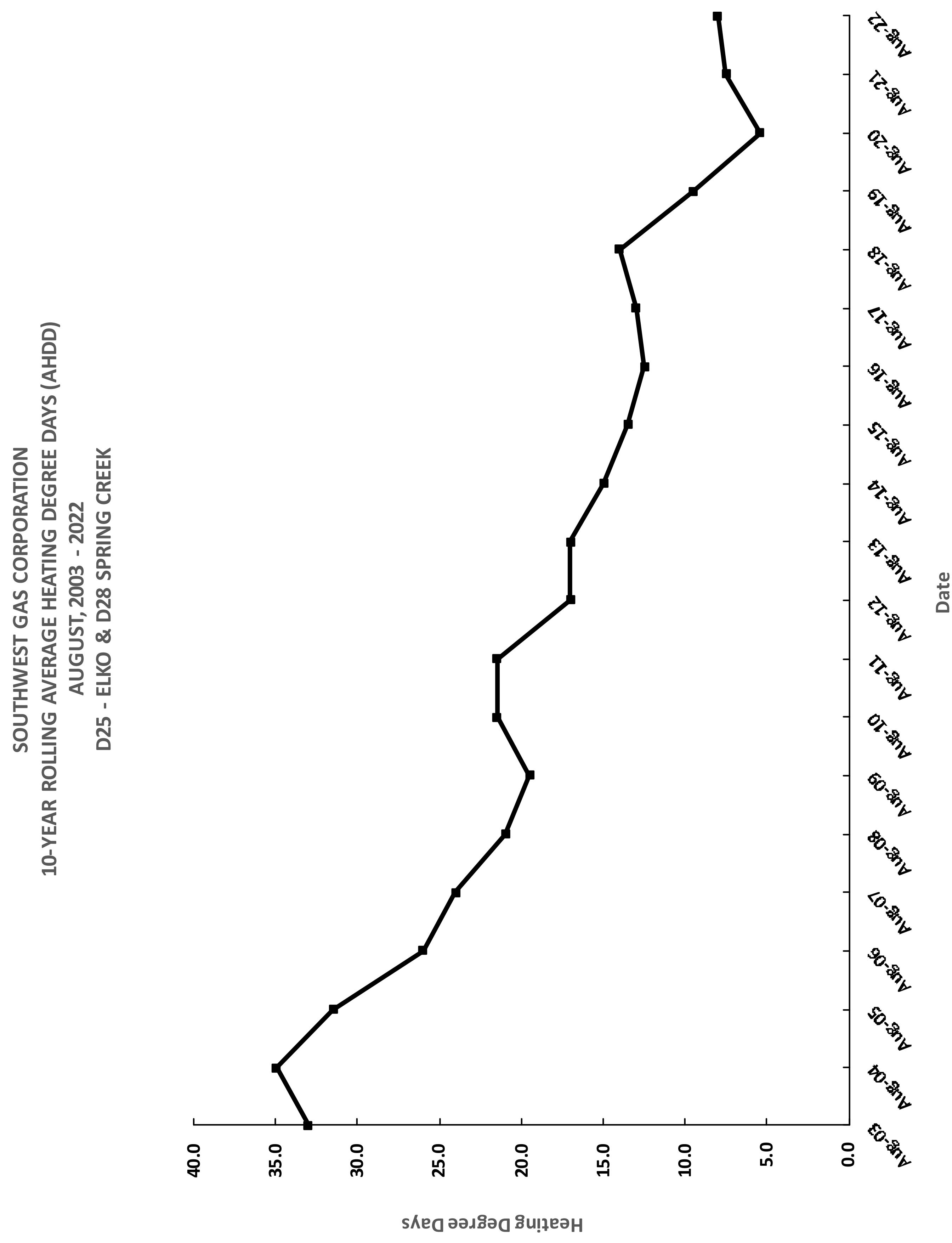

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MAY, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK
Heating Degree Days
400.0
390.0
380.0
370.0
360.0
350.0
340.0
330.0
320.0
310.0
300.0
May-04
May-05
May-06
May-07
May-08
May-09
May-10
May-11
May-12
May-13
May-14
May-15
May-16
May-17
May-18
May-19
May-20
May-21
May-22
May-23
Date

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK

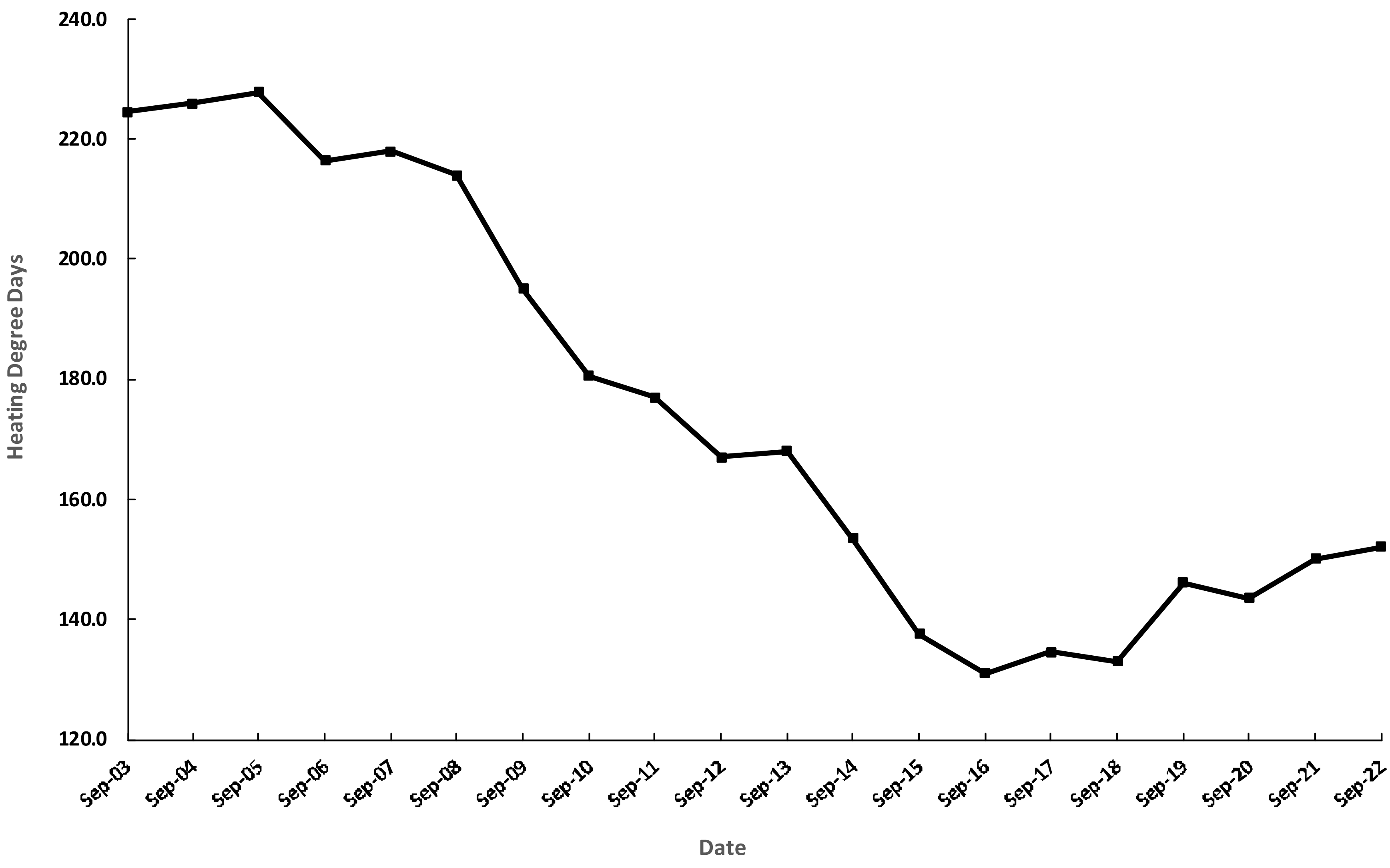


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK

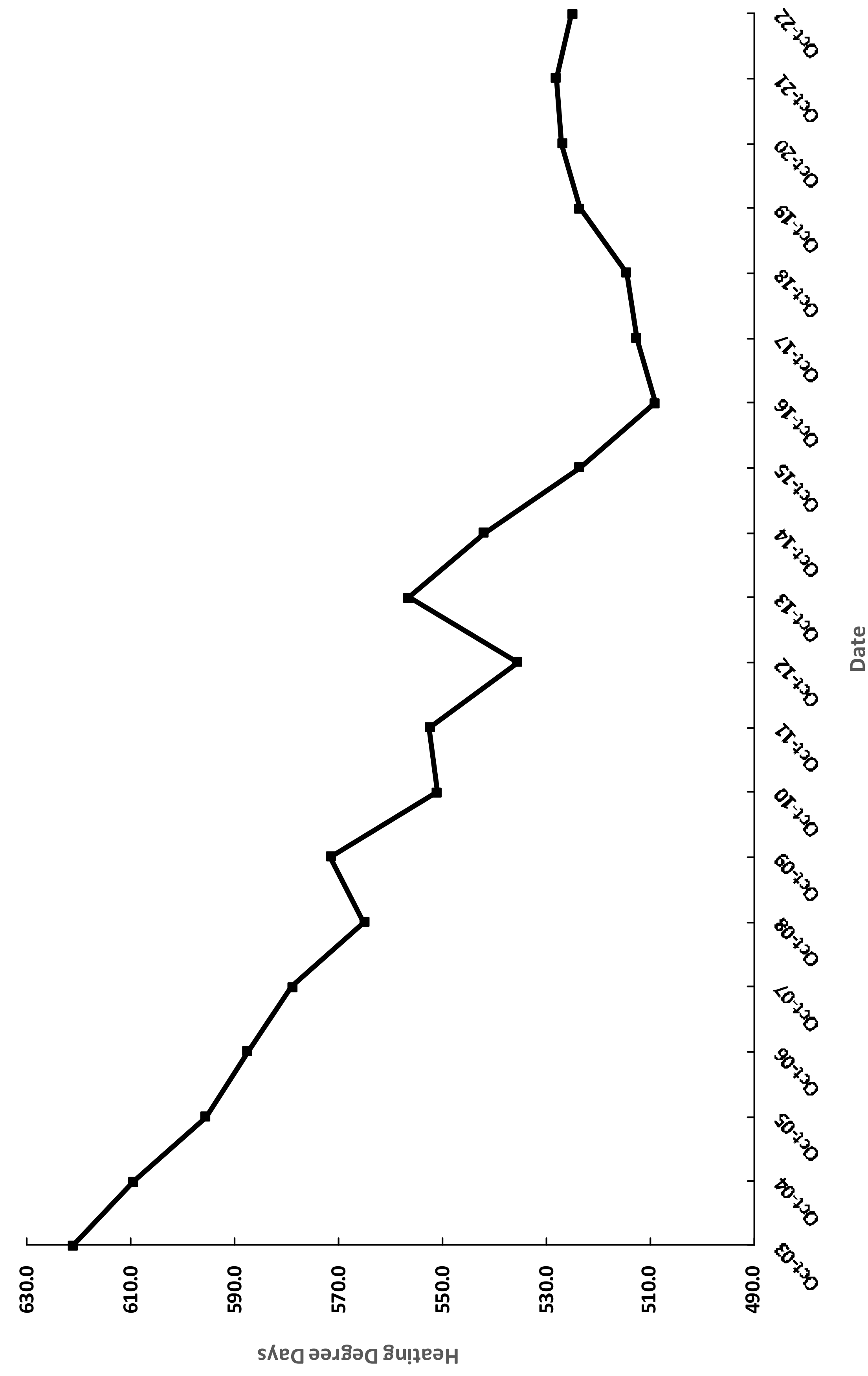



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK
Heating Degree Days
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Date
Aug-03
Aug-04
Aug-05
Aug-06
Aug-07
Aug-08
Aug-09
Aug-10
Aug-11
Aug-12
Aug-13
Aug-14
Aug-15
Aug-16
Aug-17
Aug-18
Aug-19
Aug-20
Aug-21
Aug-22

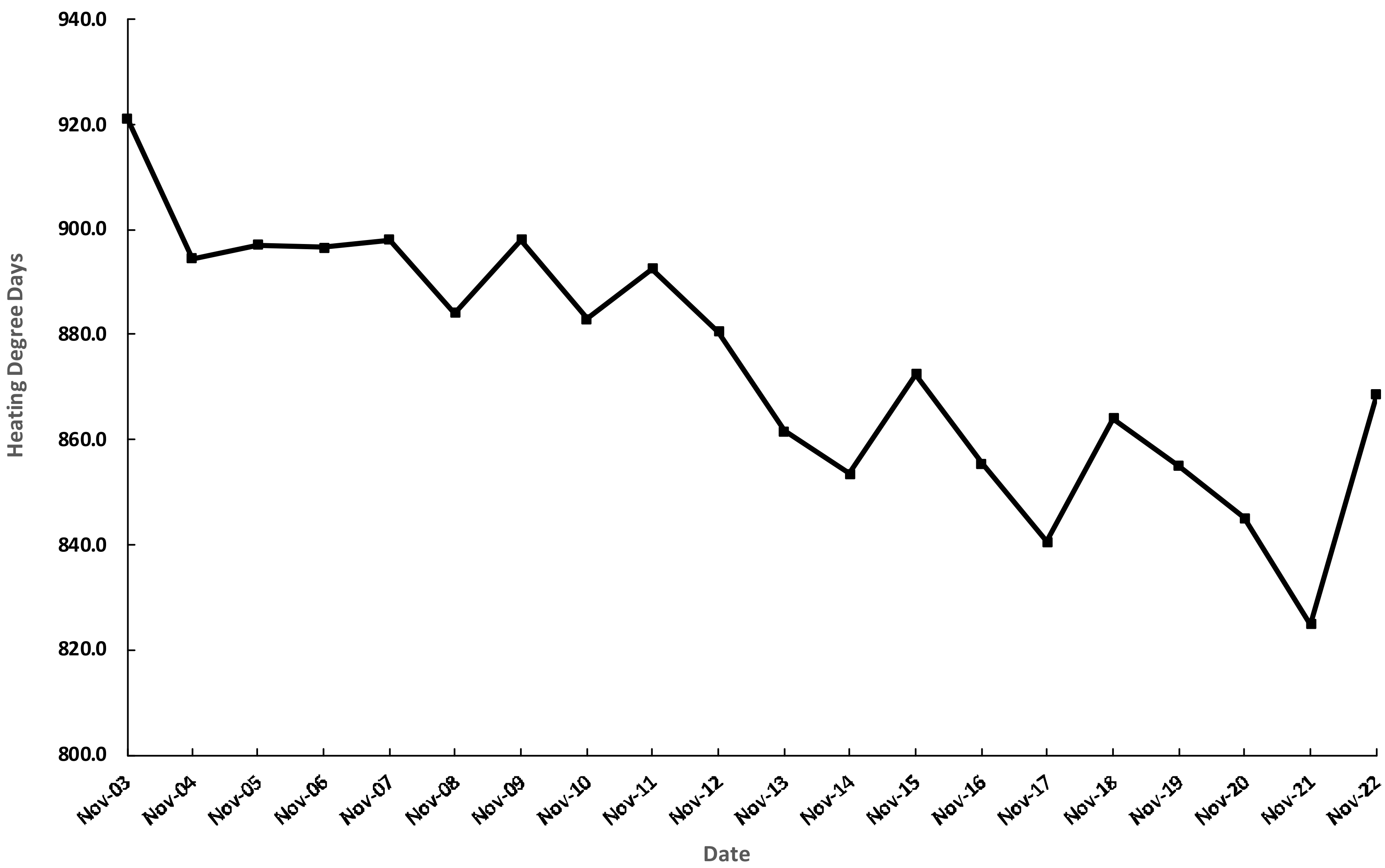
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK

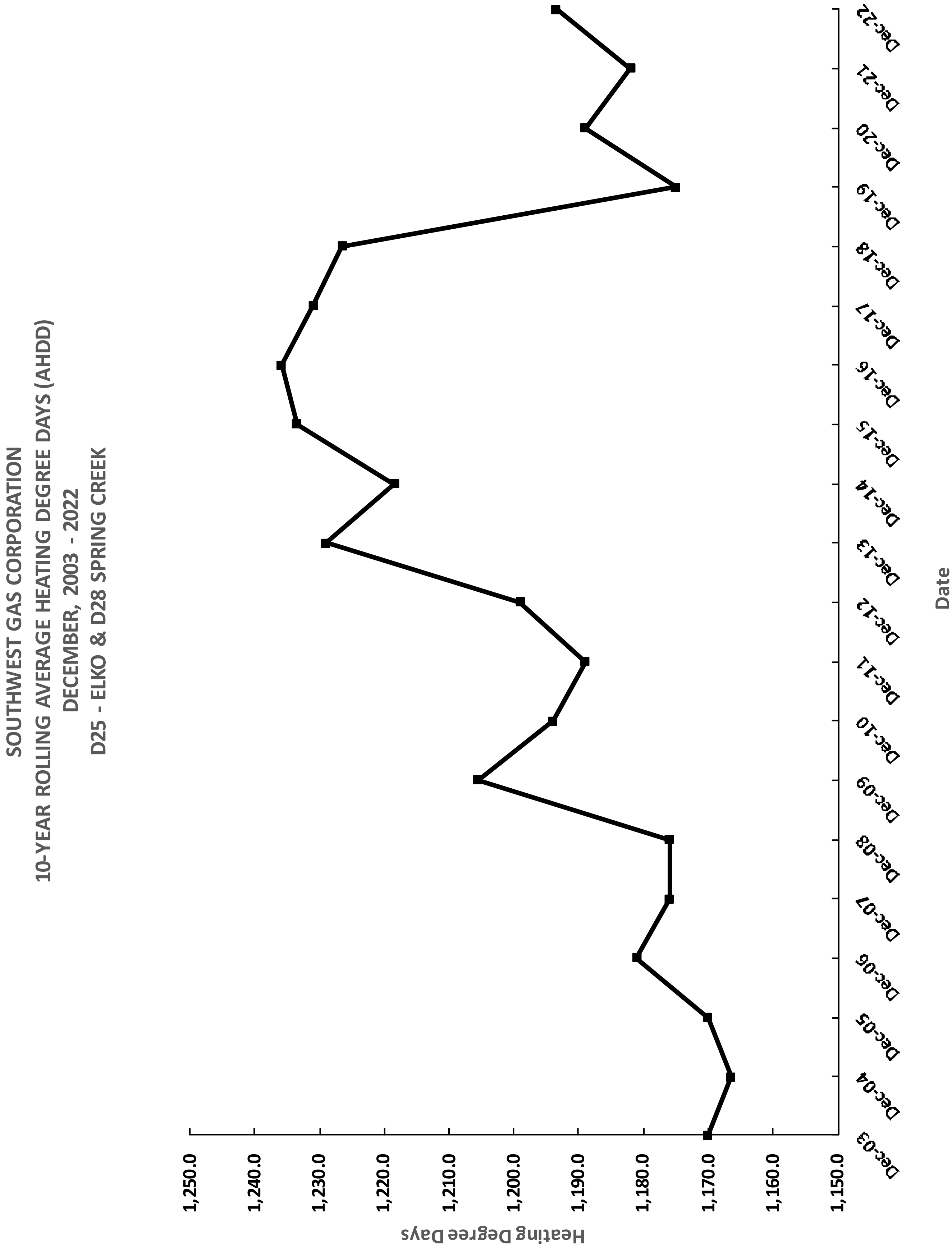


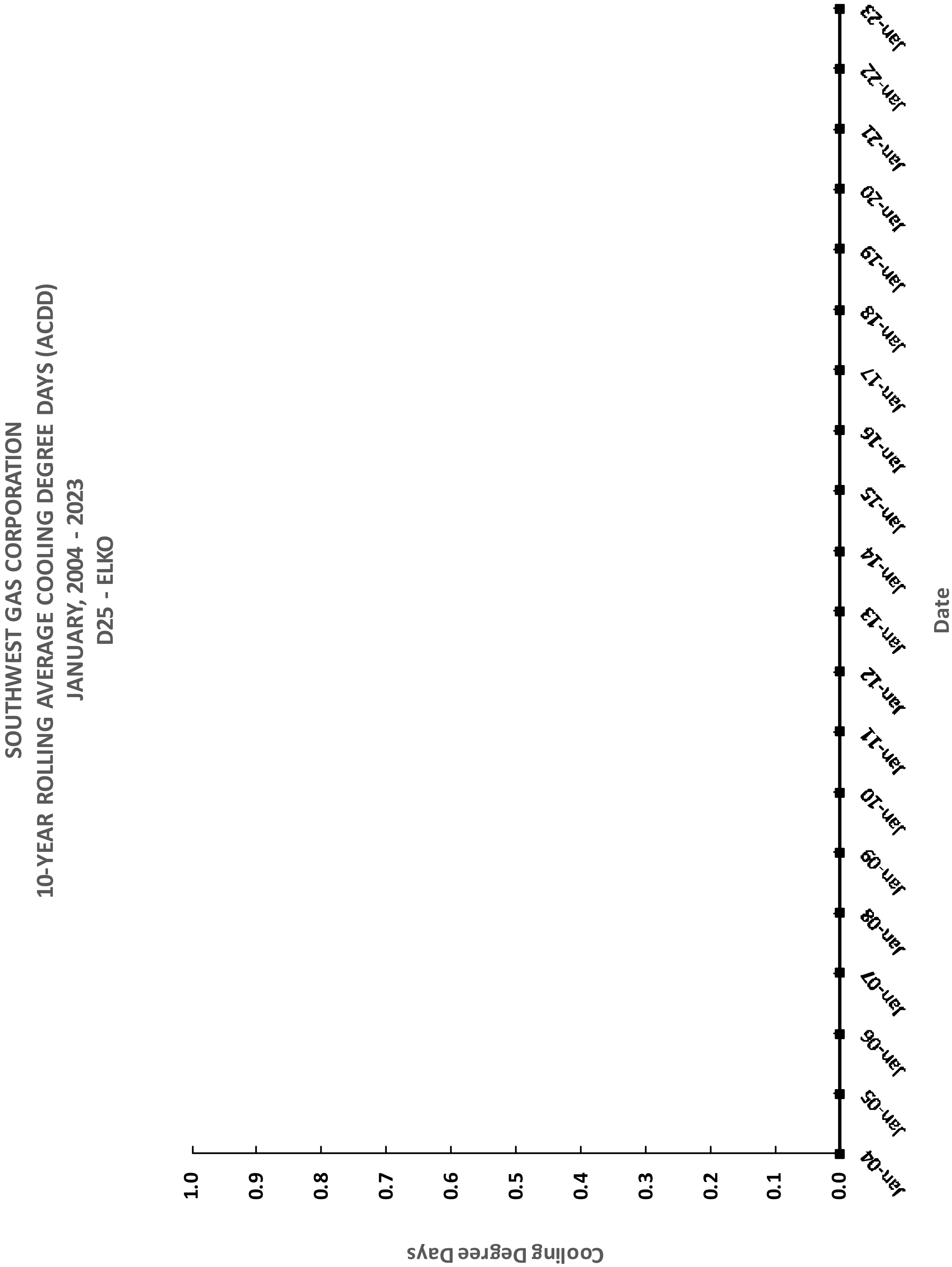
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK



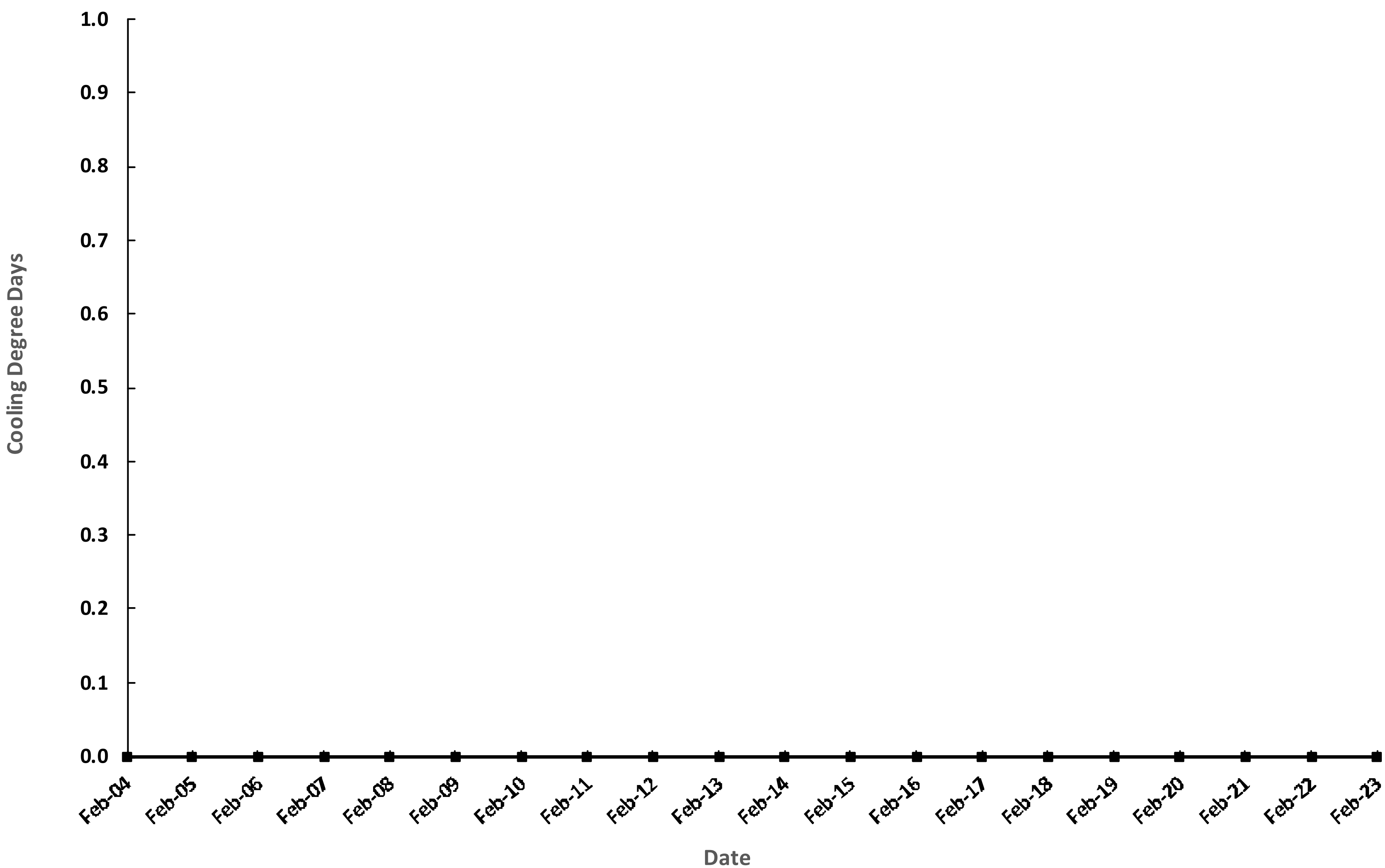
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK



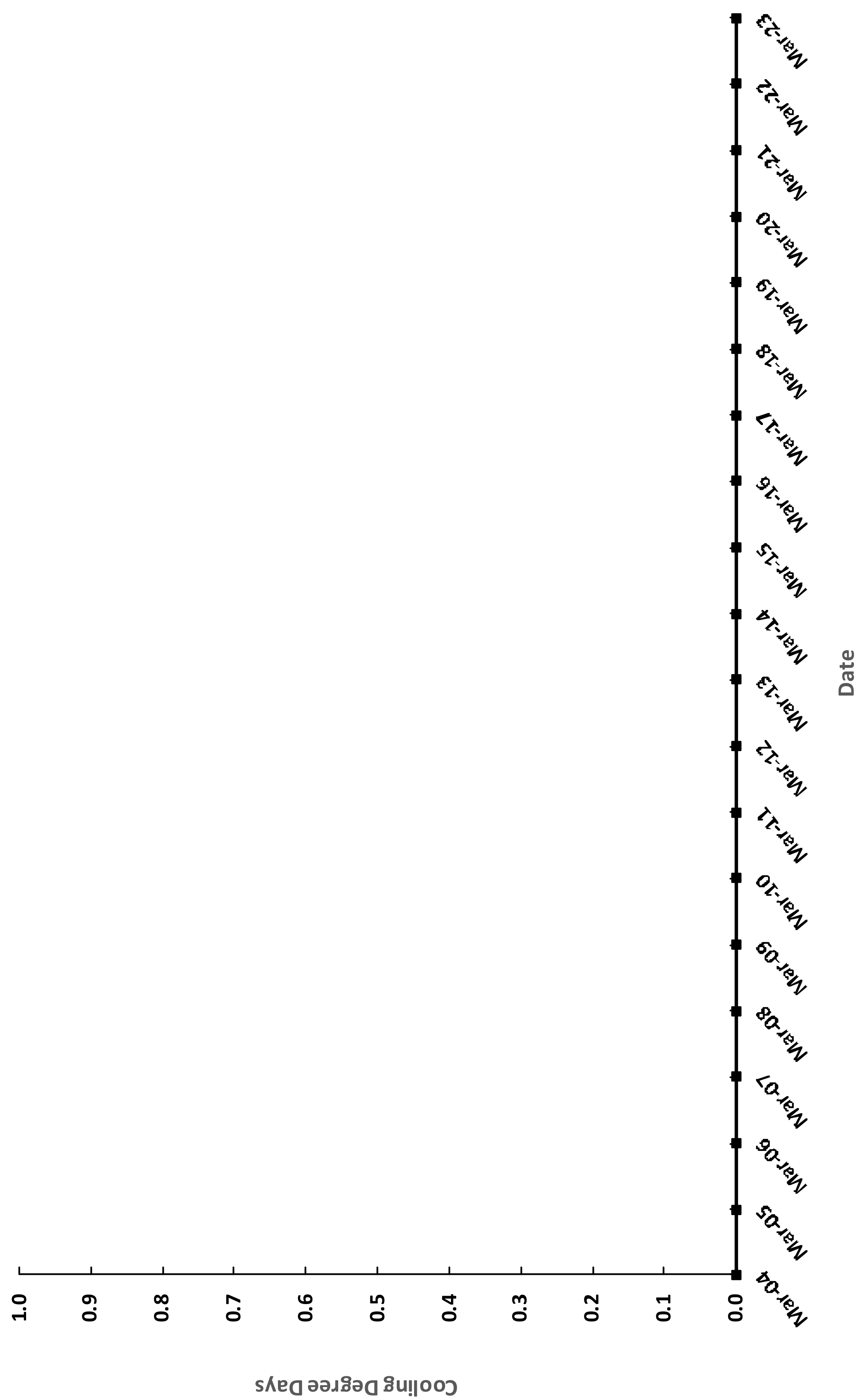

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
DECEMBER, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK
Heating Degree Days
1,250.0
1,240.0
1,230.0
1,220.0
1,210.0
1,200.0
1,190.0
1,180.0
1,170.0
1,160.0
1,150.0
Date
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
Dec-16
Dec-17
Dec-18
Dec-19
Dec-20
Dec-21
Dec-22

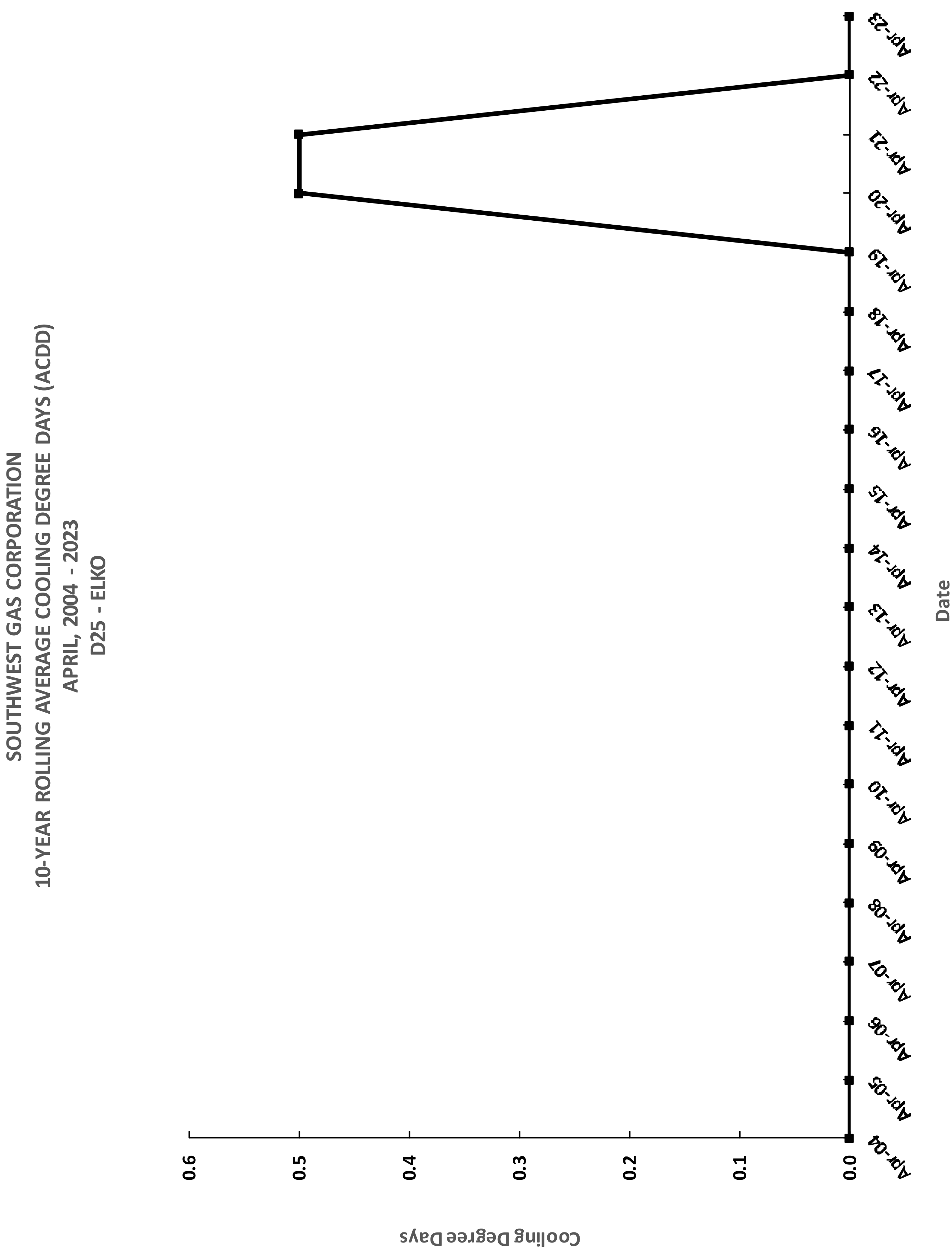

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JANUARY, 2004 - 2023
D25 - ELKO
Cooling Degree Days
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Date

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
FEBRUARY, 2004 - 2023
D25 - ELKO

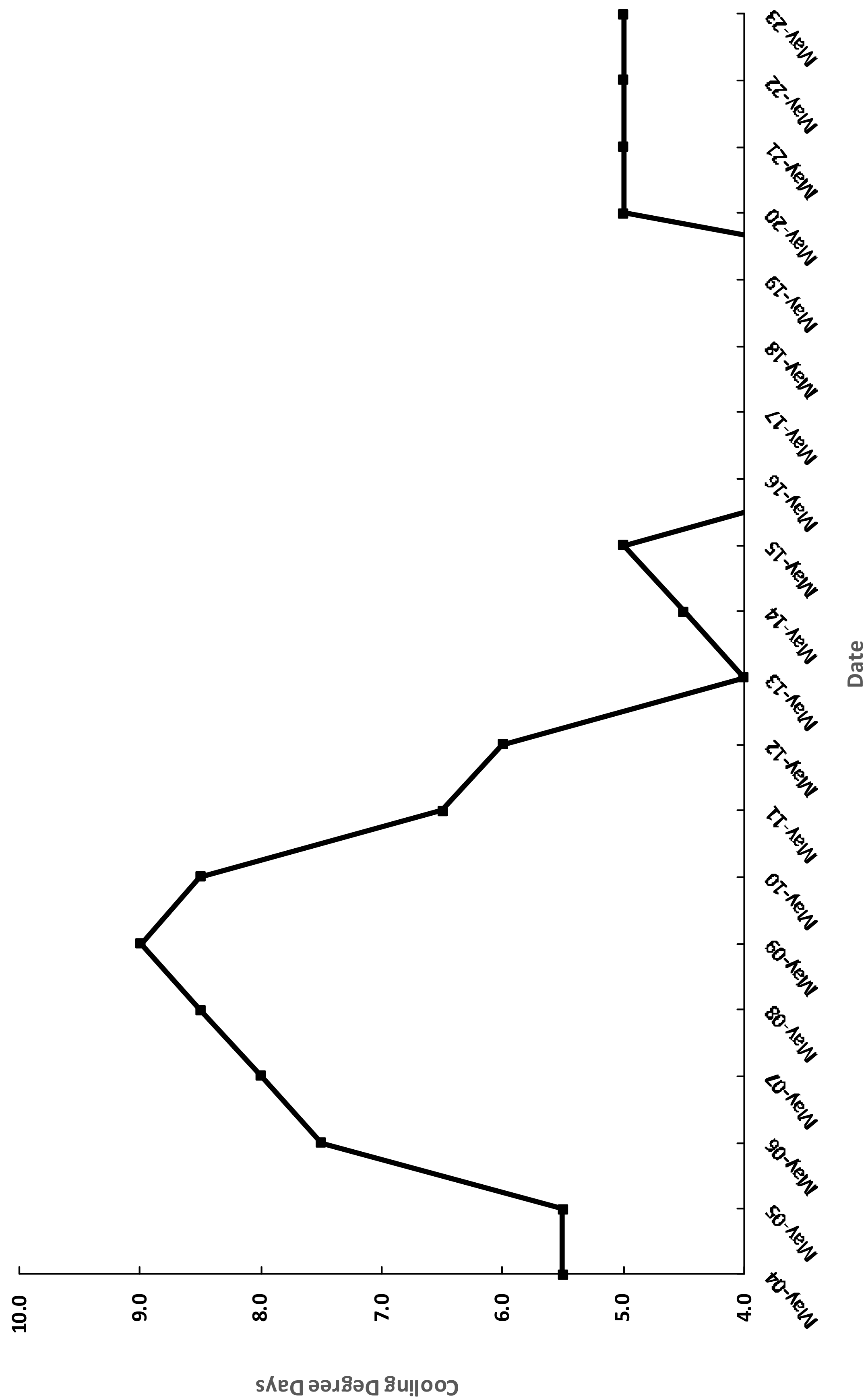


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
MARCH, 2004 - 2023
D25 - ELKO

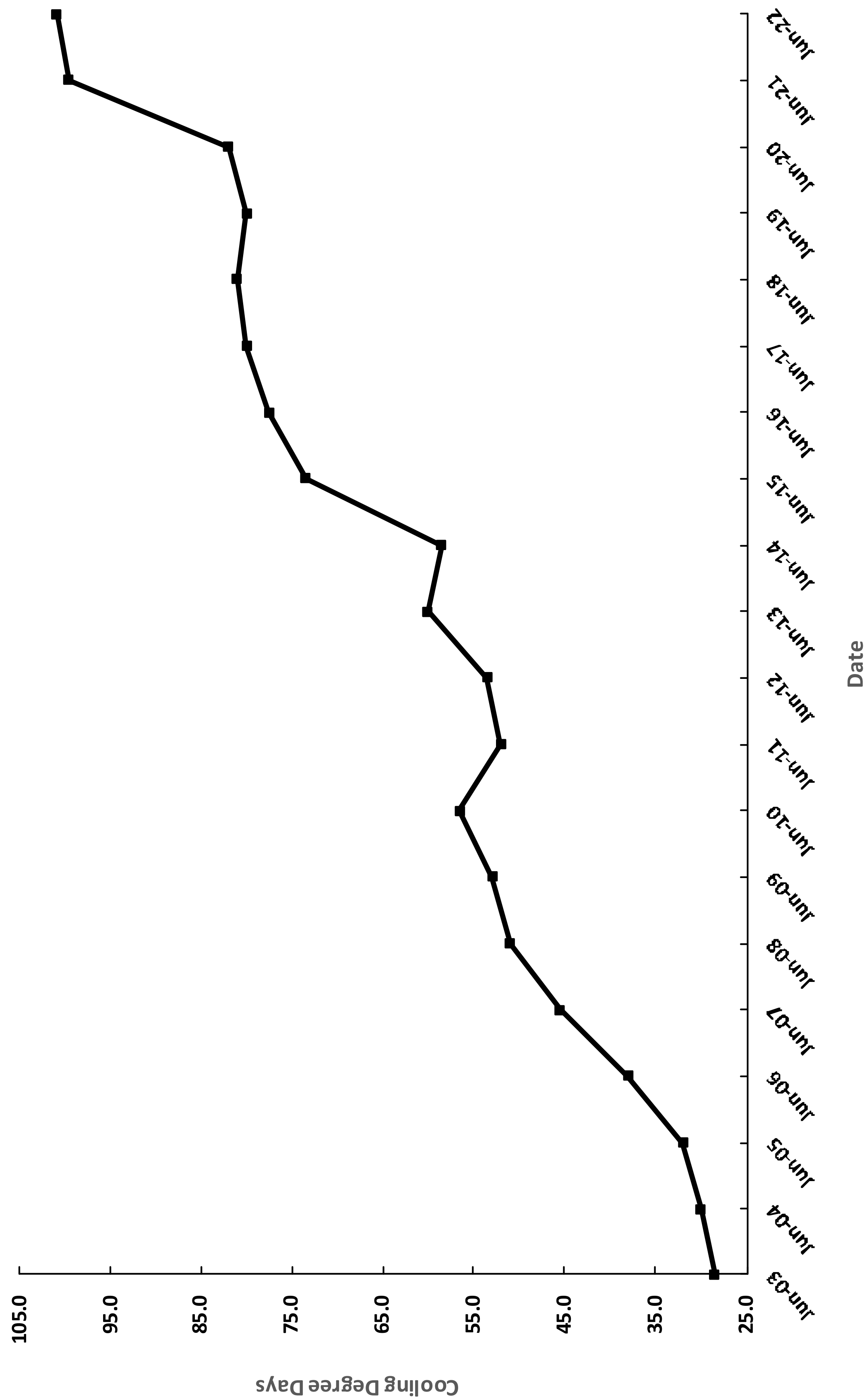



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
APRIL, 2004 - 2023
D25 - ELKO
Cooling Degree Days
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Date
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23

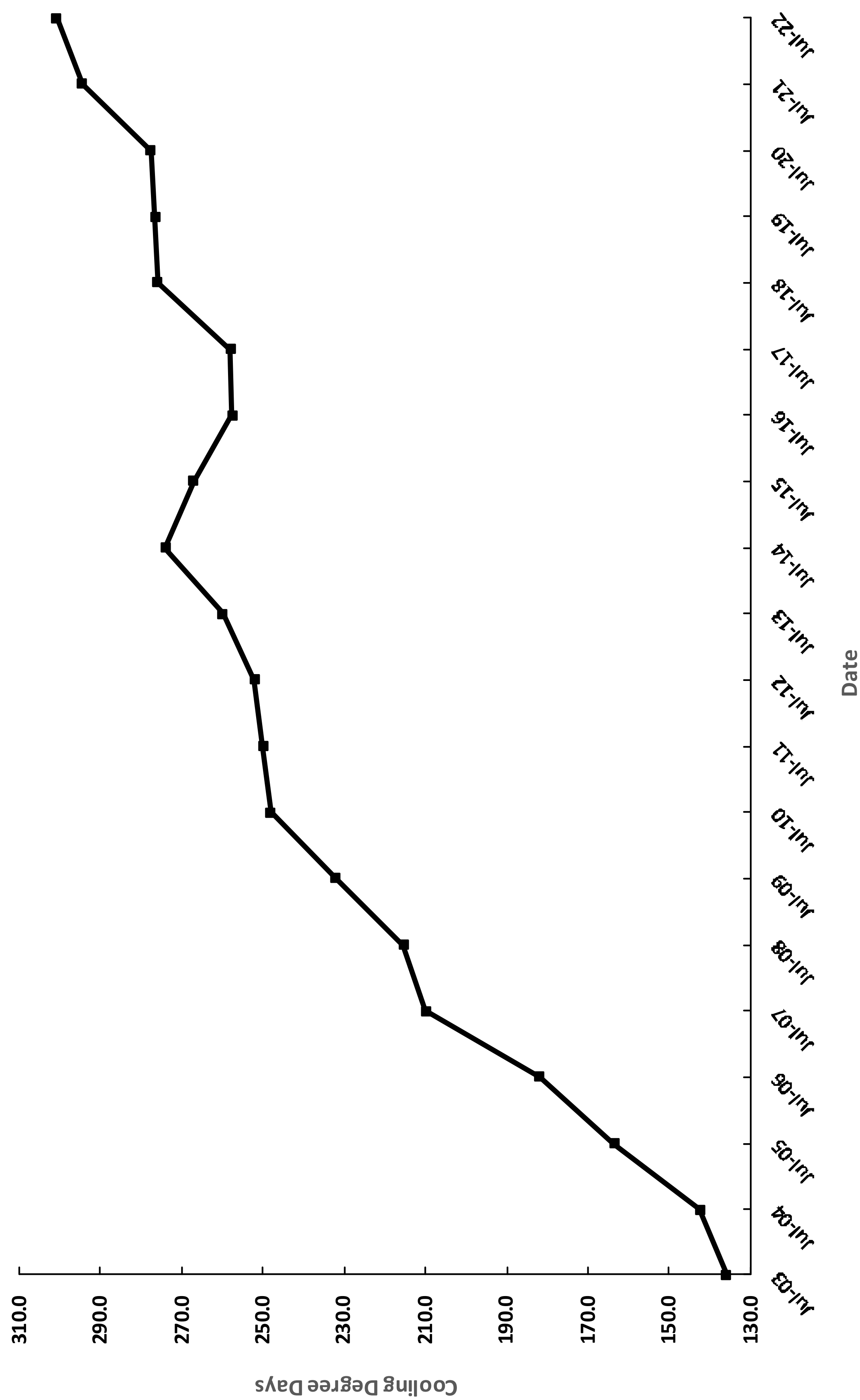
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
MAY, 2004 - 2023
D25 - ELKO

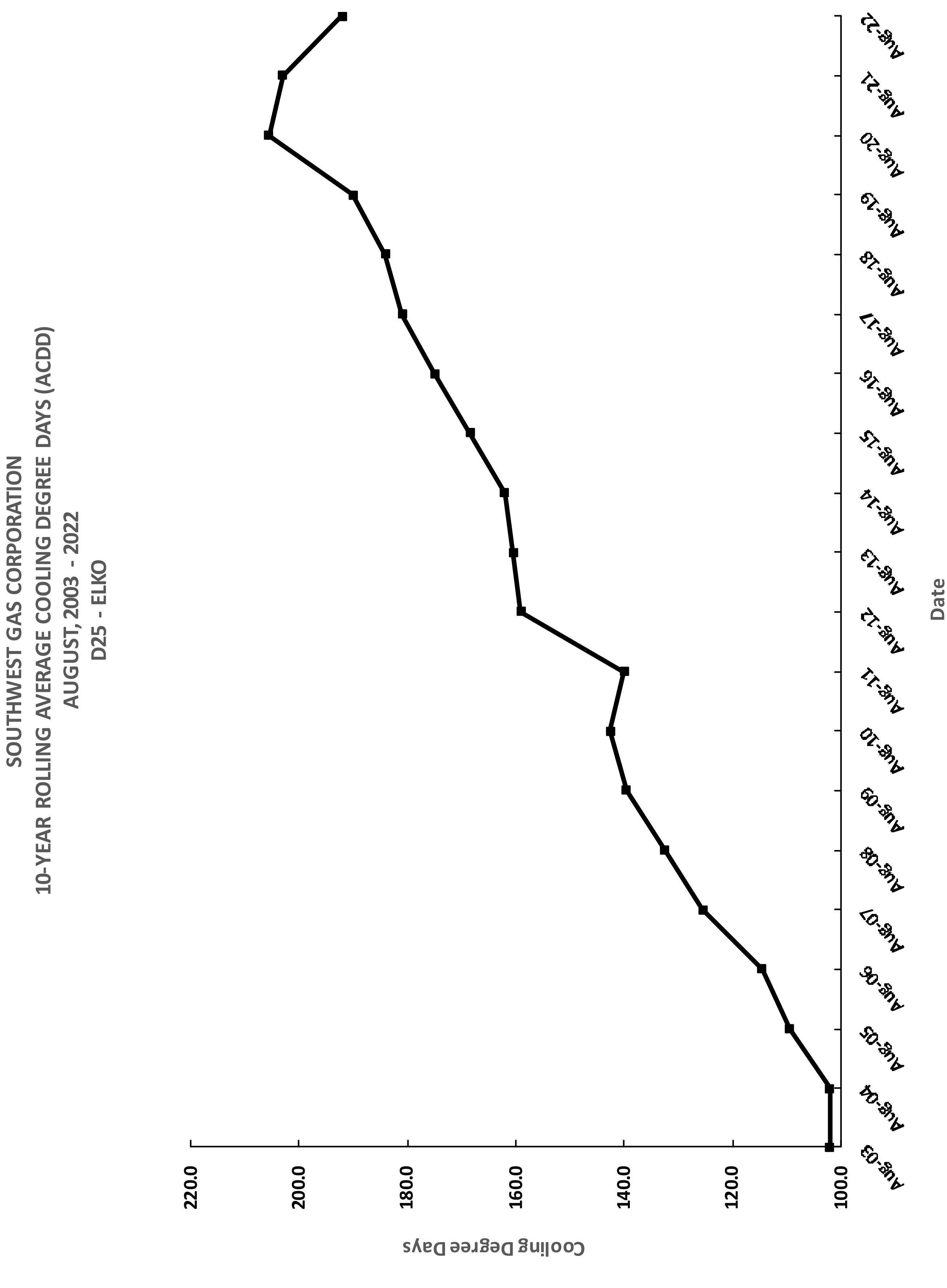


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JUNE, 2003 - 2022
D25 - ELKO



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JULY, 2003 - 2022
D25 - ELKO




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
AUGUST, 2003 - 2022
D25 - ELKO
Cooling Degree Days
220.0
200.0
180.0
160.0
140.0
120.0
100.0
Aug-03
Aug-04
Aug-05
Aug-06
Aug-07
Aug-08
Aug-09
Aug-10
Aug-11
Aug-12
Aug-13
Aug-14
Aug-15
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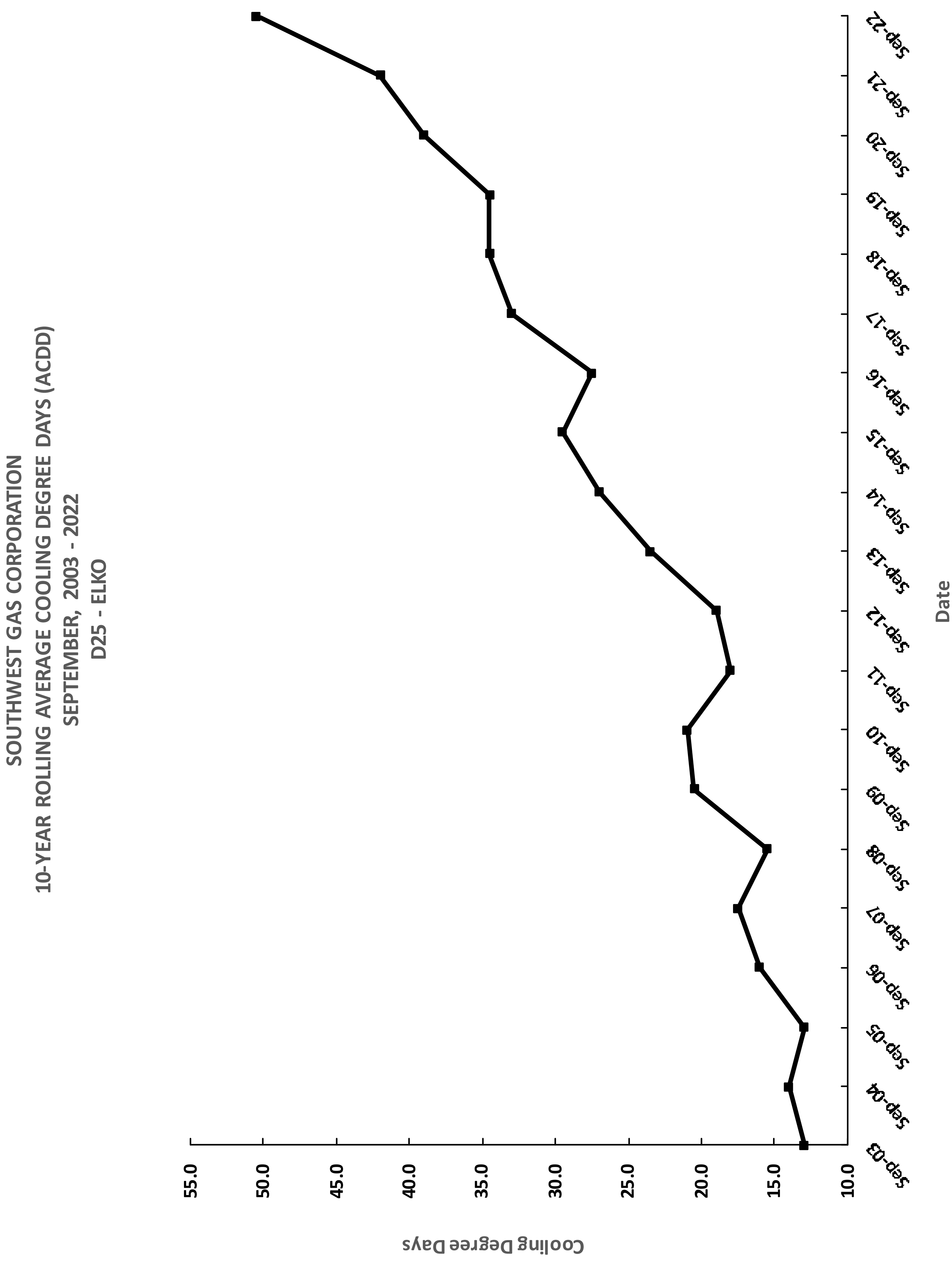
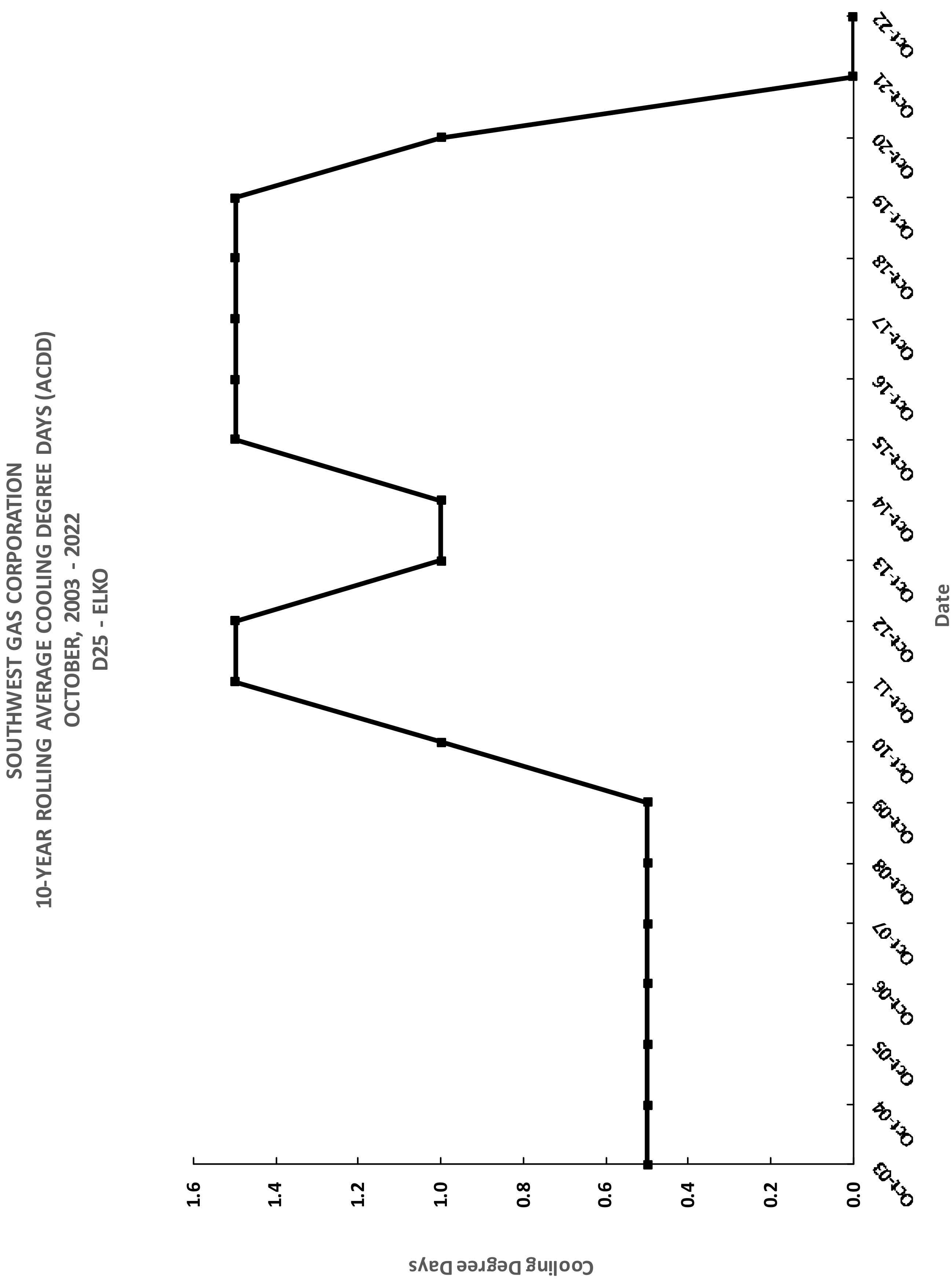
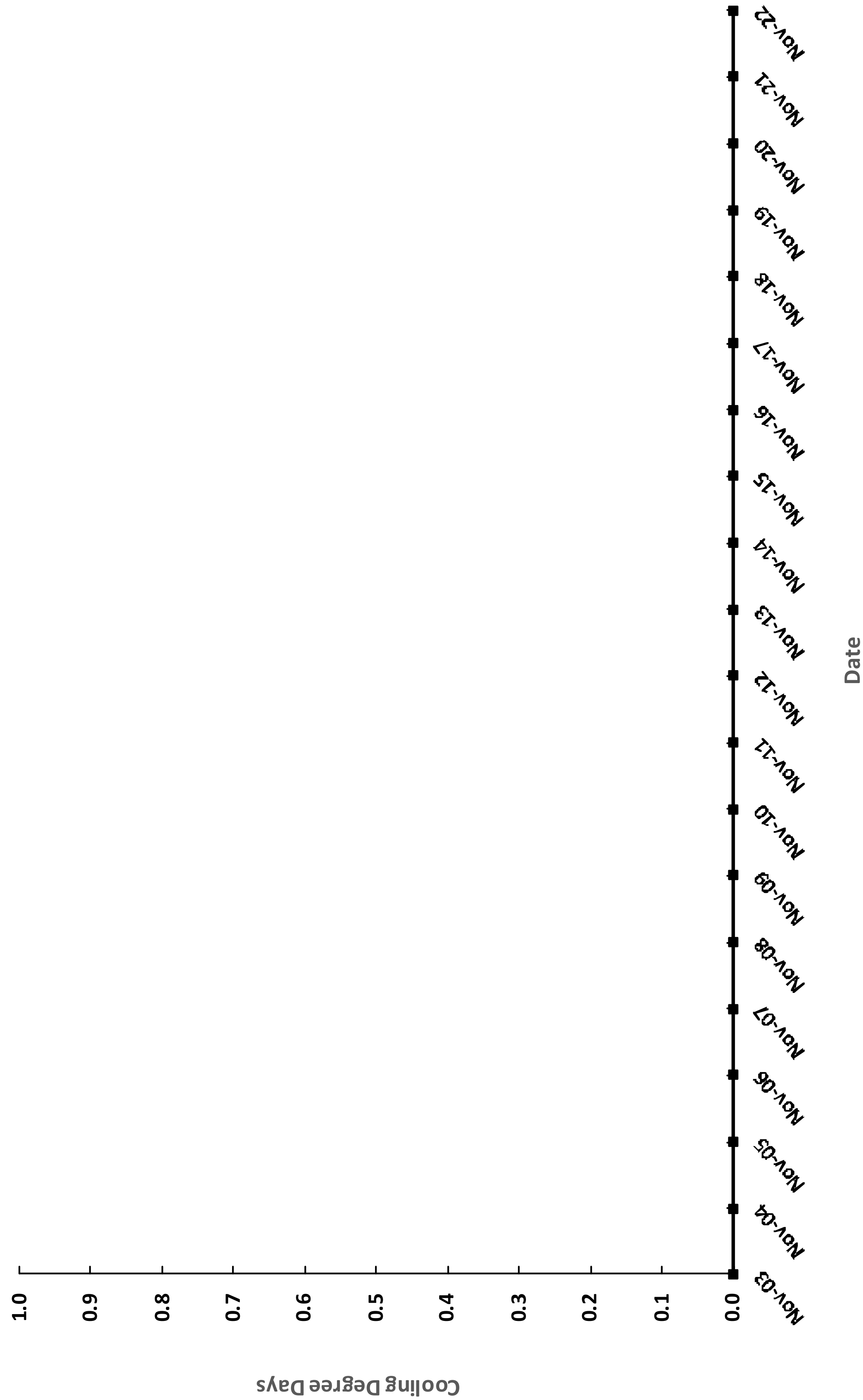
Aug-20
Aug-21
Aug-22
Date

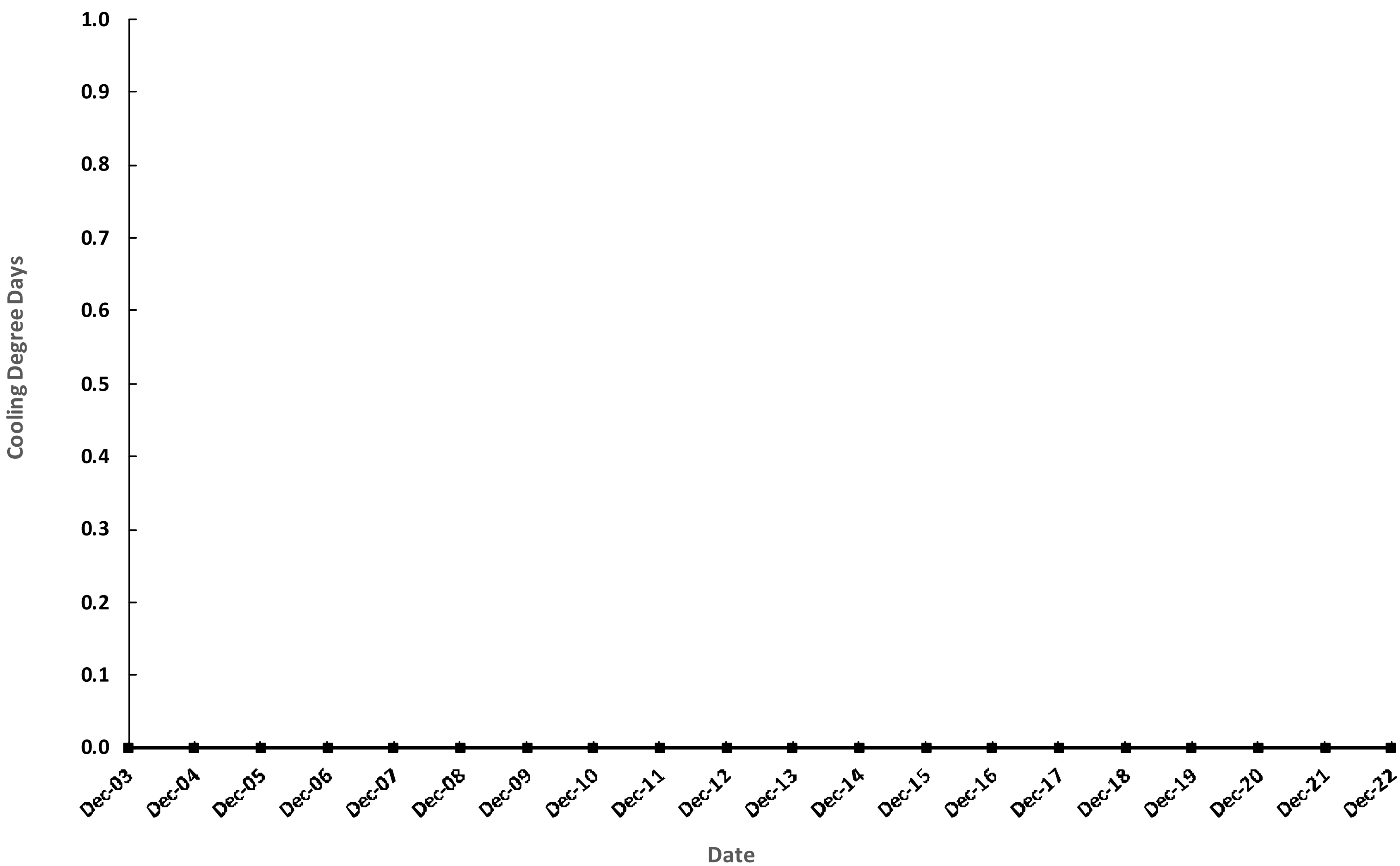

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
SEPTEMBER, 2003 - 2022
D25 - ELKO
Cooling Degree Days
55.0
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
Sep-17
Sep-18
Sep-19
Sep-20
Sep-21
Sep-22
Date

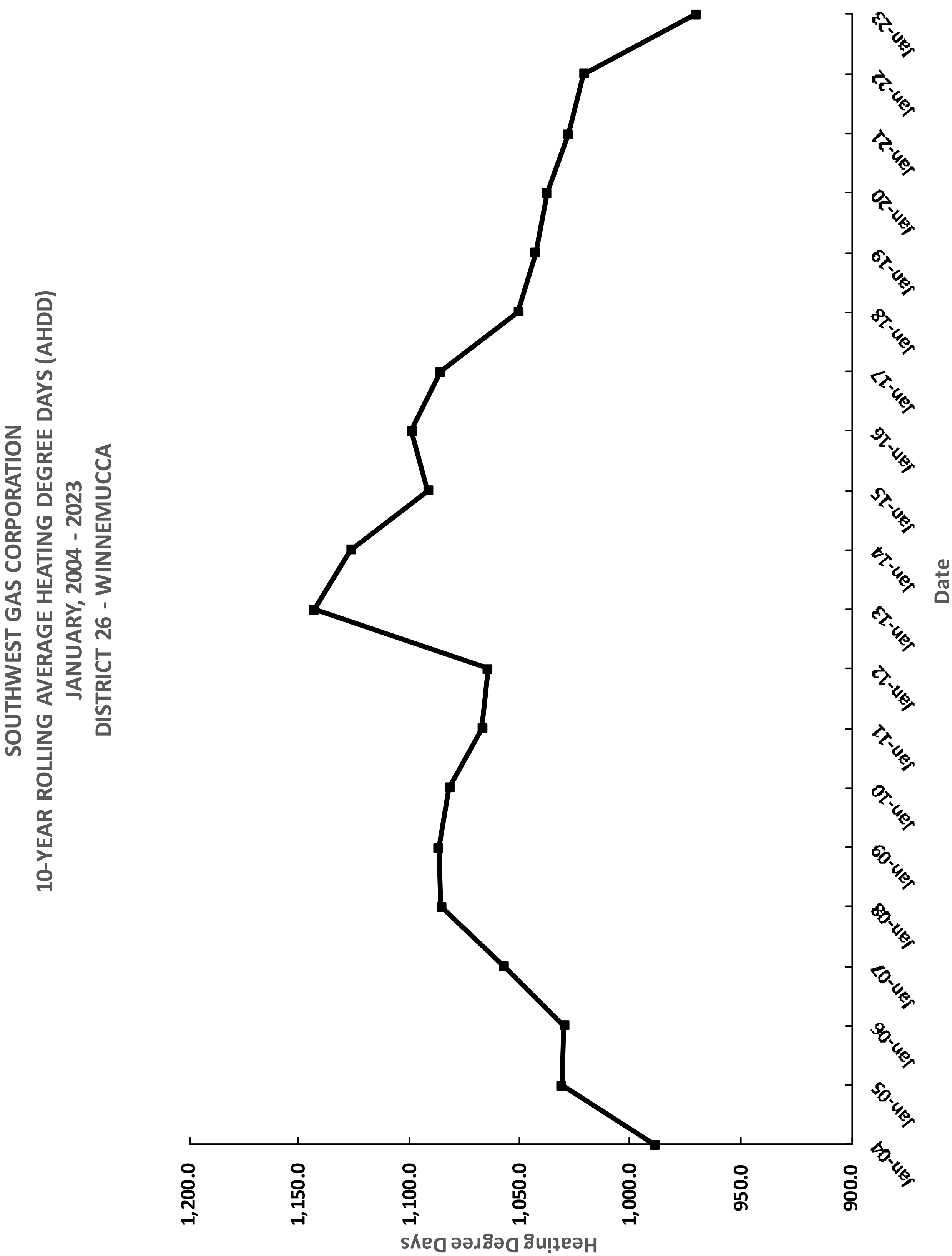

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
OCTOBER, 2003 - 2022
D25 - ELKO
Cooling Degree Days
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Oct-03
Oct-04
Oct-05
Oct-06
Oct-07
Oct-08
Oct-09
Oct-10
Oct-11
Oct-12
Oct-13
Oct-14
Oct-15
Oct-16
Oct-17
Oct-18
Oct-19
Oct-20
Oct-21
Oct-22
Date

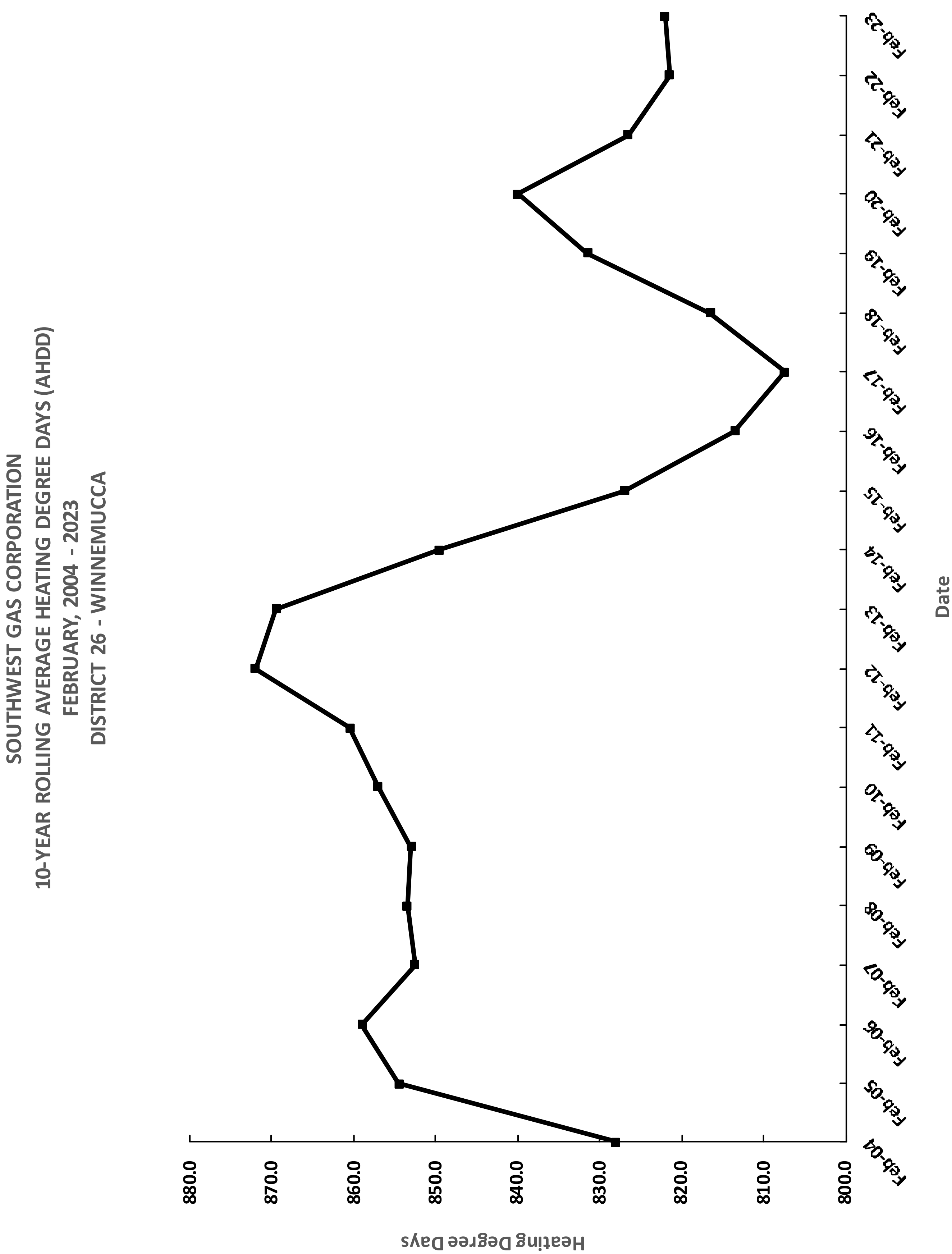
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
NOVEMBER, 2003 - 2022
D25 - ELKO

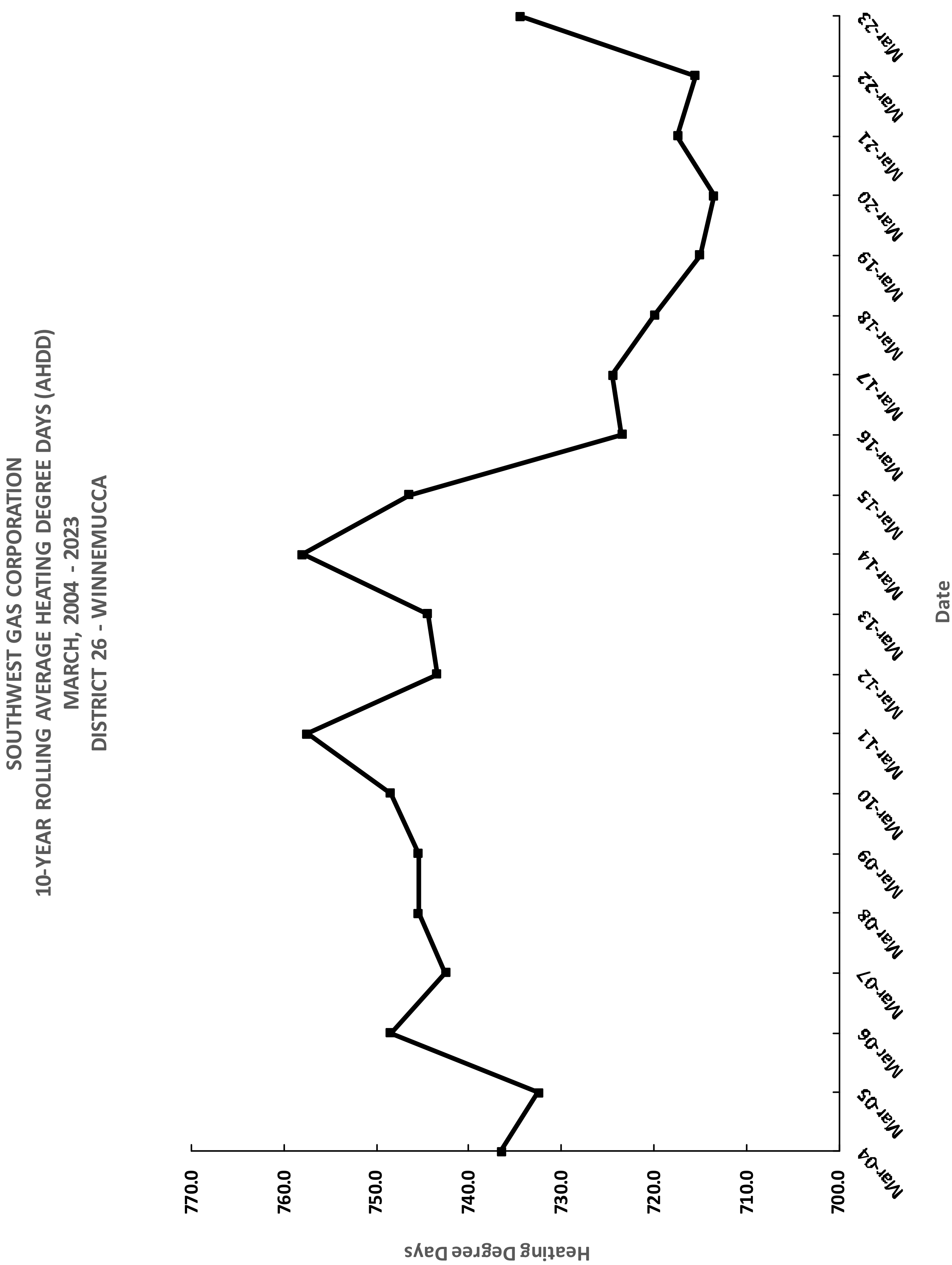


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
DECEMBER, 2003 - 2022
D25 - ELKO

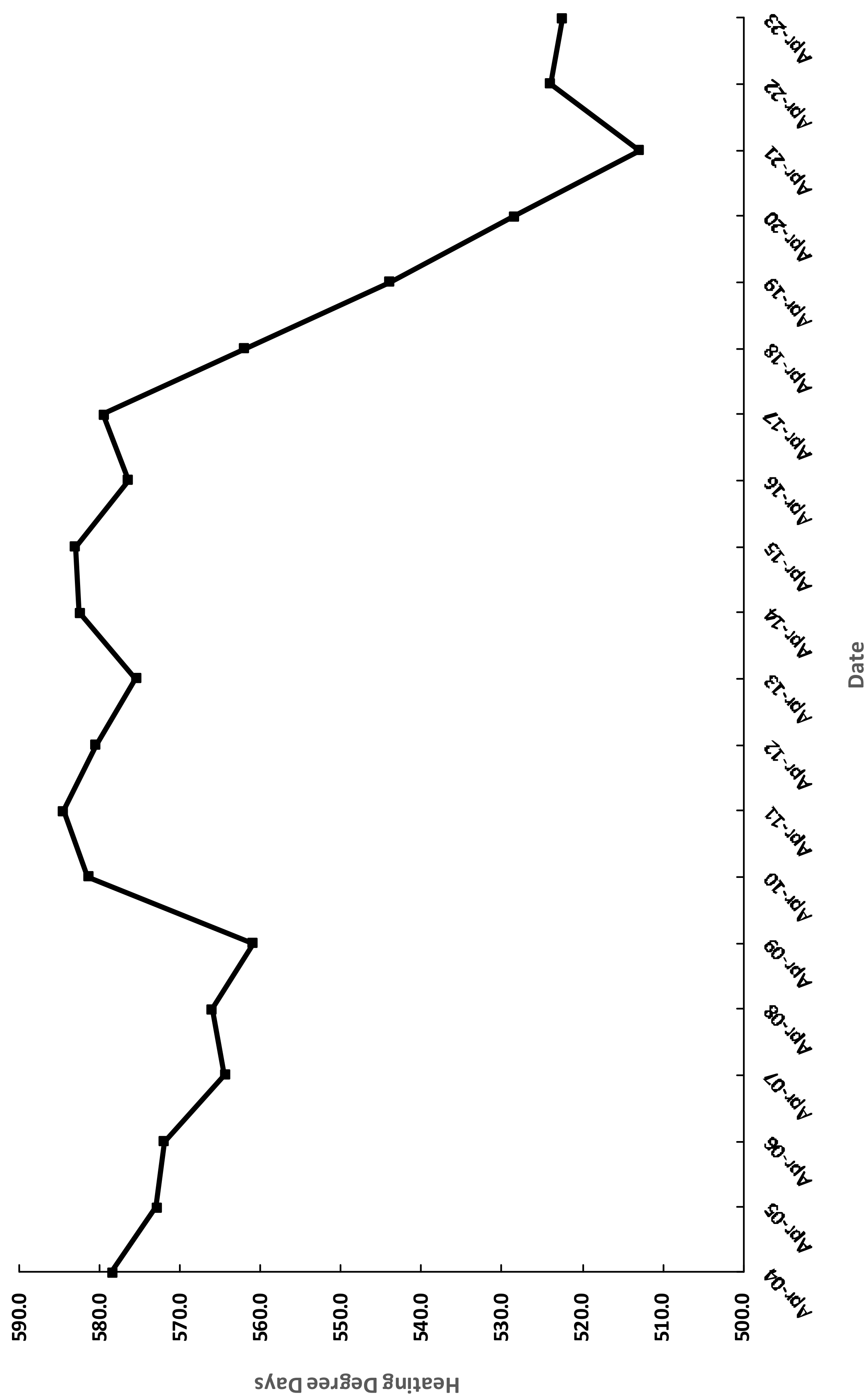


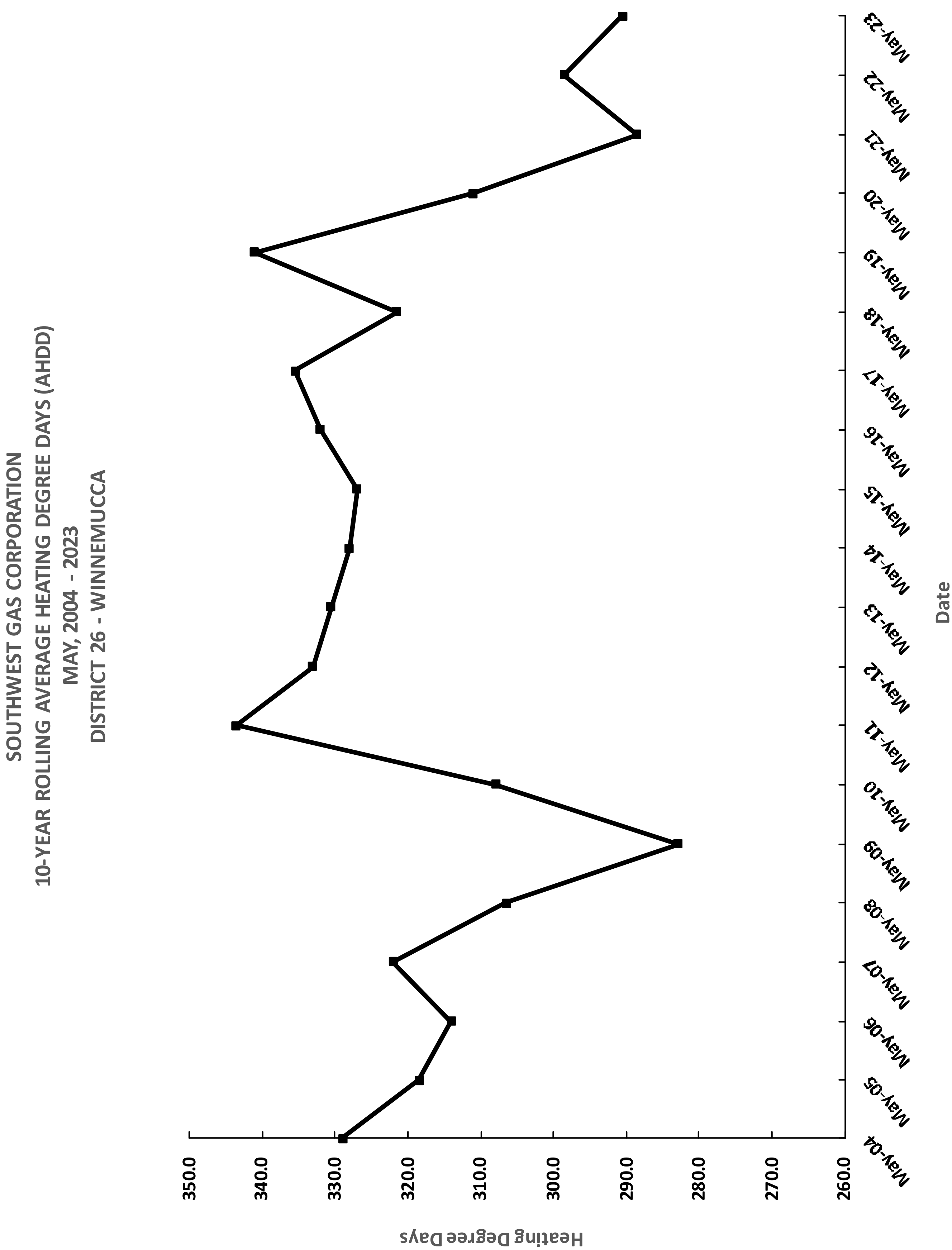

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JANUARY, 2004 - 2023
DISTRICT 26 - WINNEMUCCA
Heating Degree Days
1,200.0
1,150.0
1,100.0
1,050.0
1,000.0
950.0
900.0
Date
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
DISTRICT 26 - WINNEMUCCA
Heating Degree Days
880.0
870.0
860.0
850.0
840.0
830.0
820.0
810.0
800.0
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
Feb-13
Feb-14
Feb-15
Feb-16
Feb-17
Feb-18
Feb-19
Feb-20
Feb-21
Feb-22
Feb-23
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
DISTRICT 26 - WINNEMUCCA
Heating Degree Days
770.0
760.0
750.0
740.0
730.0
720.0
710.0
700.0
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Mar-23
Date

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
DISTRICT 26 - WINNEMUCCA




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MAY, 2004 - 2023
DISTRICT 26 - WINNEMUCCA
Heating Degree Days
350.0
340.0
330.0
320.0
310.0
300.0
290.0
280.0
270.0
260.0
Date
May-04
May-05
May-06
May-07
May-08
May-09
May-10
May-11
May-12
May-13
May-14
May-15
May-16
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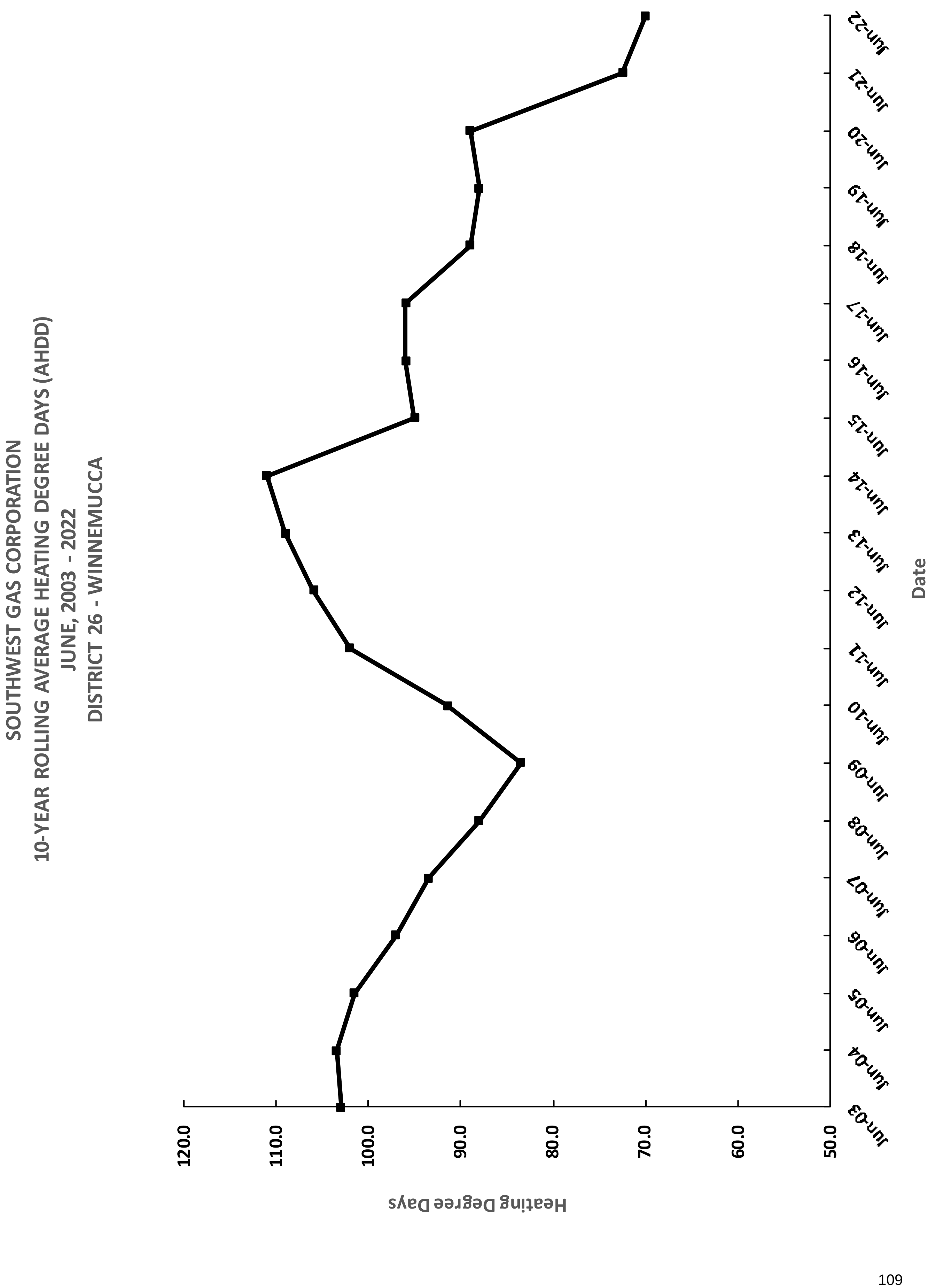
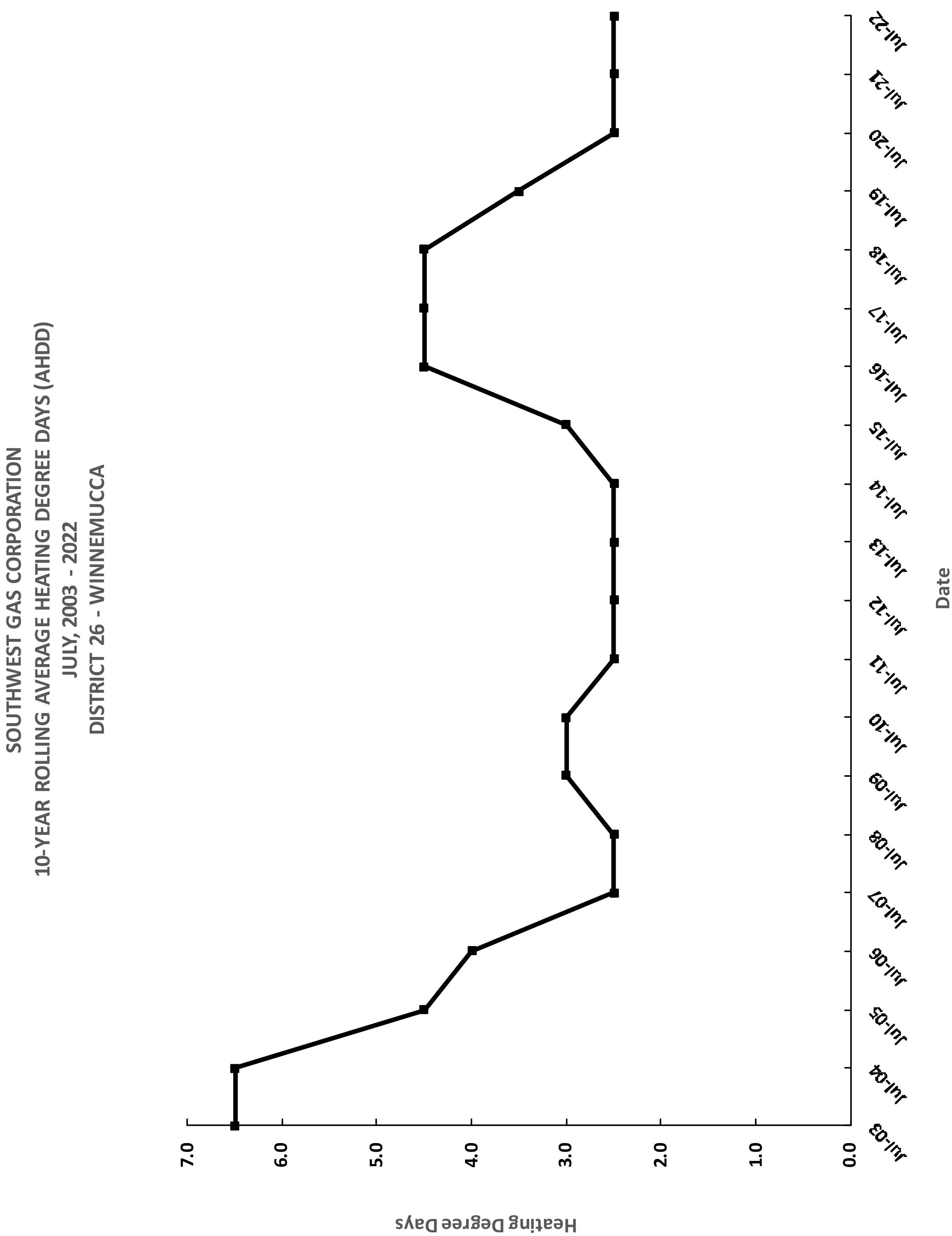
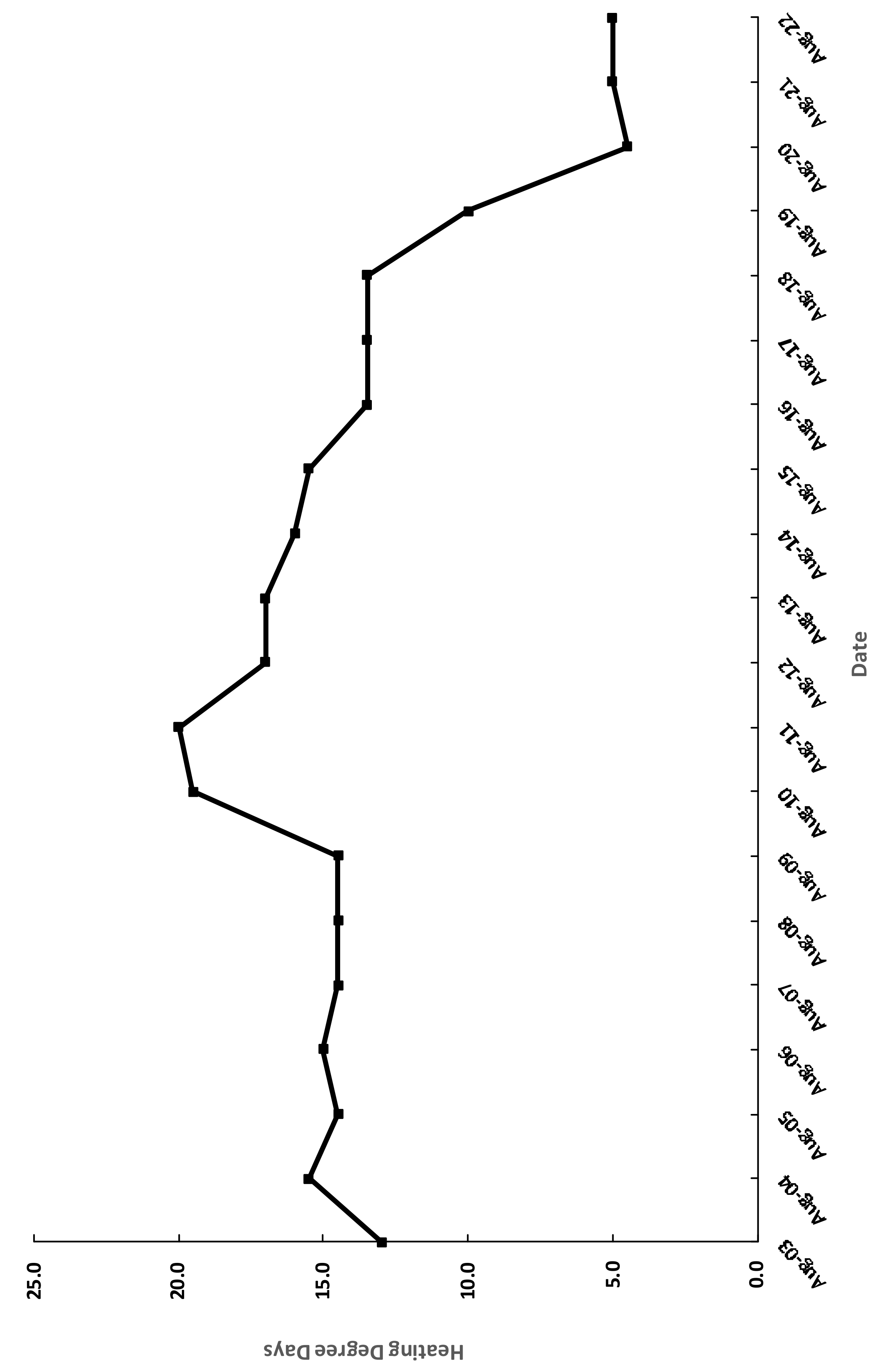
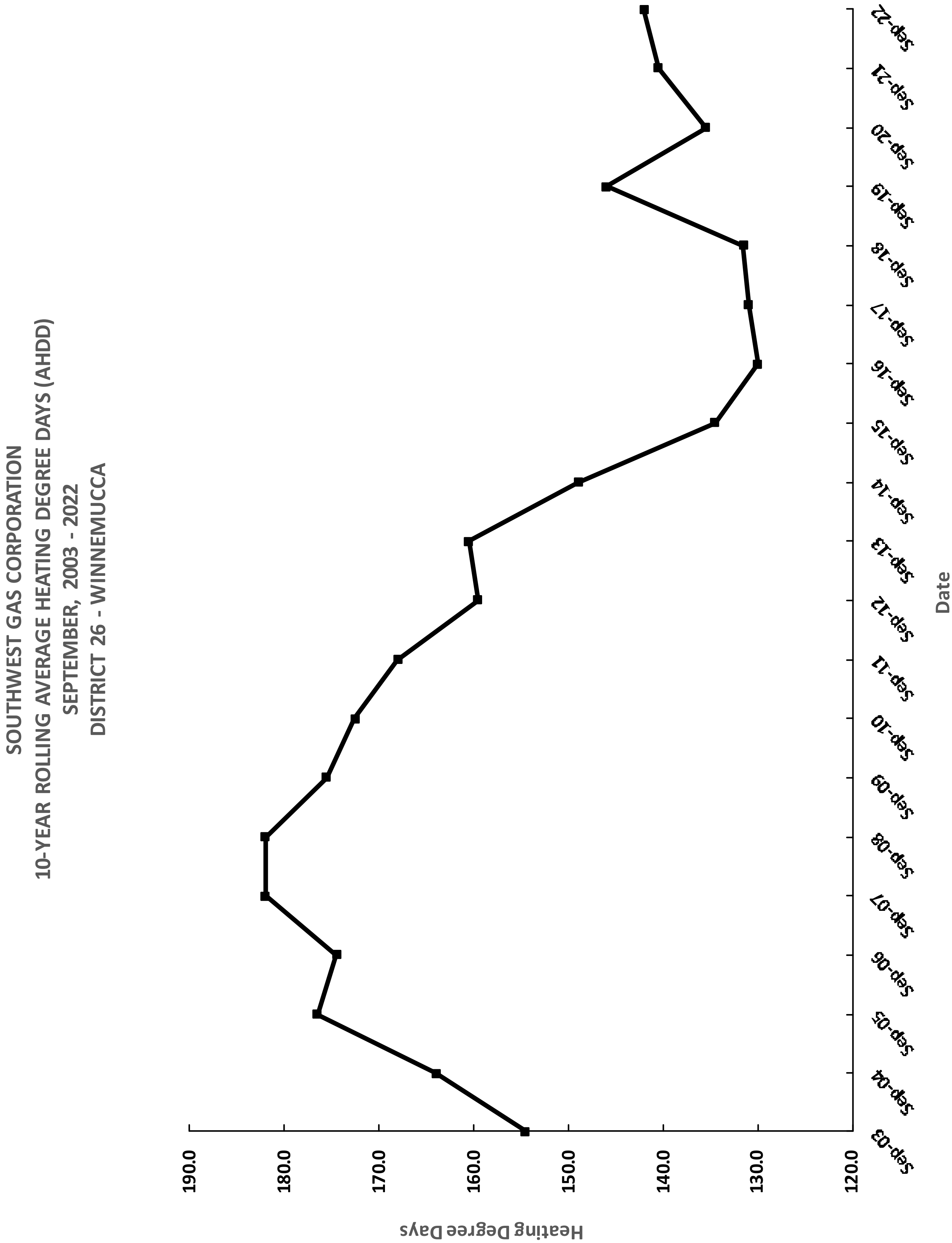
May-21
May-22
May-23


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
Heating Degree Days
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
Date
Jun-03
Jun-04
Jun-05
Jun-06
Jun-07
Jun-08
Jun-09
Jun-10
Jun-11
Jun-12
Jun-13
Jun-14
Jun-15
Jun-16
Jun-17
Jun-18
Jun-19
Jun-20
Jun-21
Jun-22

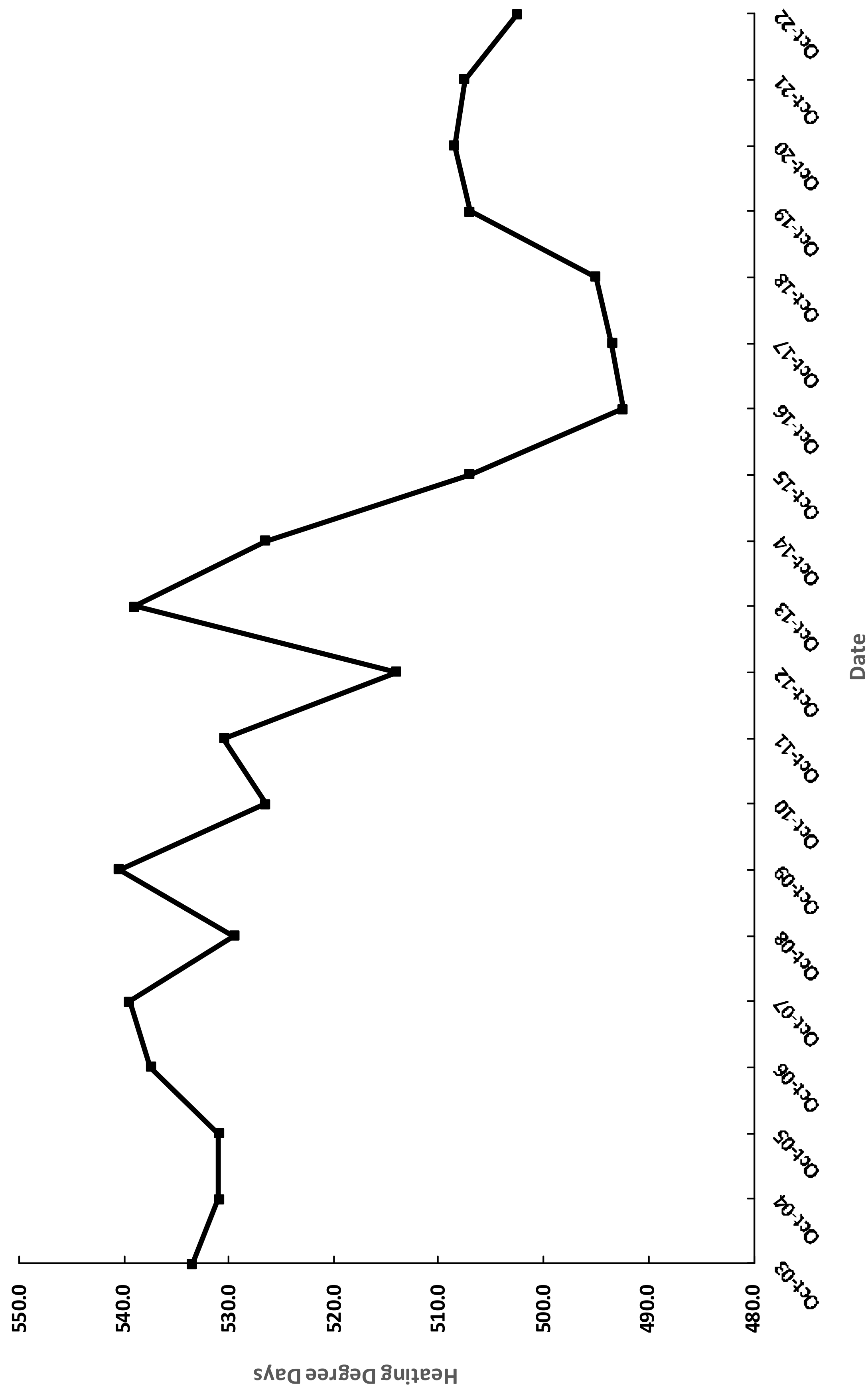

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
Heating Degree Days
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Jul-16
Jul-17
Jul-18
Jul-19
Jul-20
Jul-21
Jul-22
Date

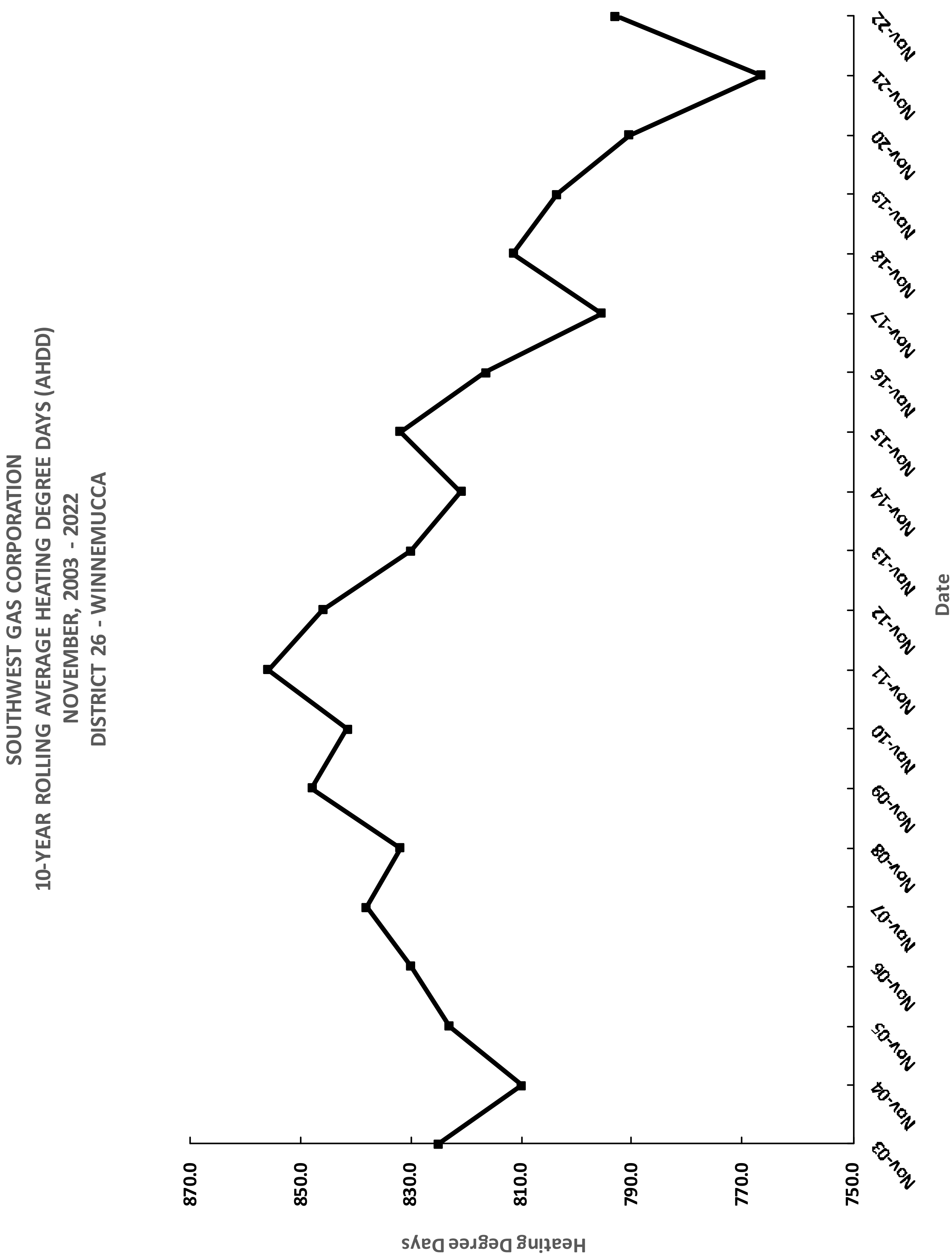
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
DISTRICT 26 - WINNEMUCCA

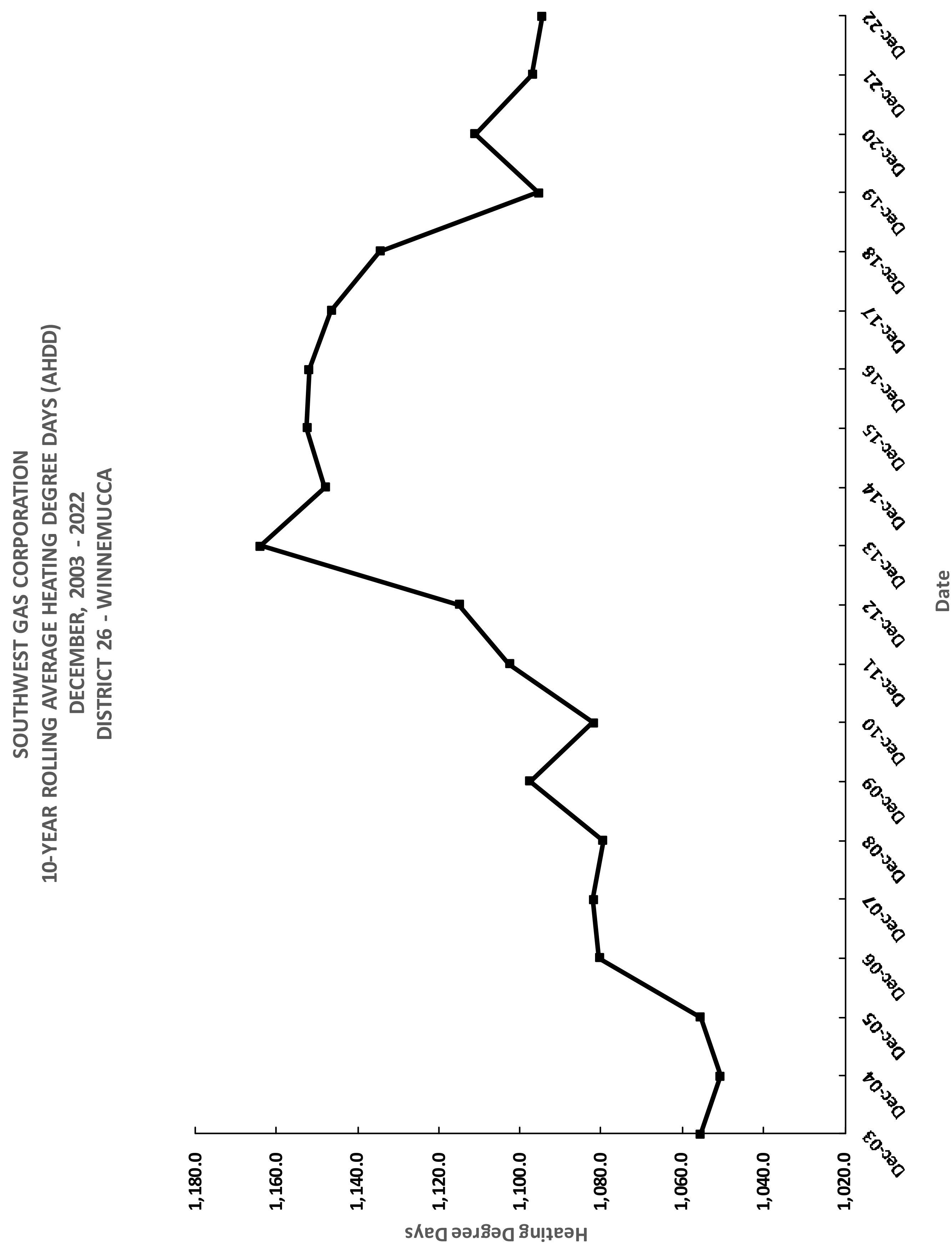



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
Heating Degree Days
190.0
180.0
170.0
160.0
150.0
140.0
130.0
120.0
Date
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
Sep-17
Sep-18
Sep-19
Sep-20
Sep-21
Sep-22

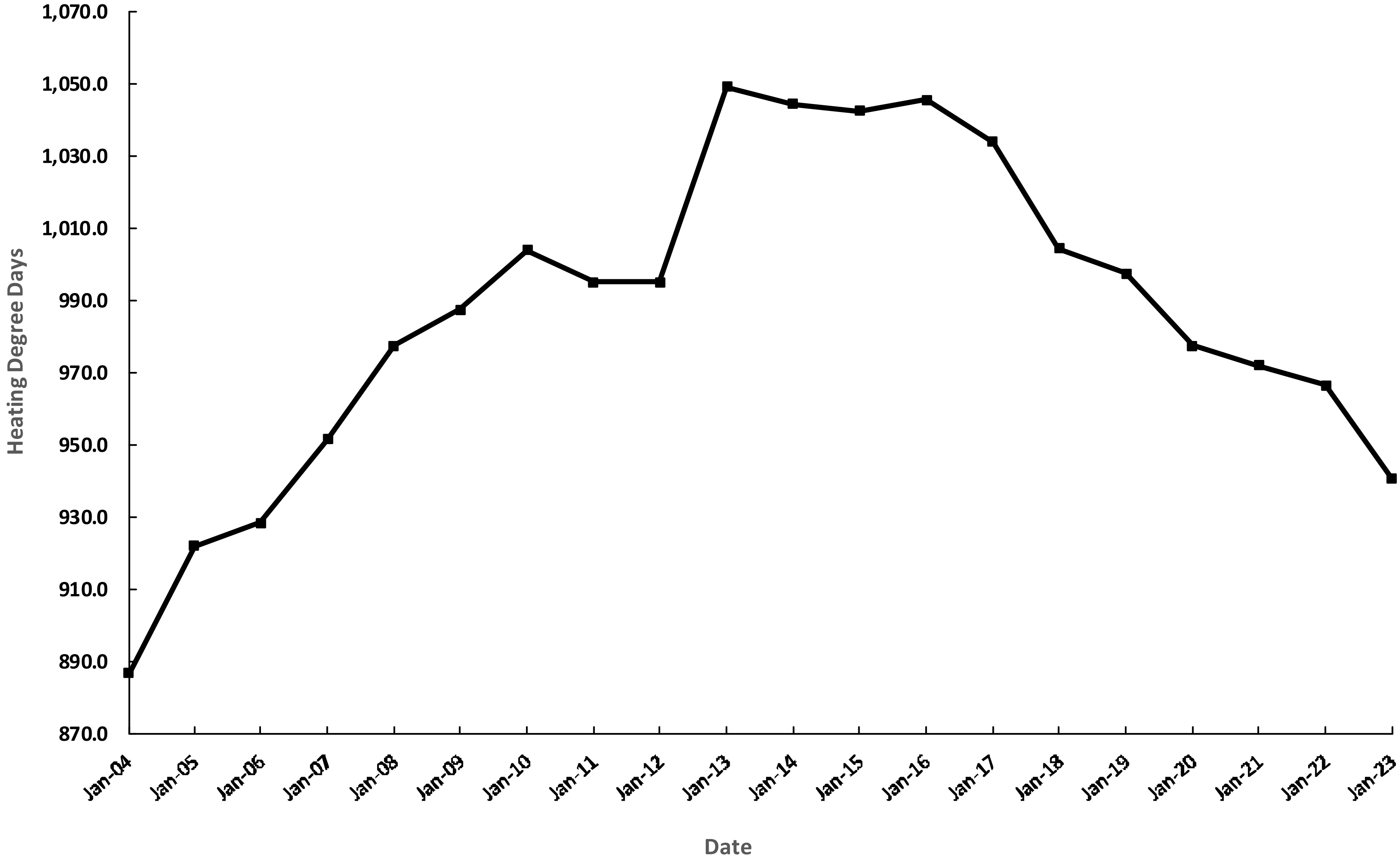
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
DISTRICT 26 - WINNEMUCCA



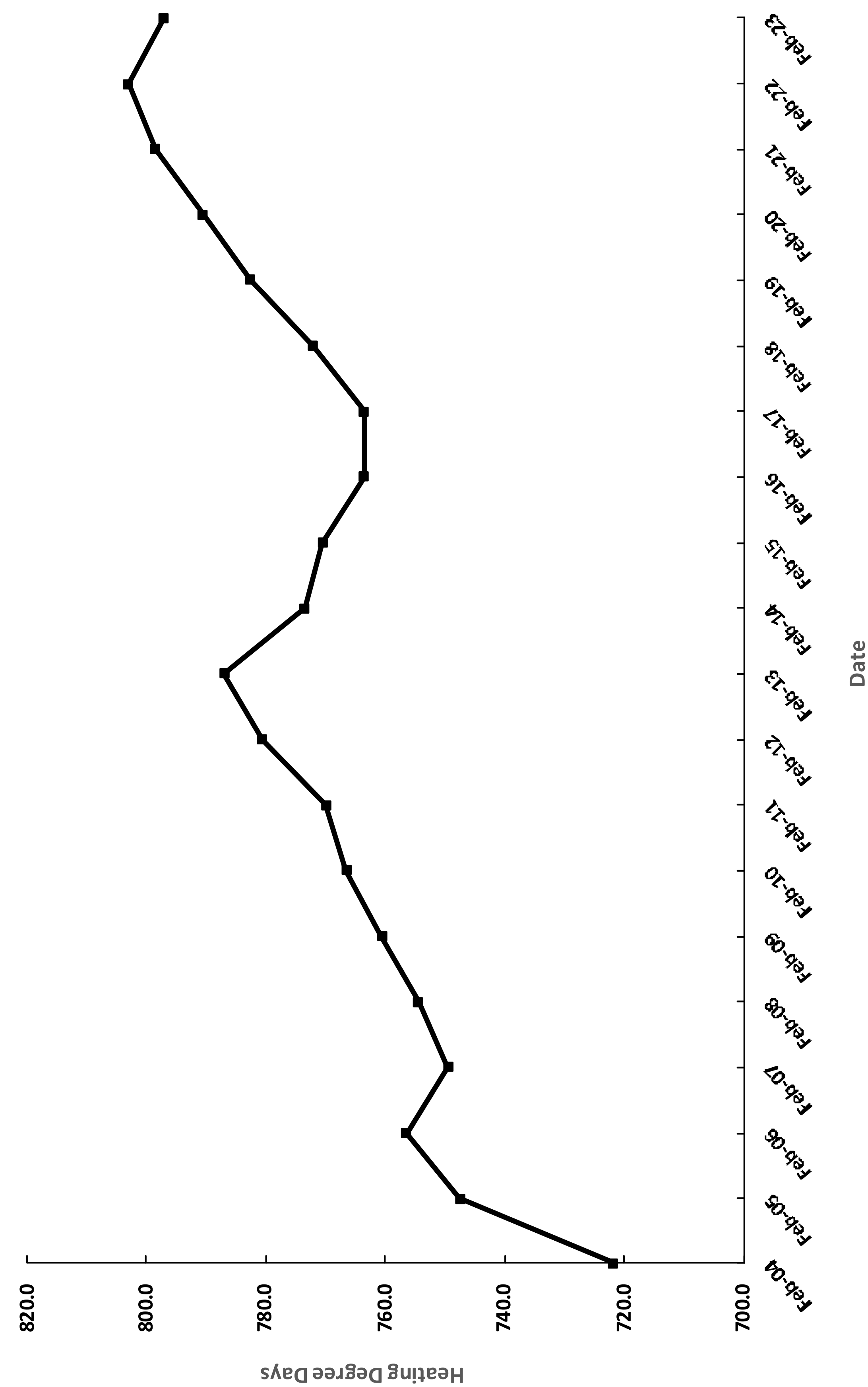

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
Heating Degree Days
870.0
850.0
830.0
810.0
790.0
770.0
750.0
Date
Nov-03
Nov-04
Nov-05
Nov-06
Nov-07
Nov-08
Nov-09
Nov-10
Nov-11
Nov-12
Nov-13
Nov-14
Nov-15
Nov-16
Nov-17
Nov-18
Nov-19
Nov-20
Nov-21
Nov-22


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
DECEMBER, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
Heating Degree Days
1,020.0
1,040.0
1,060.0
1,080.0
1,100.0
1,120.0
1,140.0
1,160.0
1,180.0
Date
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
Dec-16
Dec-17
Dec-18
Dec-19
Dec-20
Dec-21
Dec-22

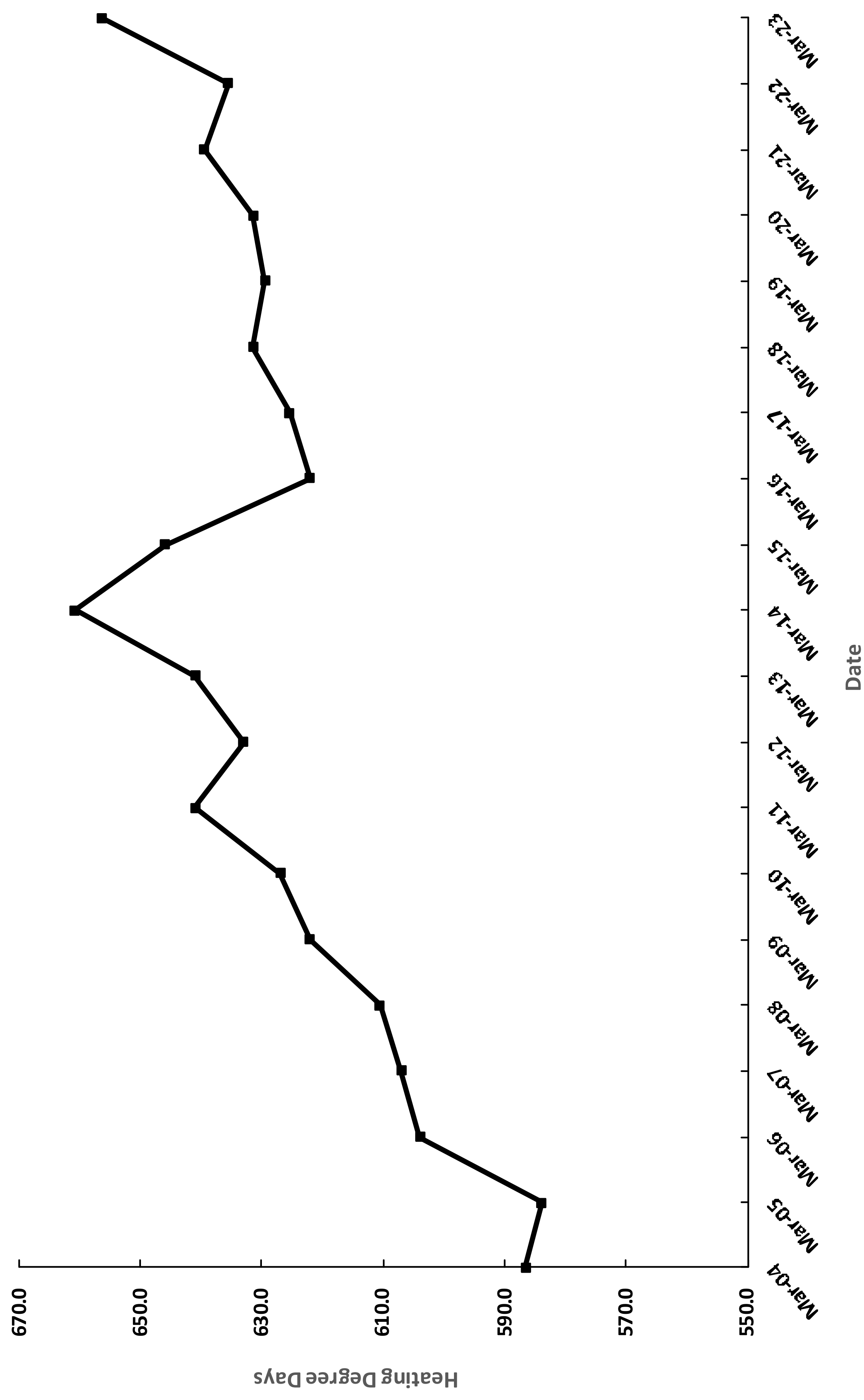
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JANUARY, 2004 - 2023
DISTRICT 27 - FERNLEY



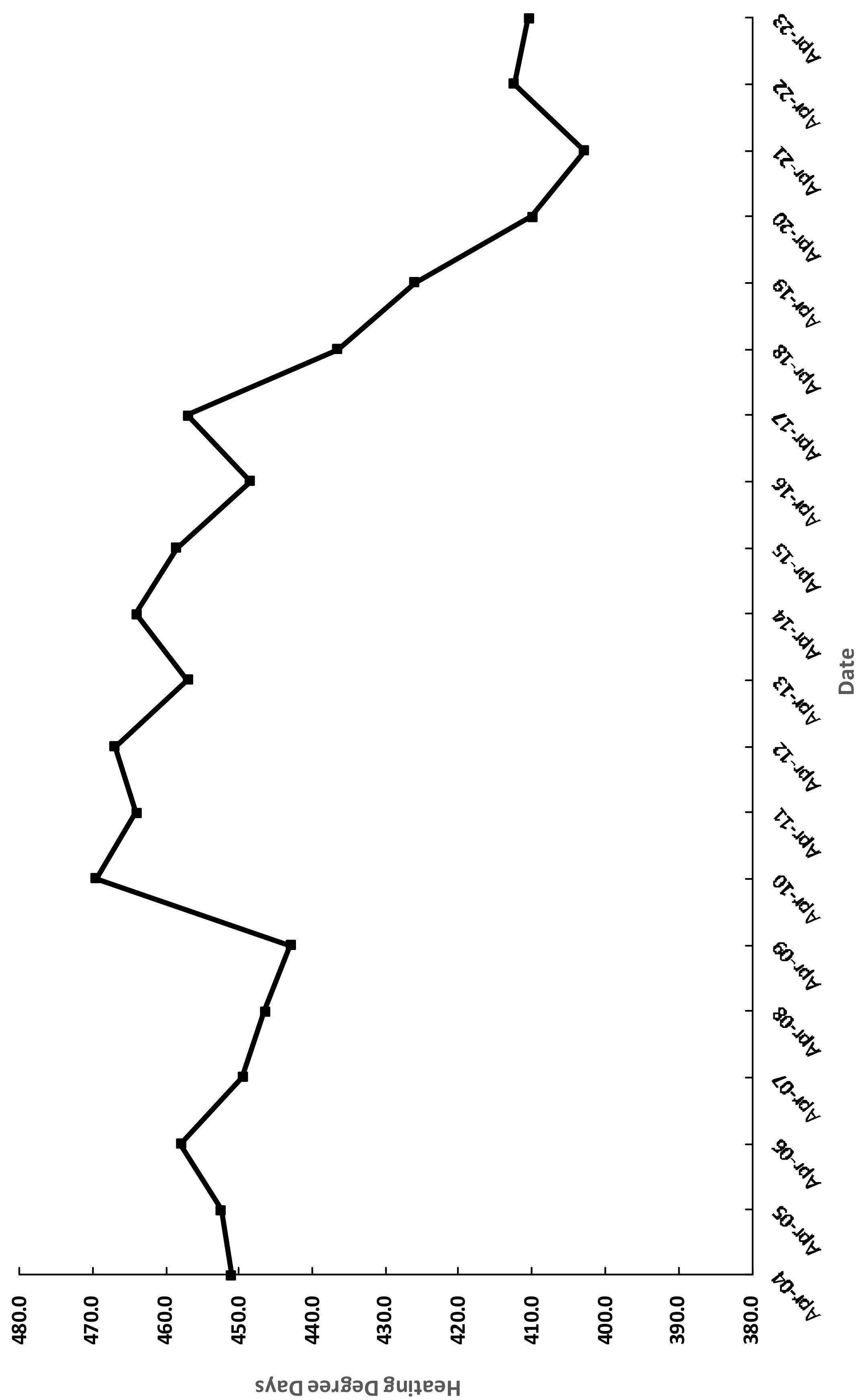
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
DISTRICT 27 - FERNLEY



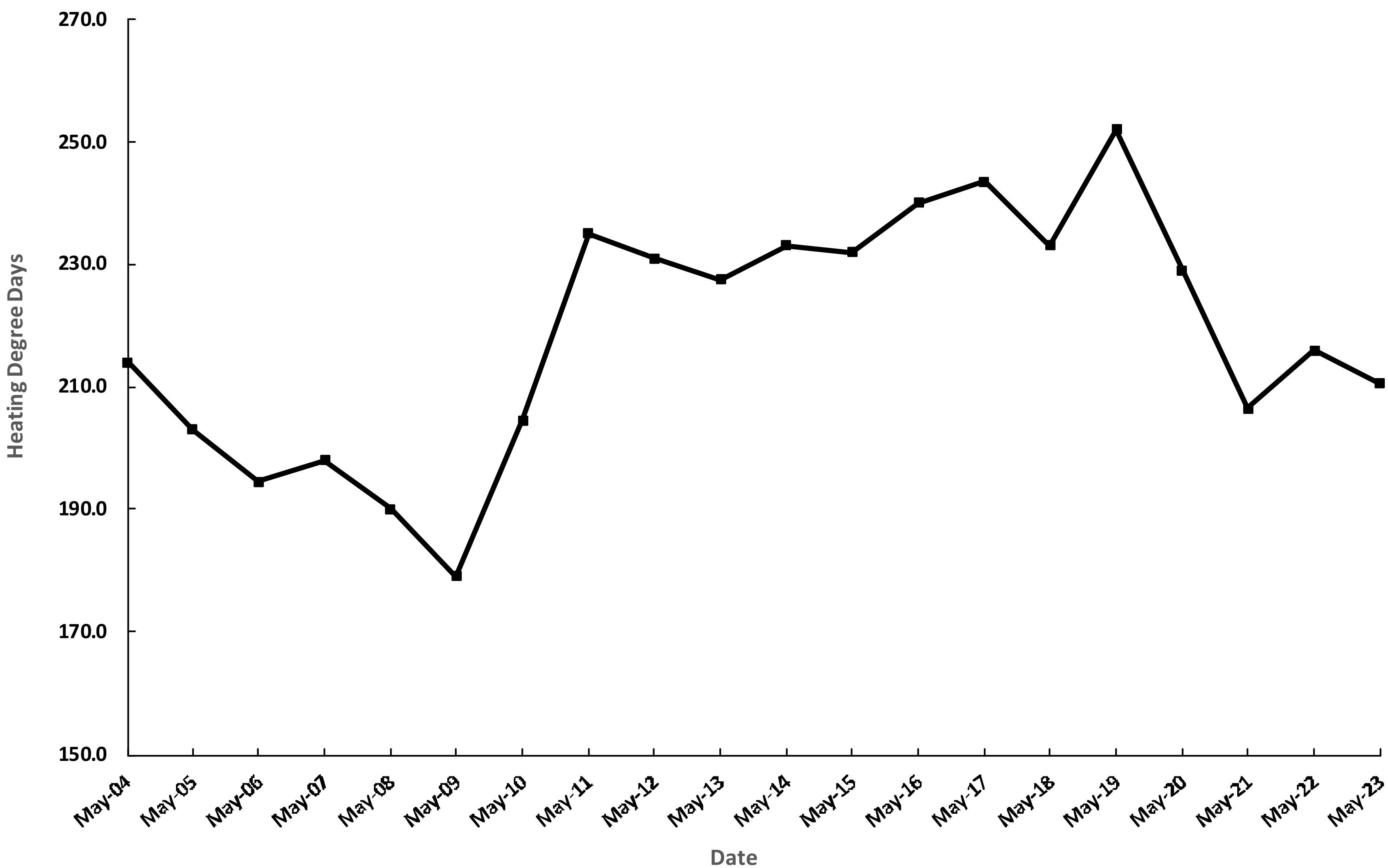
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
DISTRICT 27 - FERNLEY



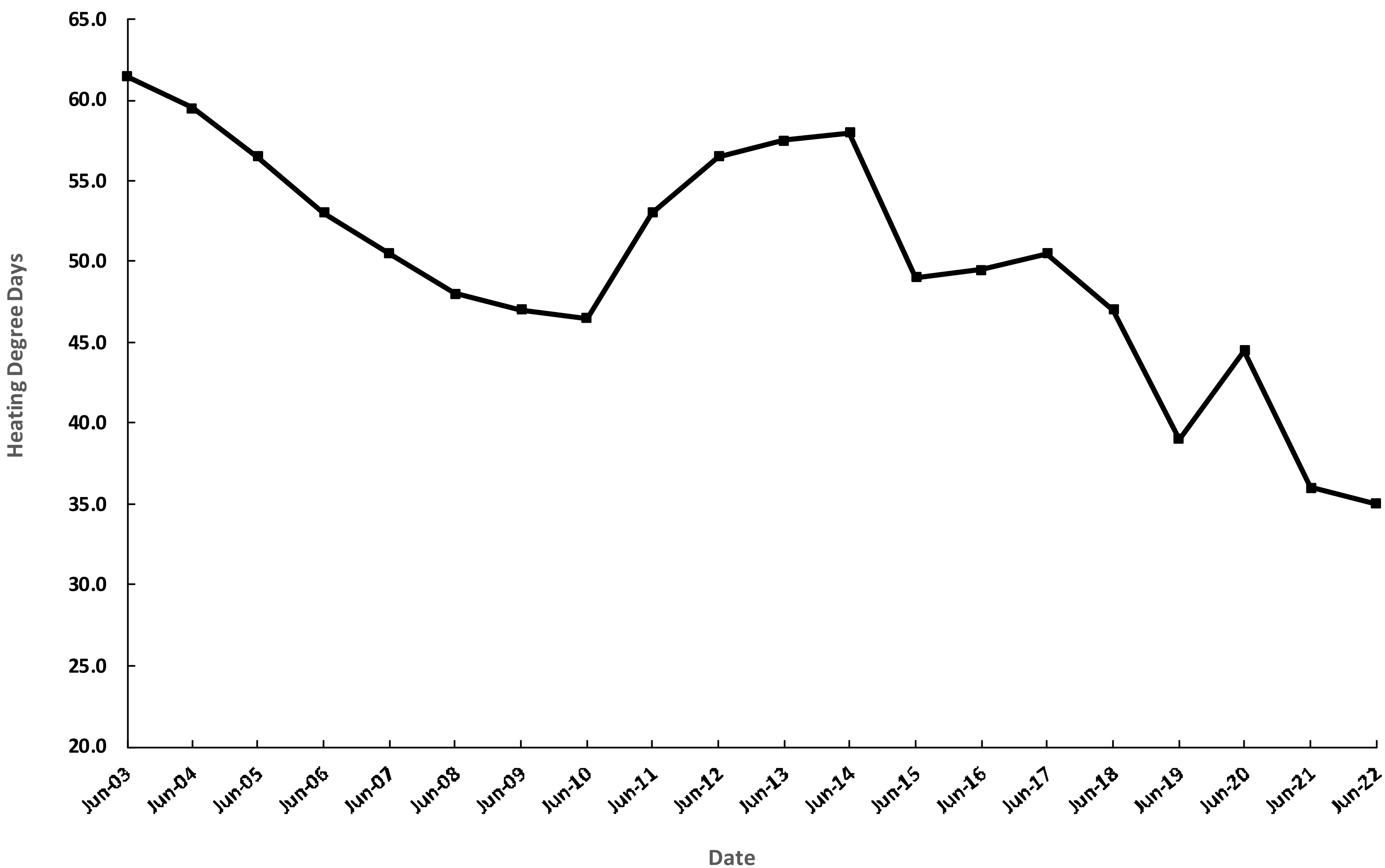
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
DISTRICT 27 - FERNLEY



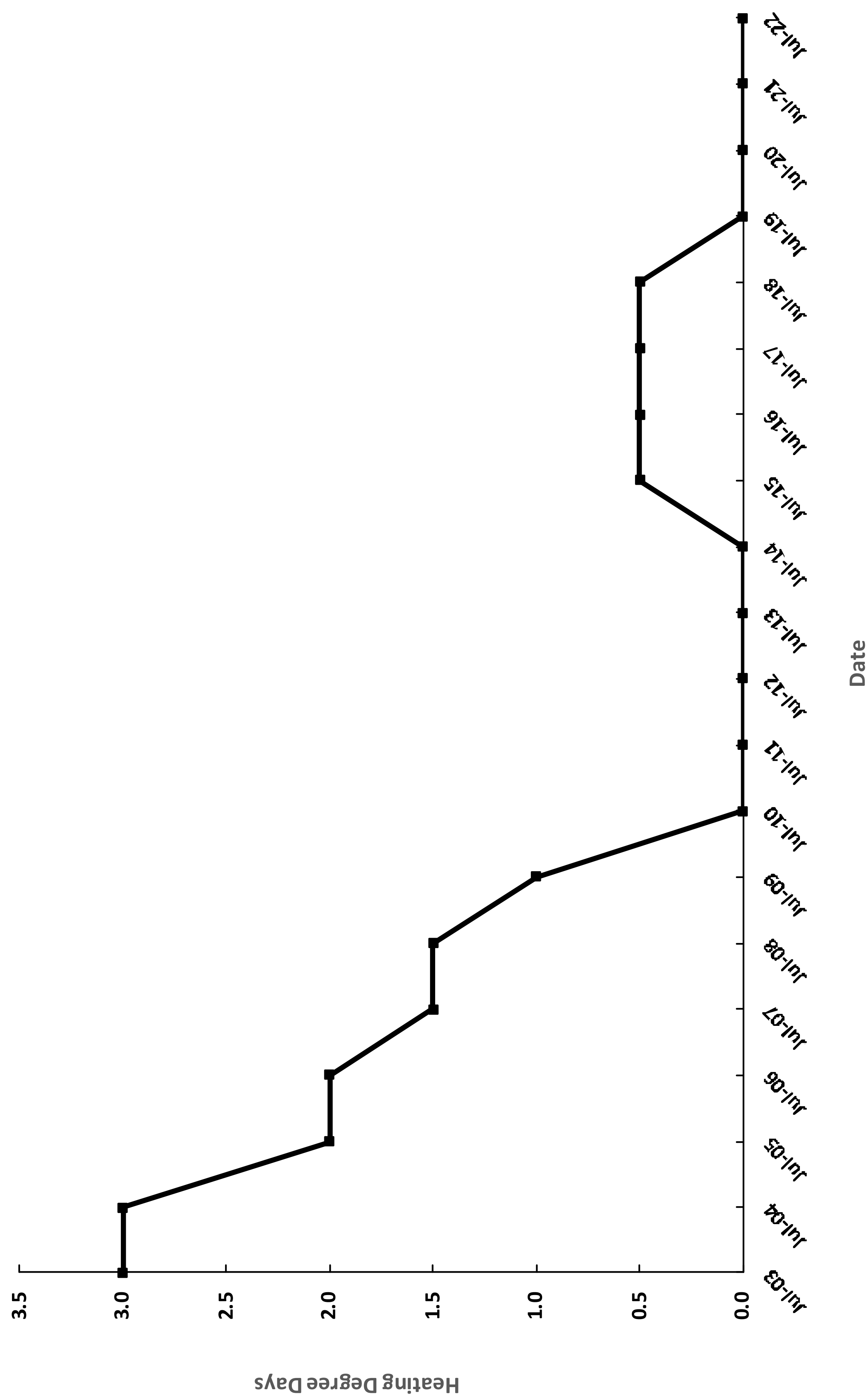
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MAY, 2004 - 2023
DISTRICT 27 - FERNLEY



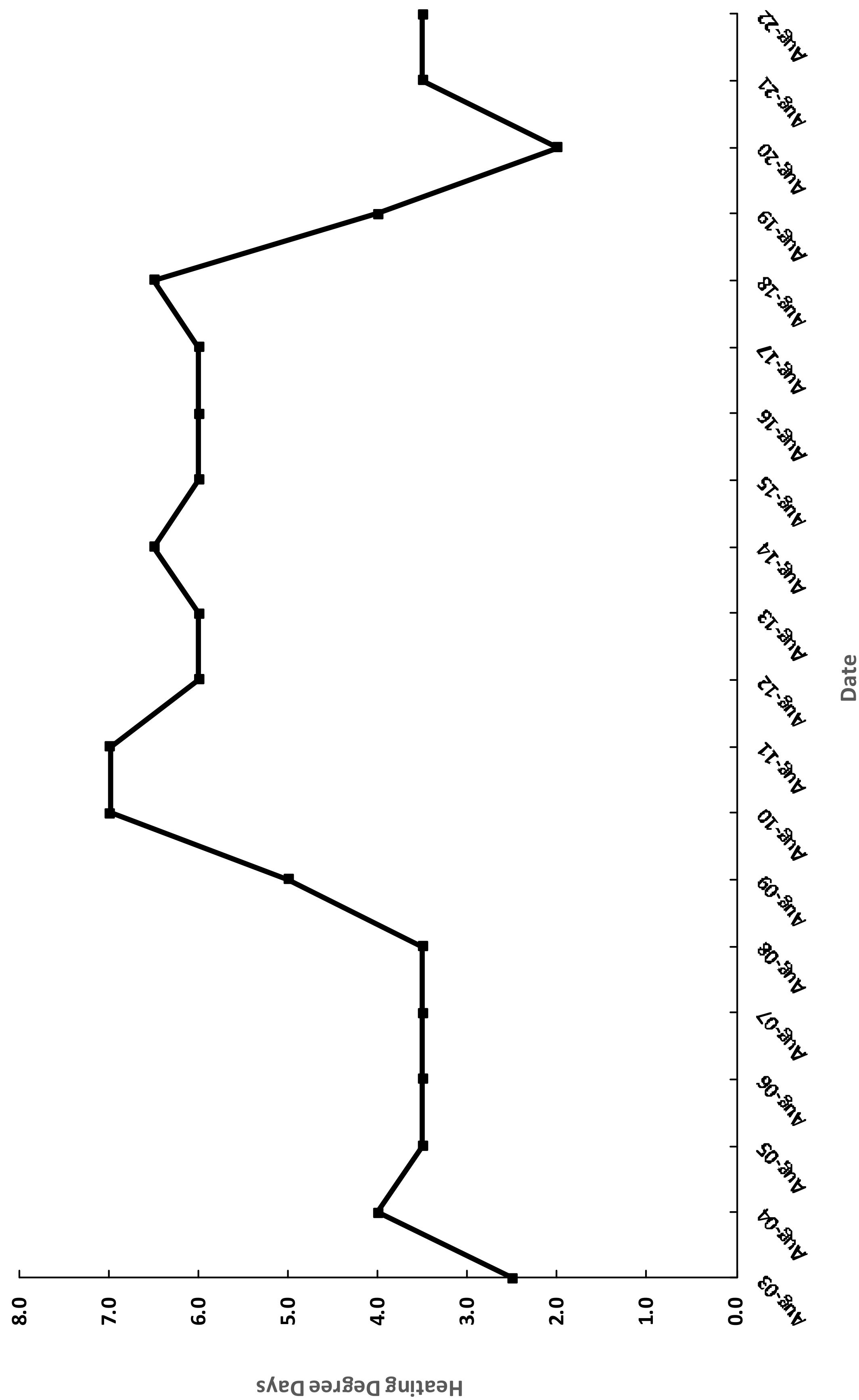
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
DISTRICT 27 - FERNLEY

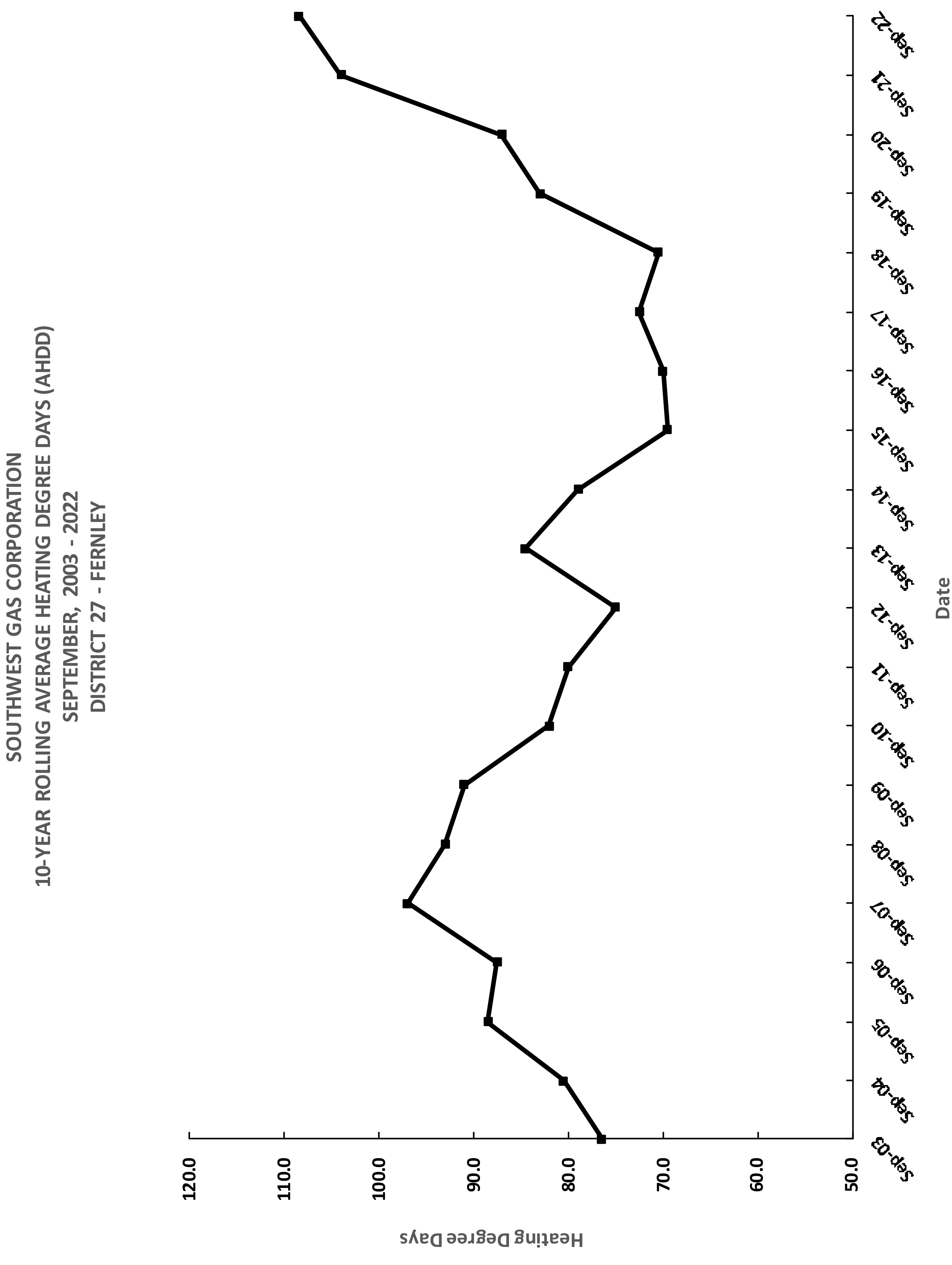


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
DISTRICT 27 - FERNLEY

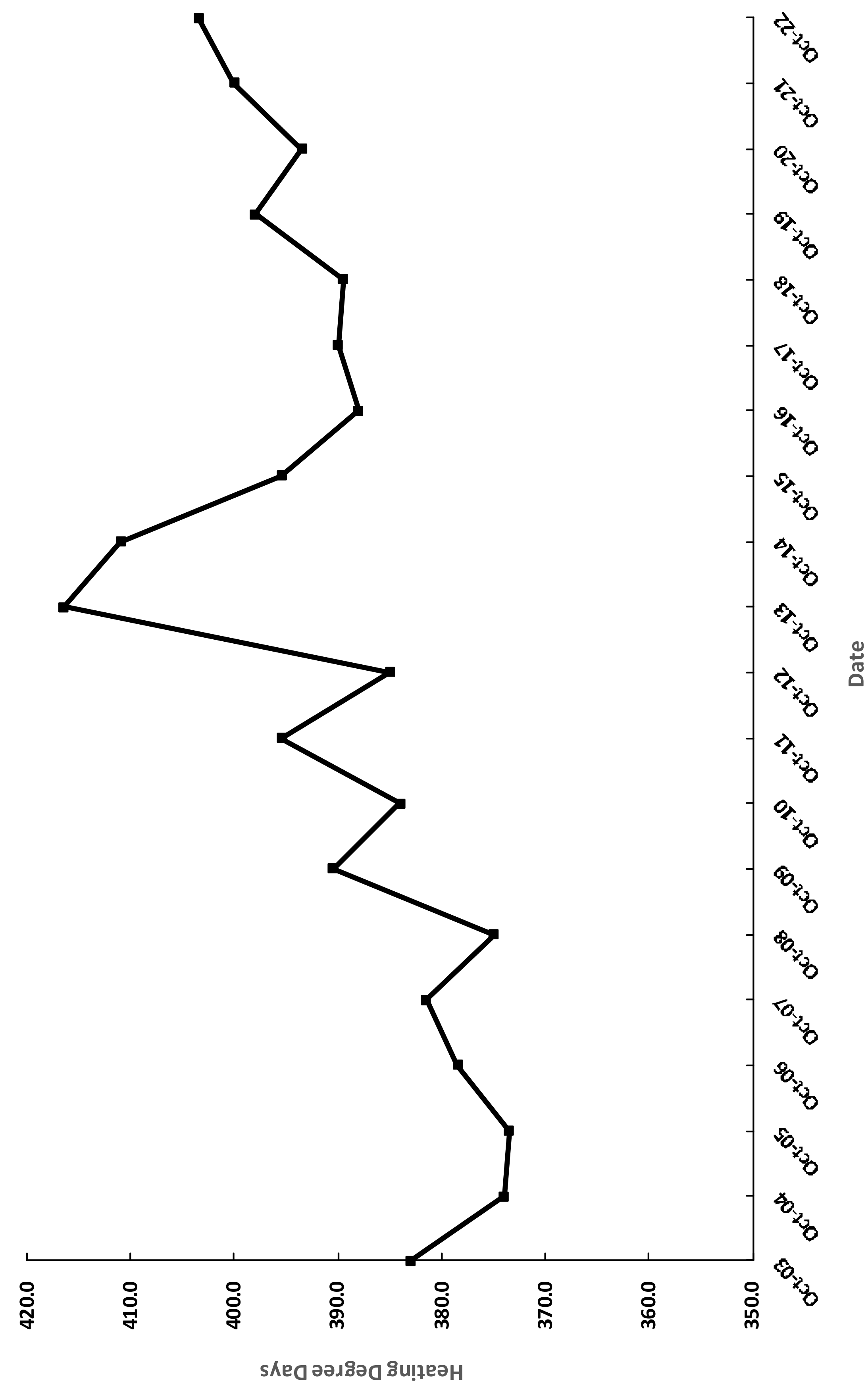


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
DISTRICT 27 - FERNLEY

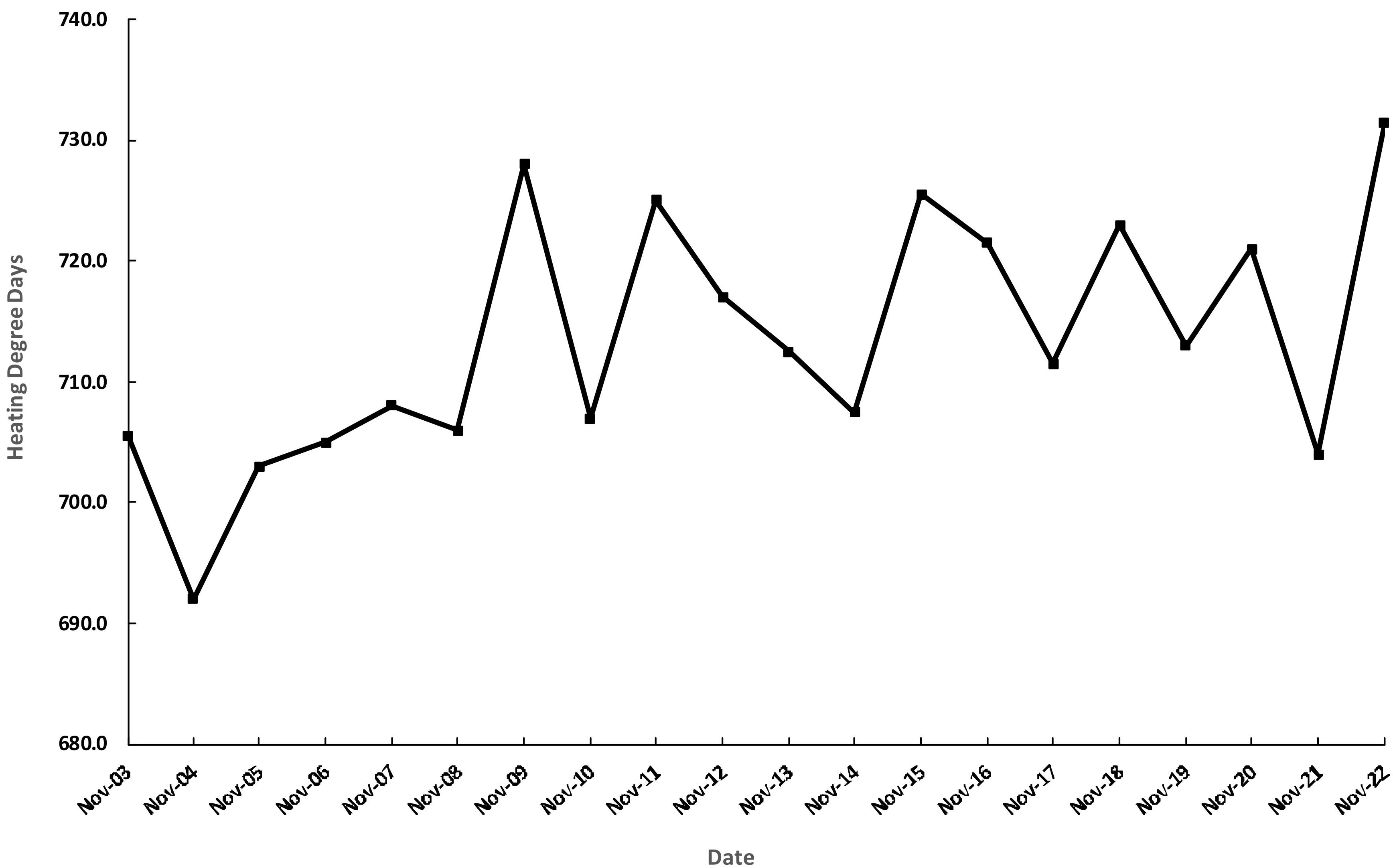



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
DISTRICT 27 - FERNLEY
Heating Degree Days
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
Date
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
Sep-17
Sep-18
Sep-19
Sep-20
Sep-21
Sep-22

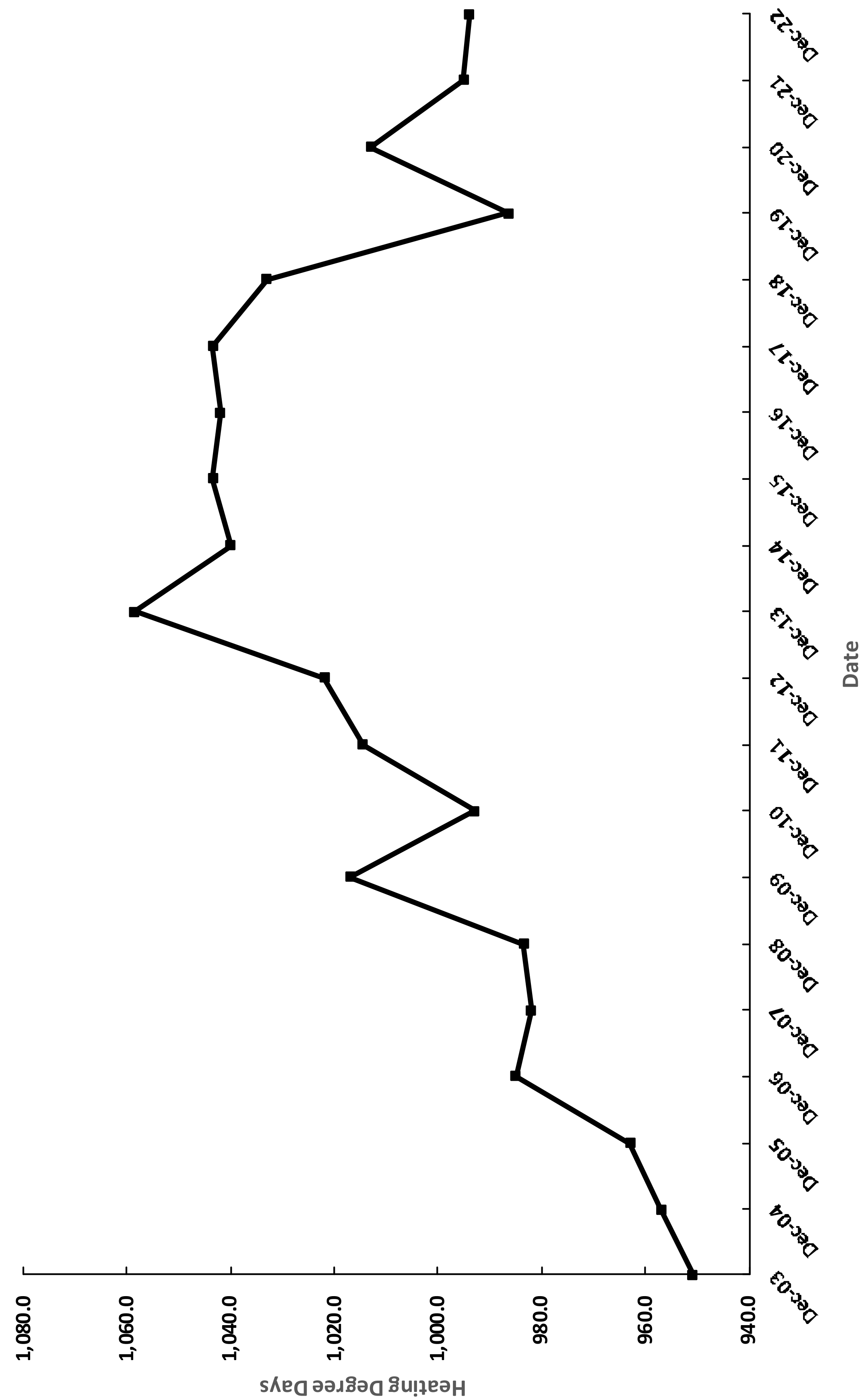
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
DISTRICT 27 - FERNLEY

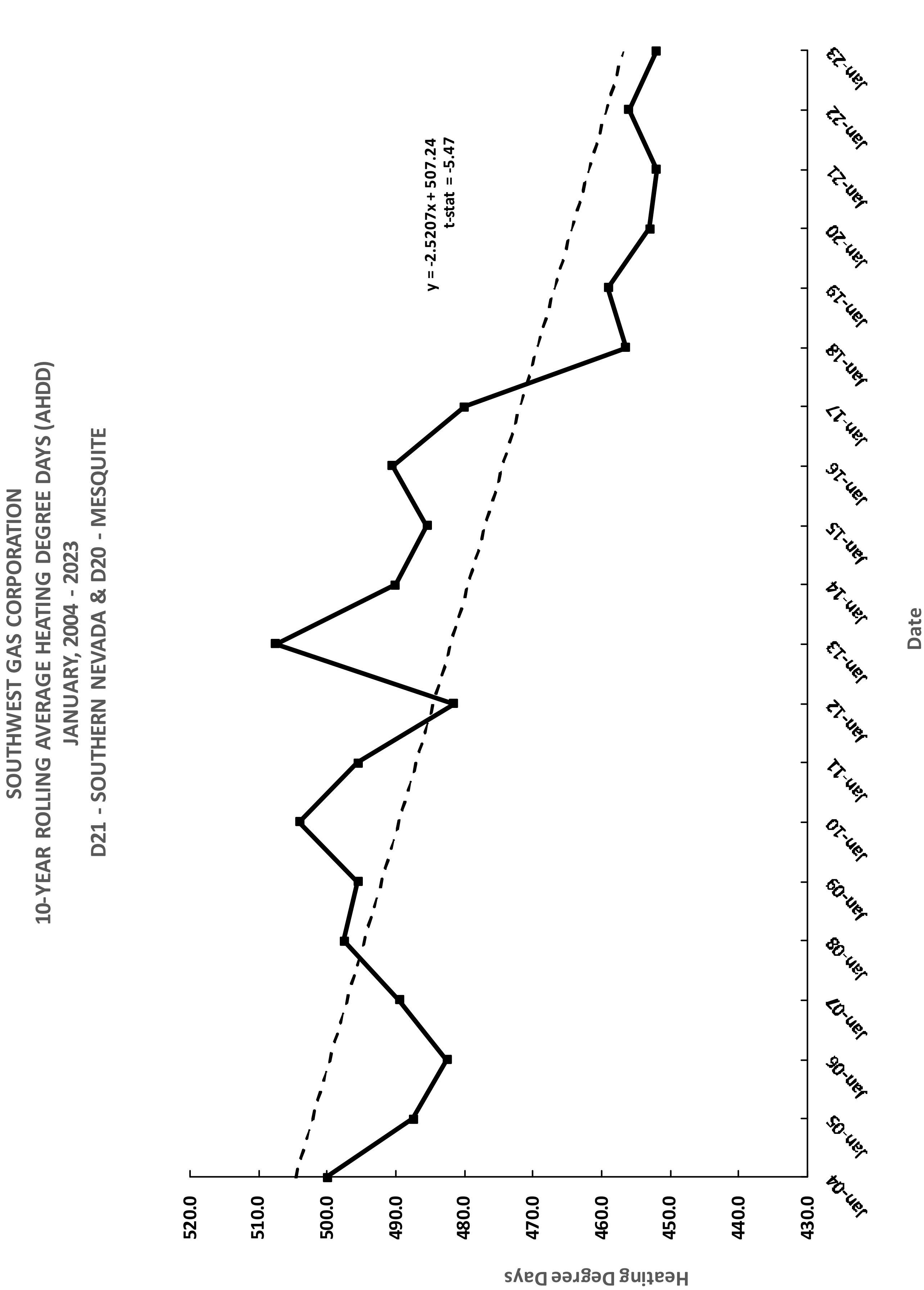


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
DISTRICT 27 - FERNLEY

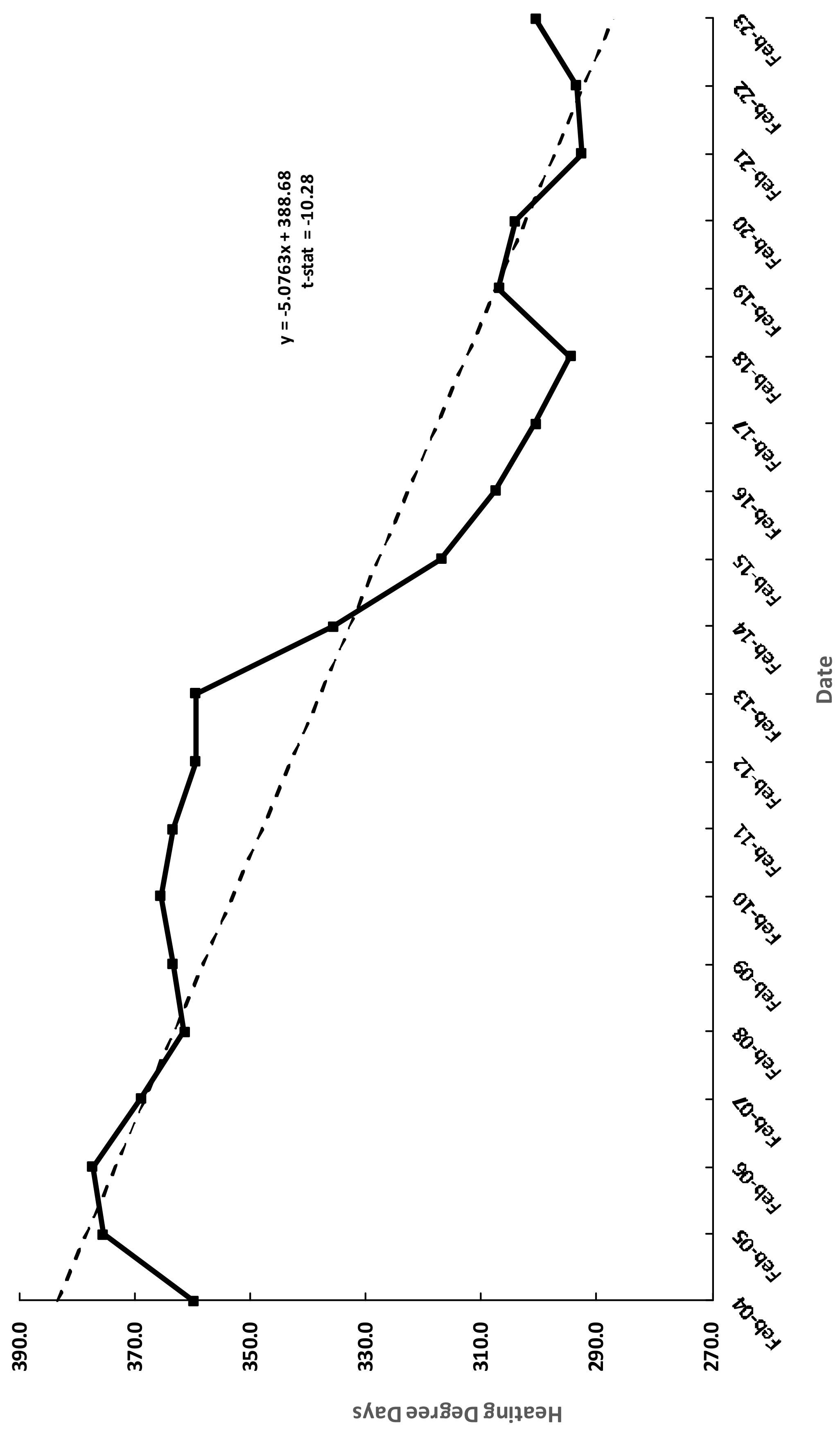


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
DECEMBER, 2003 - 2022
DISTRICT 27 - FERNLEY

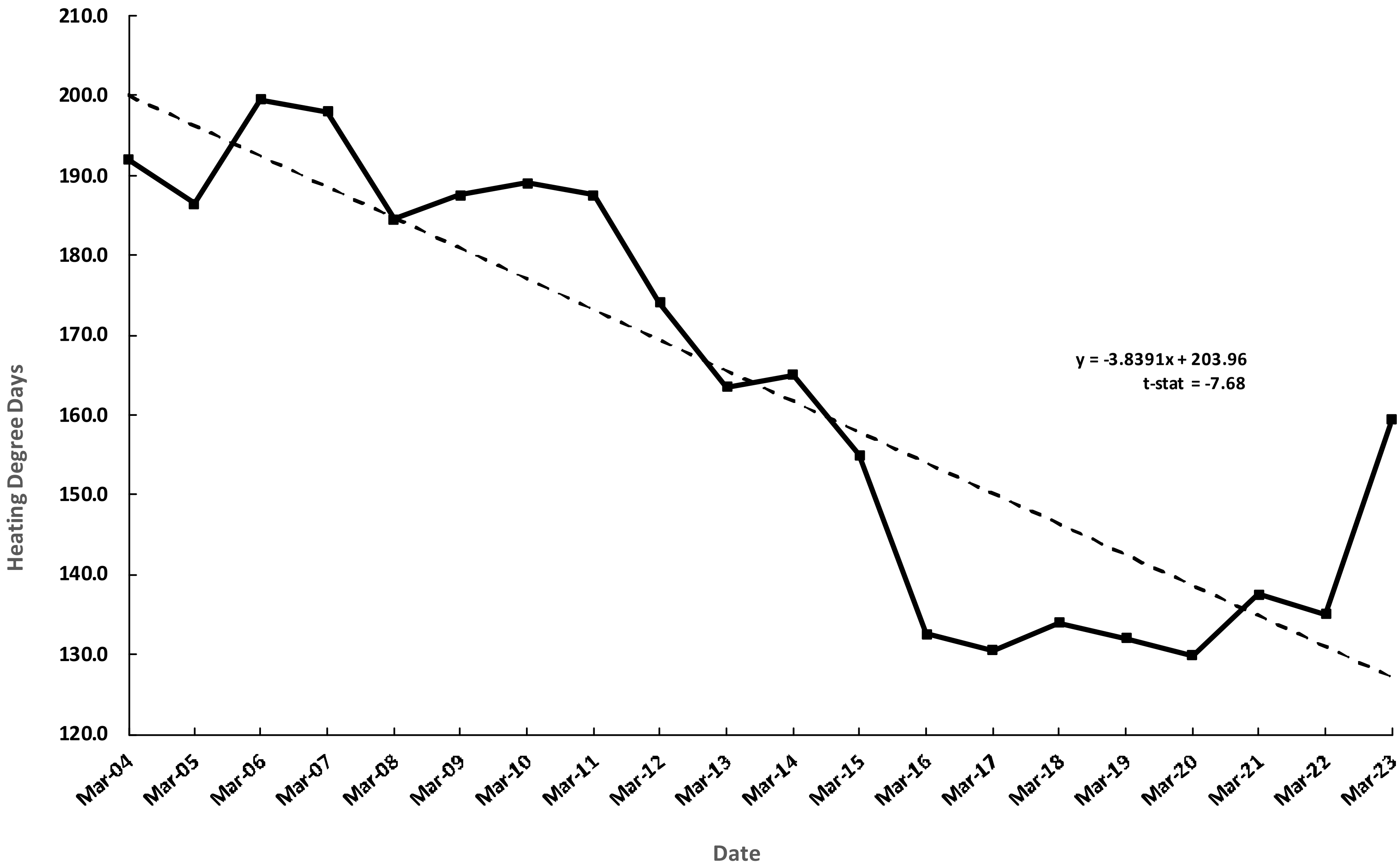


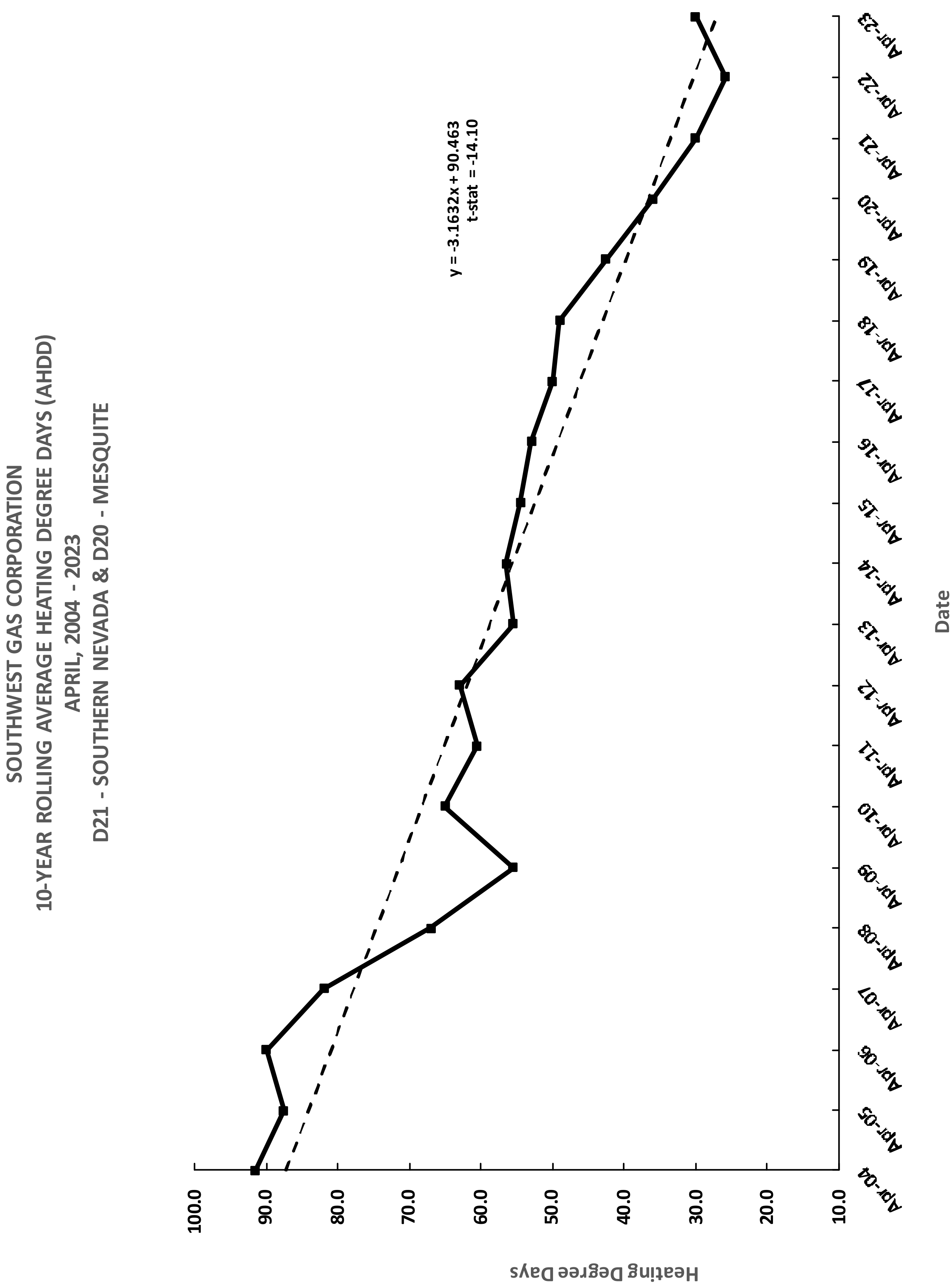

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JANUARY, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = -2.5207x + 507.24
t-stat = -5.47
Heating Degree Days
520.0
510.0
500.0
490.0
480.0
470.0
460.0
450.0
440.0
430.0
Date
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE

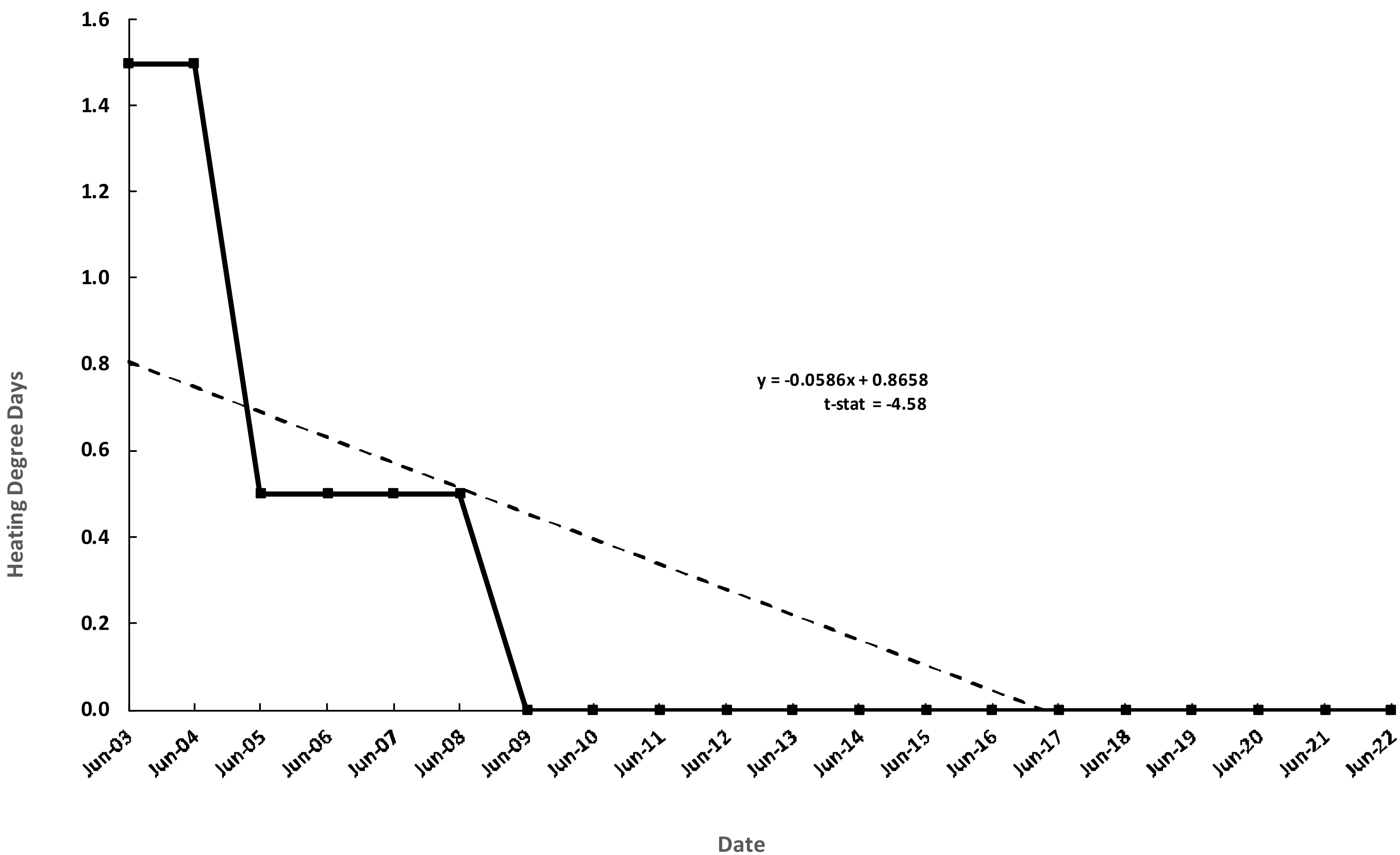


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE

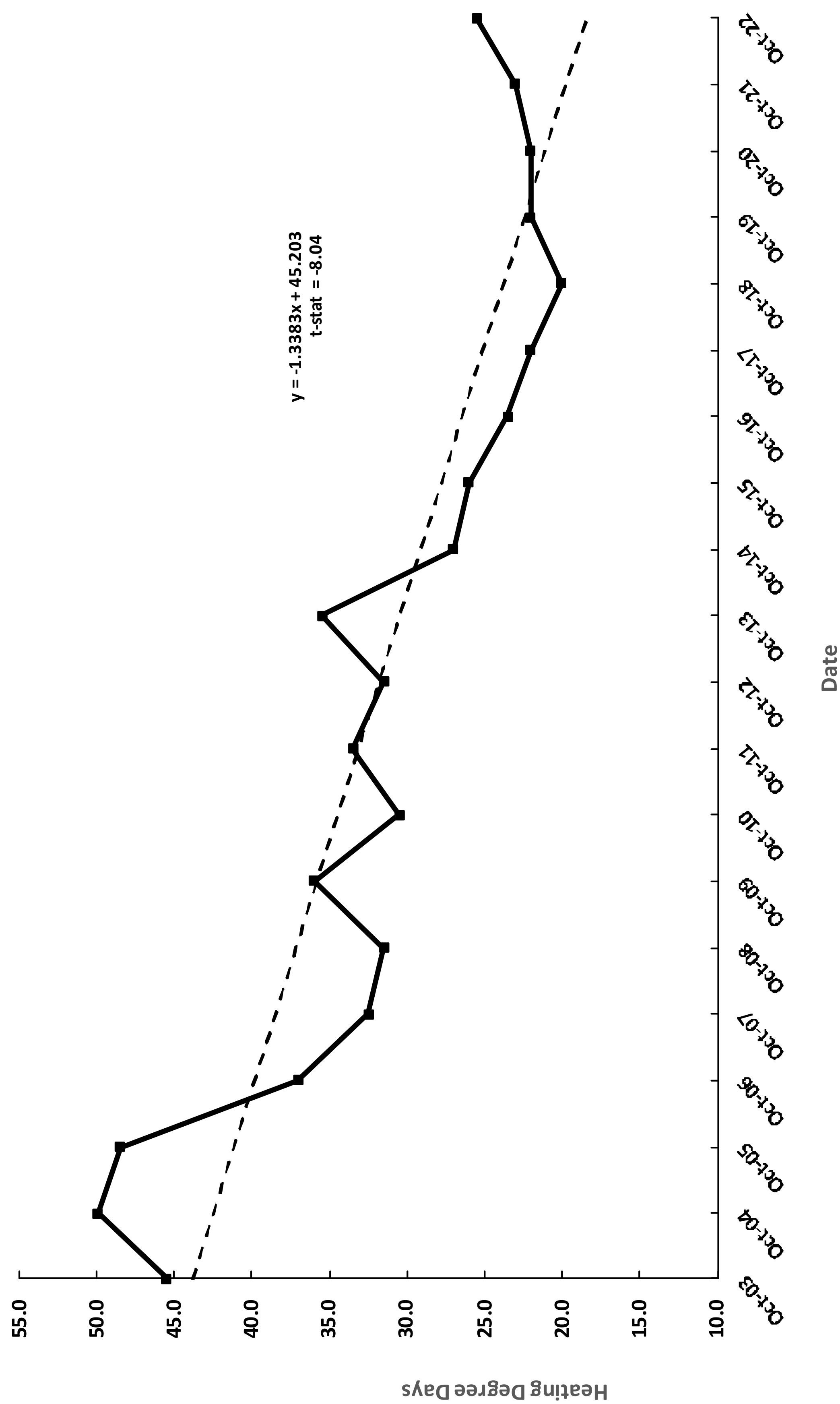



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = -3.1632x + 90.463
t-stat = -14.10
Heating Degree Days
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23
Date

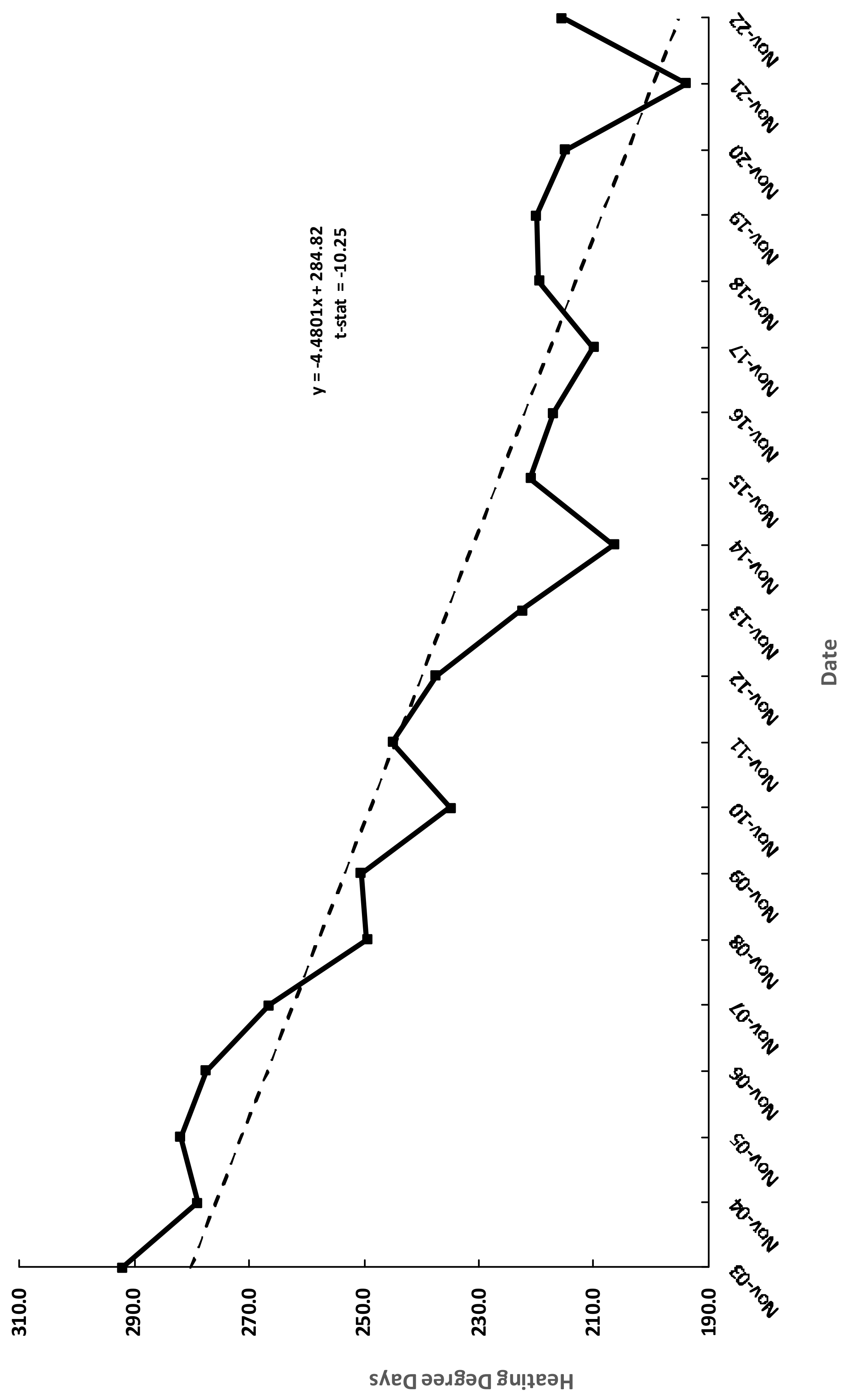
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE

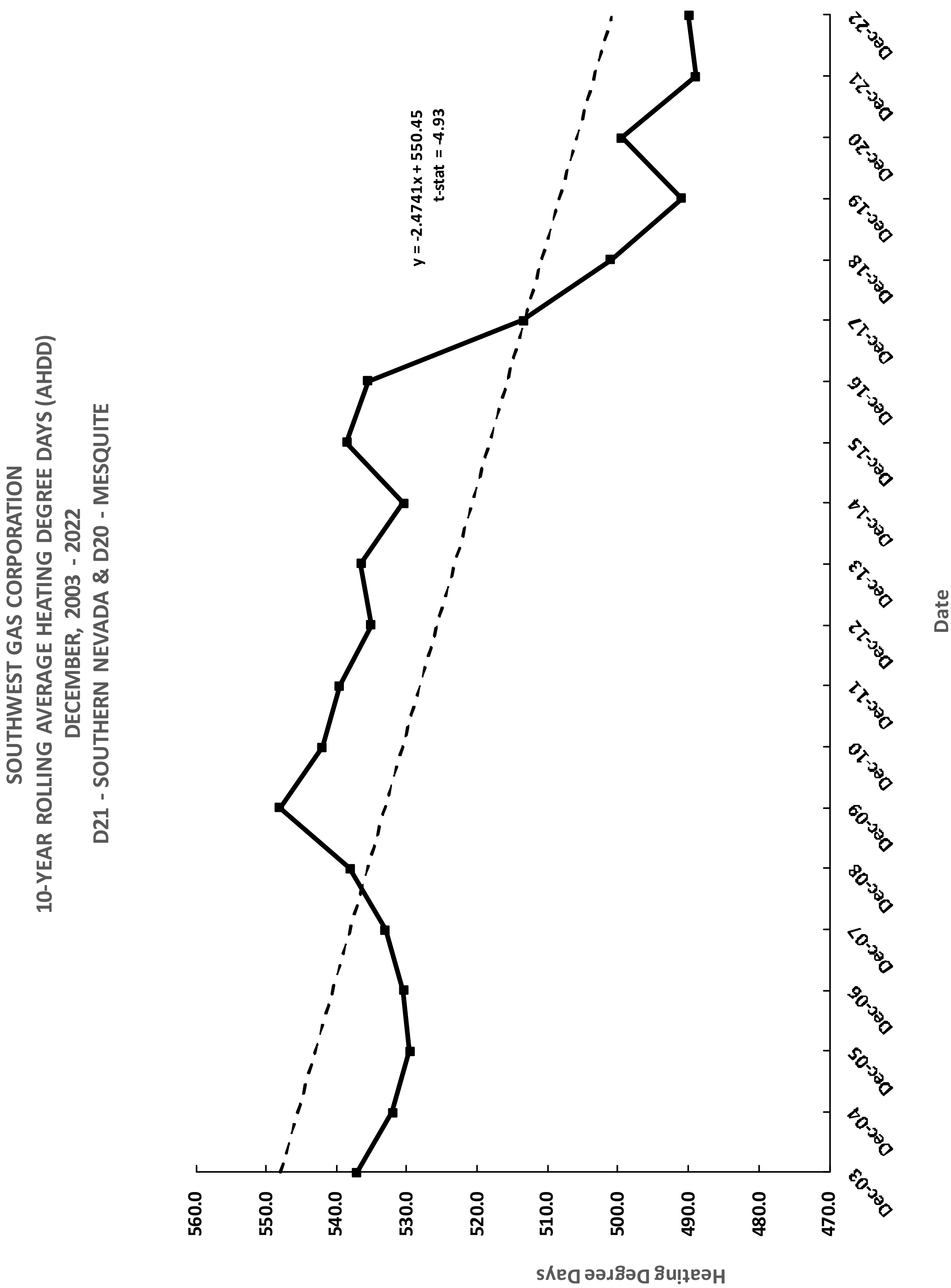


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
DECEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = -2.4741x + 550.45
t-stat = -4.93
Heating Degree Days
560.0
550.0
540.0
530.0
520.0
510.0
500.0
490.0
480.0
470.0
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Dec-09
Dec-10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
Dec-16
Dec-17
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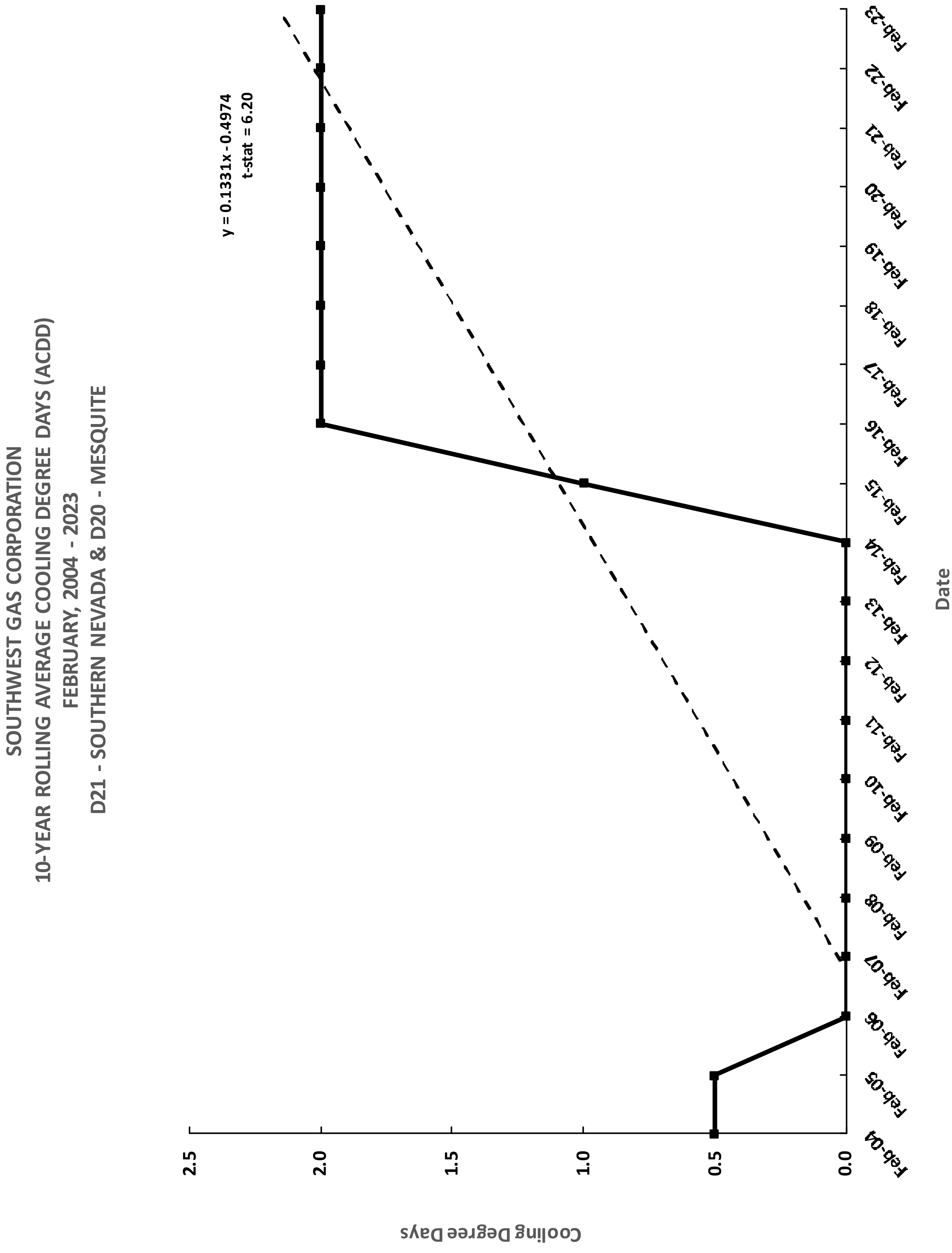
Dec-19
Dec-20
Dec-21
Dec-22
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
FEBRUARY, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = 0.1331x - 0.4974
t-stat = 6.20
Cooling Degree Days
0.0
0.5
1.0
1.5
2.0
2.5
Date
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
Feb-13
Feb-14
Feb-15
Feb-16
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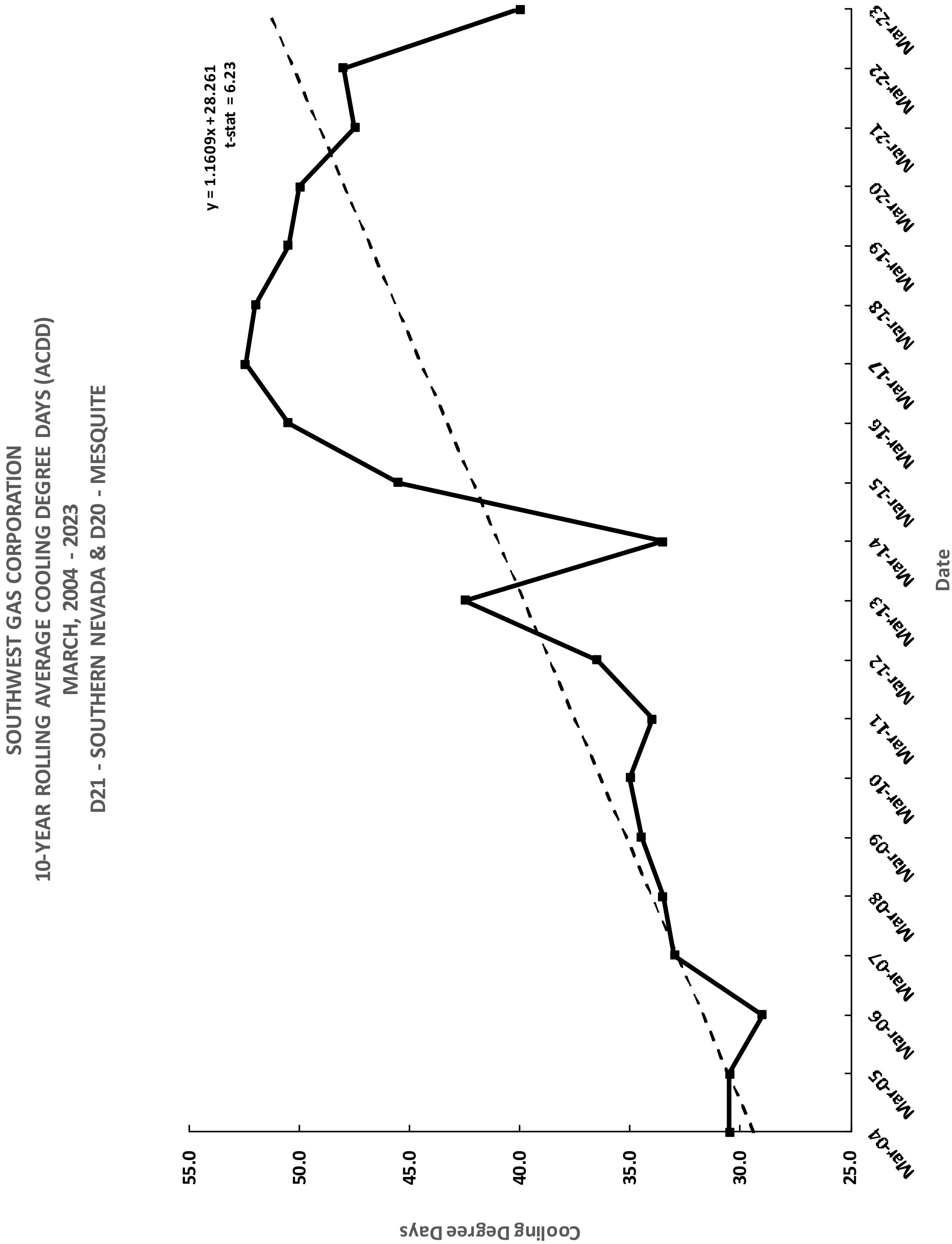
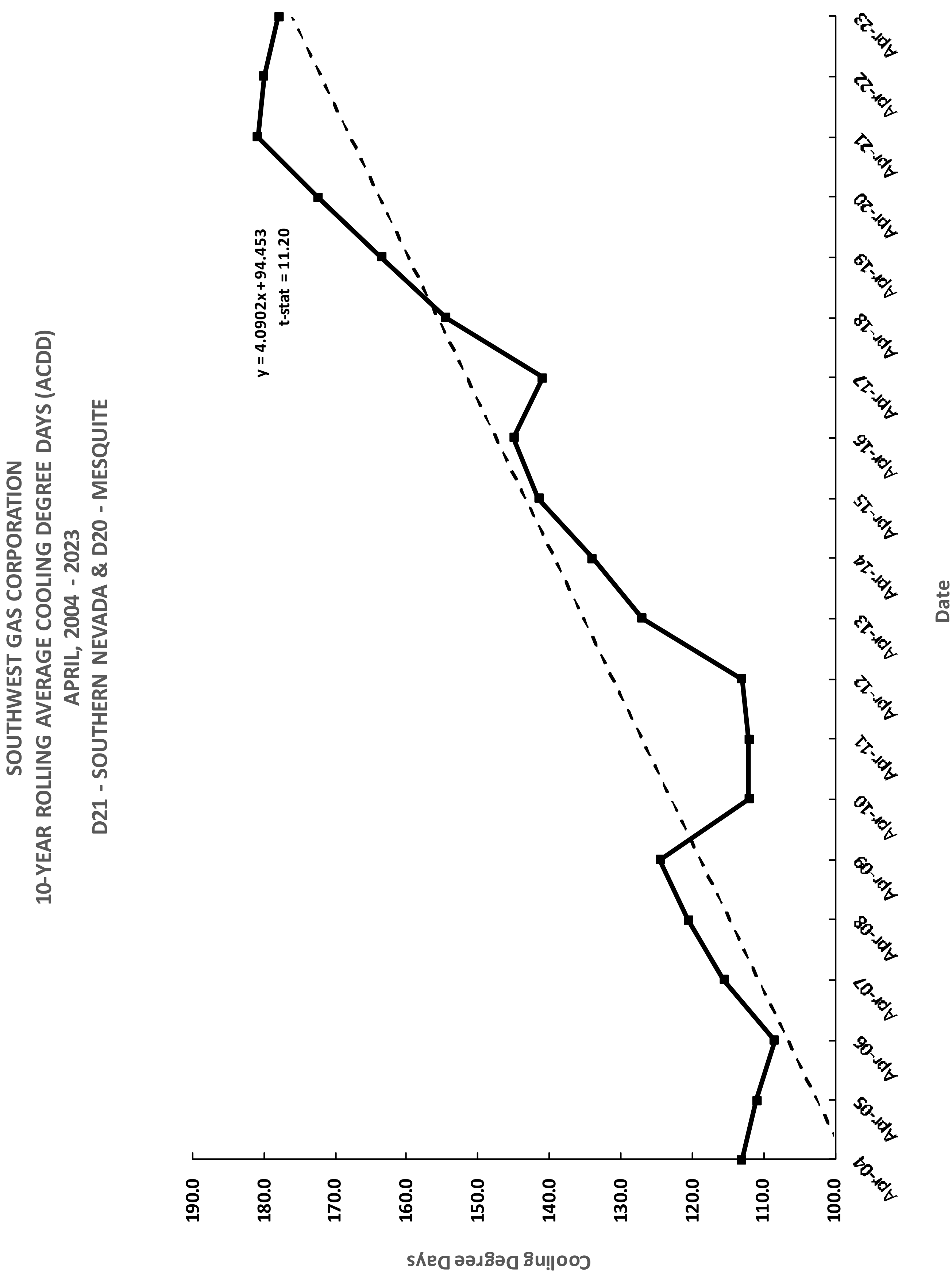
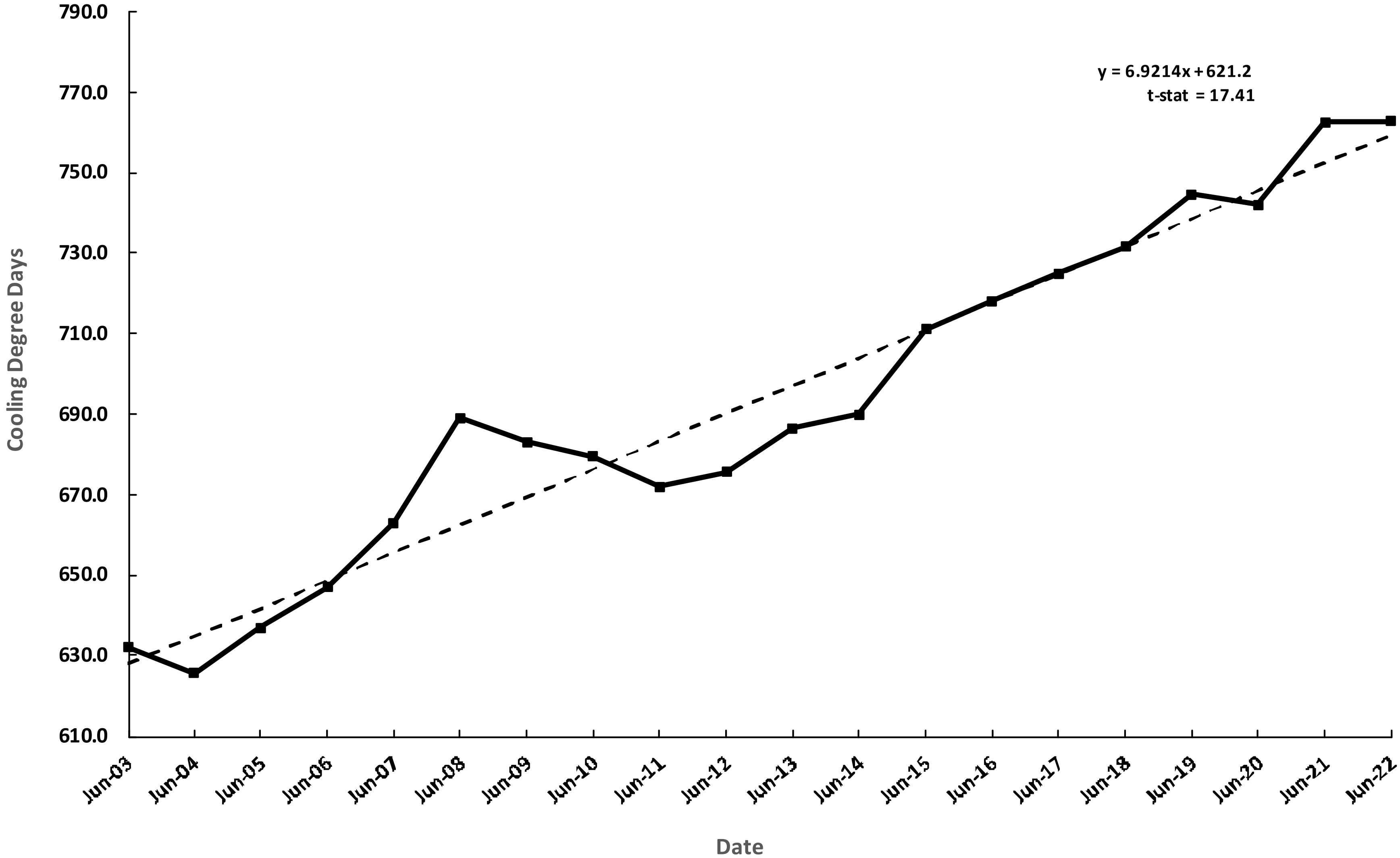
Feb-21
Feb-22
Feb-23

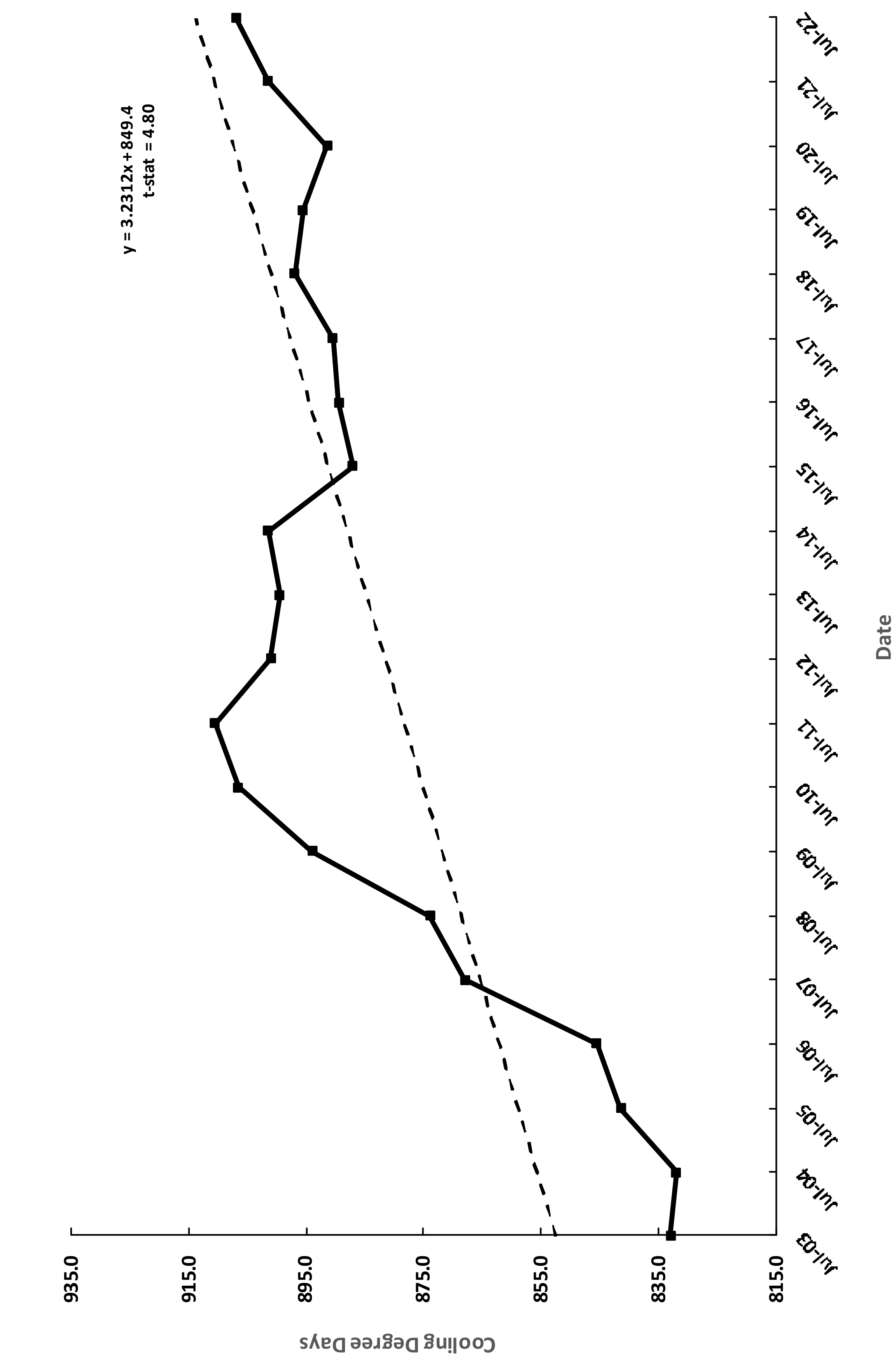

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
MARCH, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = 1.1609x + 28.261
t-stat = 6.23
Cooling Degree Days
55.0
50.0
45.0
40.0
35.0
30.0
25.0
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Mar-23
Date

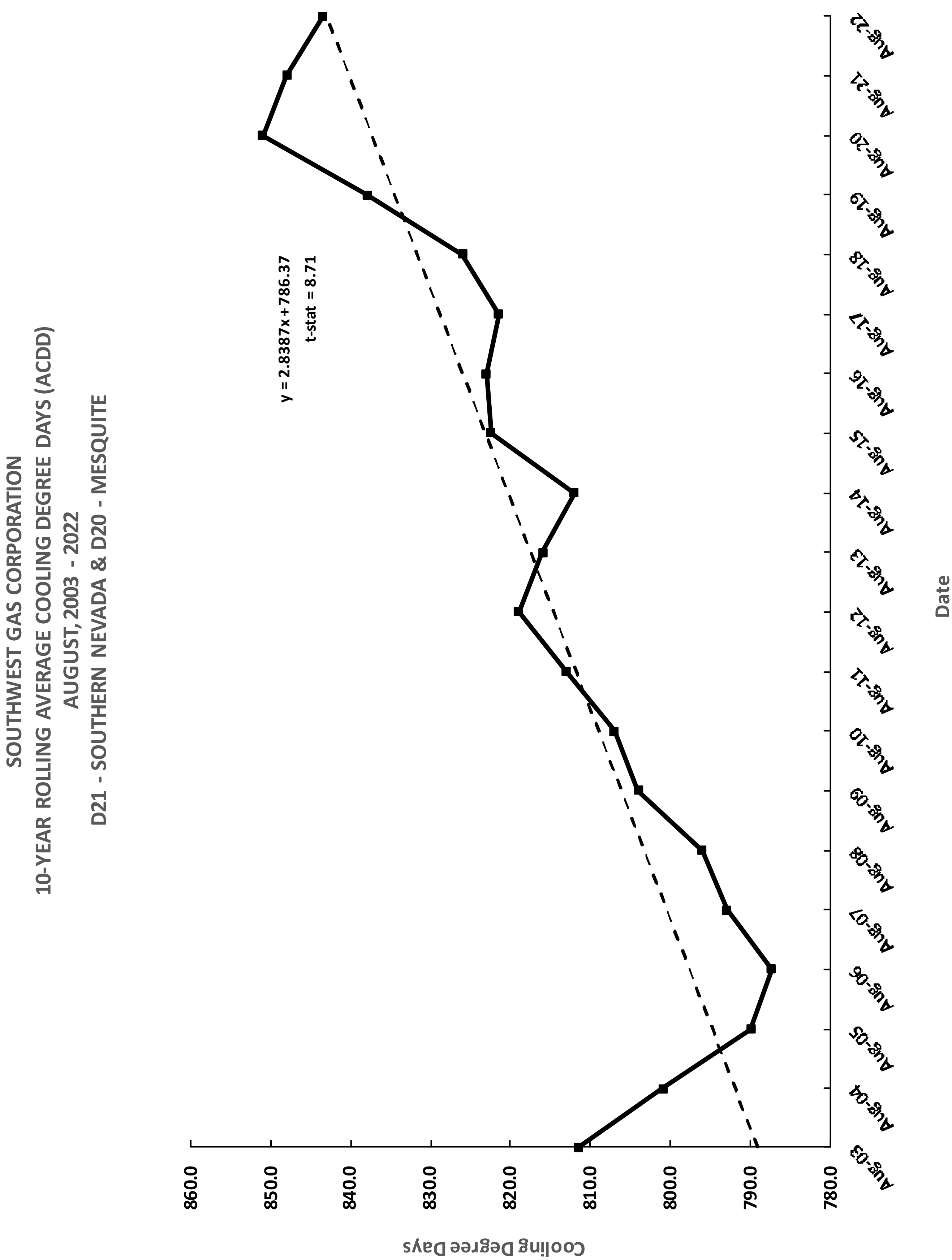

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
APRIL, 2004 - 2023
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = 4.0902x + 94.453
t-stat = 11.20
Cooling Degree Days
190.0
180.0
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23
Date

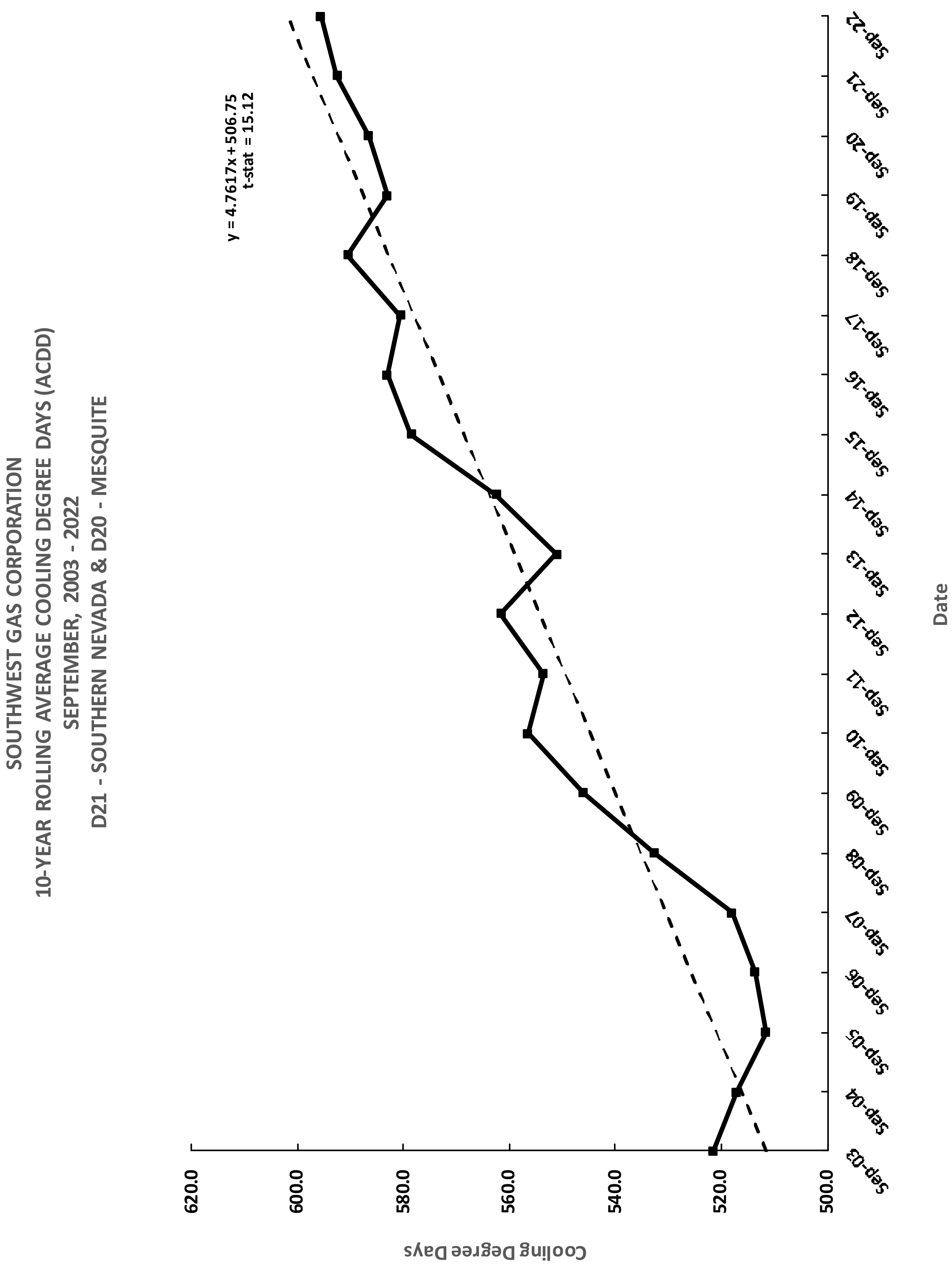
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JUNE, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE

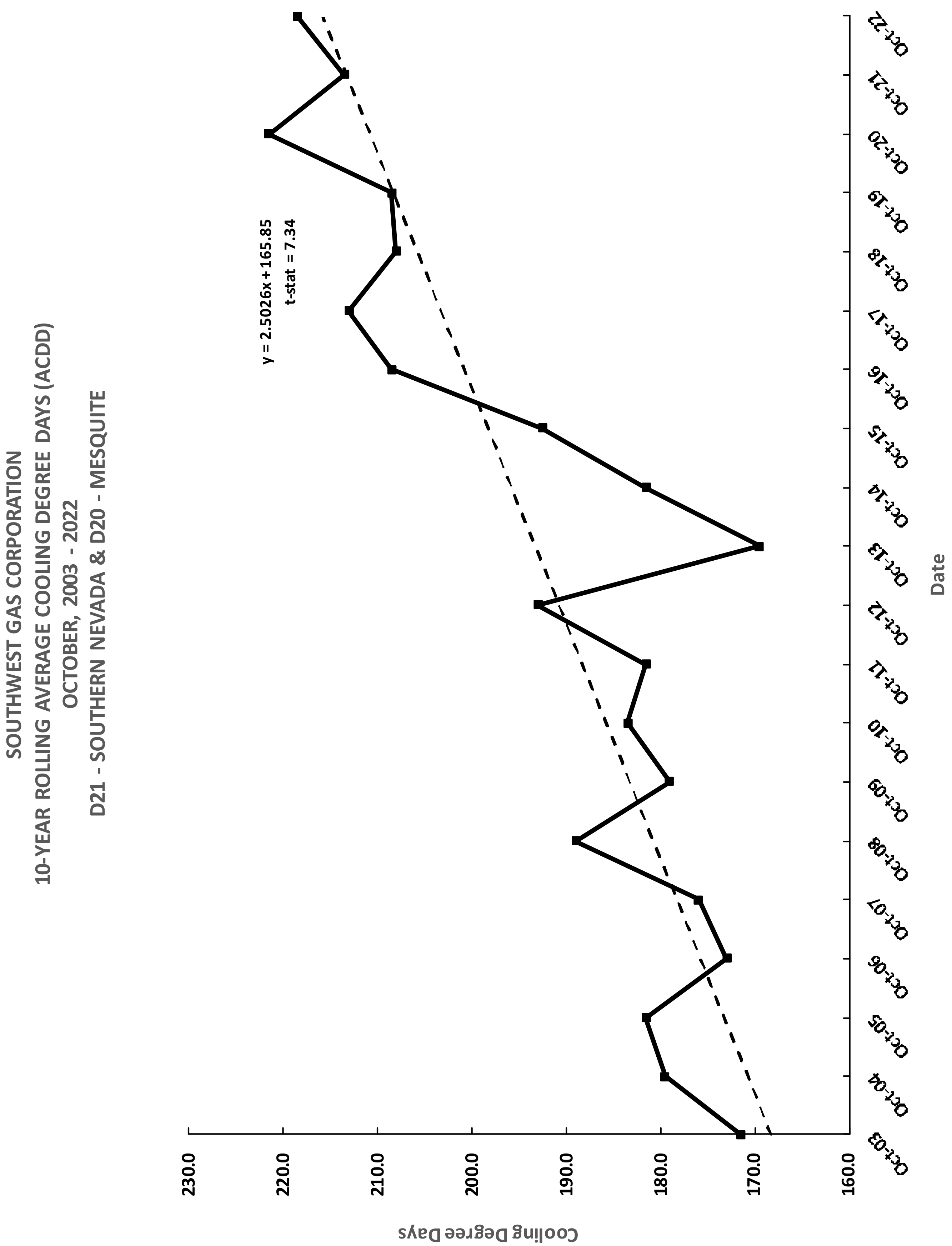


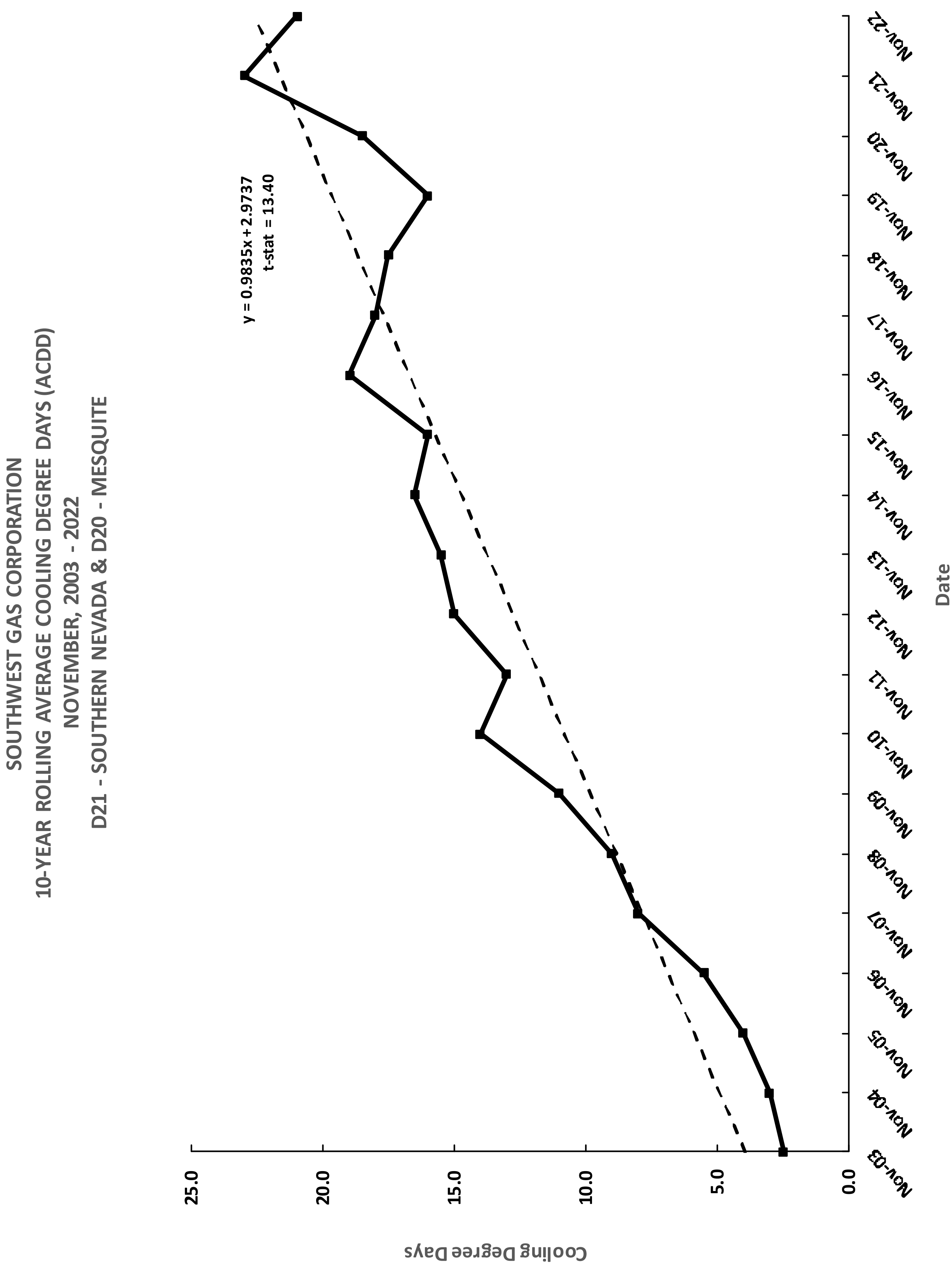
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JULY, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
AUGUST, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = 2.8387x + 786.37
t-stat = 8.71
Cooling Degree Days
860.0
850.0
840.0
830.0
820.0
810.0
800.0
790.0
780.0
Aug-03
Aug-04
Aug-05
Aug-06
Aug-07
Aug-08
Aug-09
Aug-10
Aug-11
Aug-12
Aug-13
Aug-14
Aug-15
Aug-16
Aug-17
Aug-18
Aug-19
Aug-20
Aug-21
Aug-22
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
SEPTEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = 4.7617x + 506.75
t-stat = 15.12
Cooling Degree Days
620.0
600.0
580.0
560.0
540.0
520.0
500.0
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
Sep-17
Sep-18
Sep-19
Sep-20
Sep-21
Sep-22
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
OCTOBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = 2.5026x + 165.85
t-stat = 7.34
Cooling Degree Days
230.0
220.0
210.0
200.0
190.0
180.0
170.0
160.0
Oct-03
Oct-04
Oct-05
Oct-06
Oct-07
Oct-08
Oct-09
Oct-10
Oct-11
Oct-12
Oct-13
Oct-14
Oct-15
Oct-16
Oct-17
Oct-18
Oct-19
Oct-20
Oct-21
Oct-22
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
NOVEMBER, 2003 - 2022
D21 - SOUTHERN NEVADA & D20 - MESQUITE
y = 0.9835x + 2.9737
t-stat = 13.40
Cooling Degree Days
25.0
20.0
15.0
10.0
5.0
0.0
Nov-03
Nov-04
Nov-05
Nov-06
Nov-07
Nov-08
Nov-09
Nov-10
Nov-11
Nov-12
Nov-13
Nov-14
Nov-15
Nov-16
Nov-17
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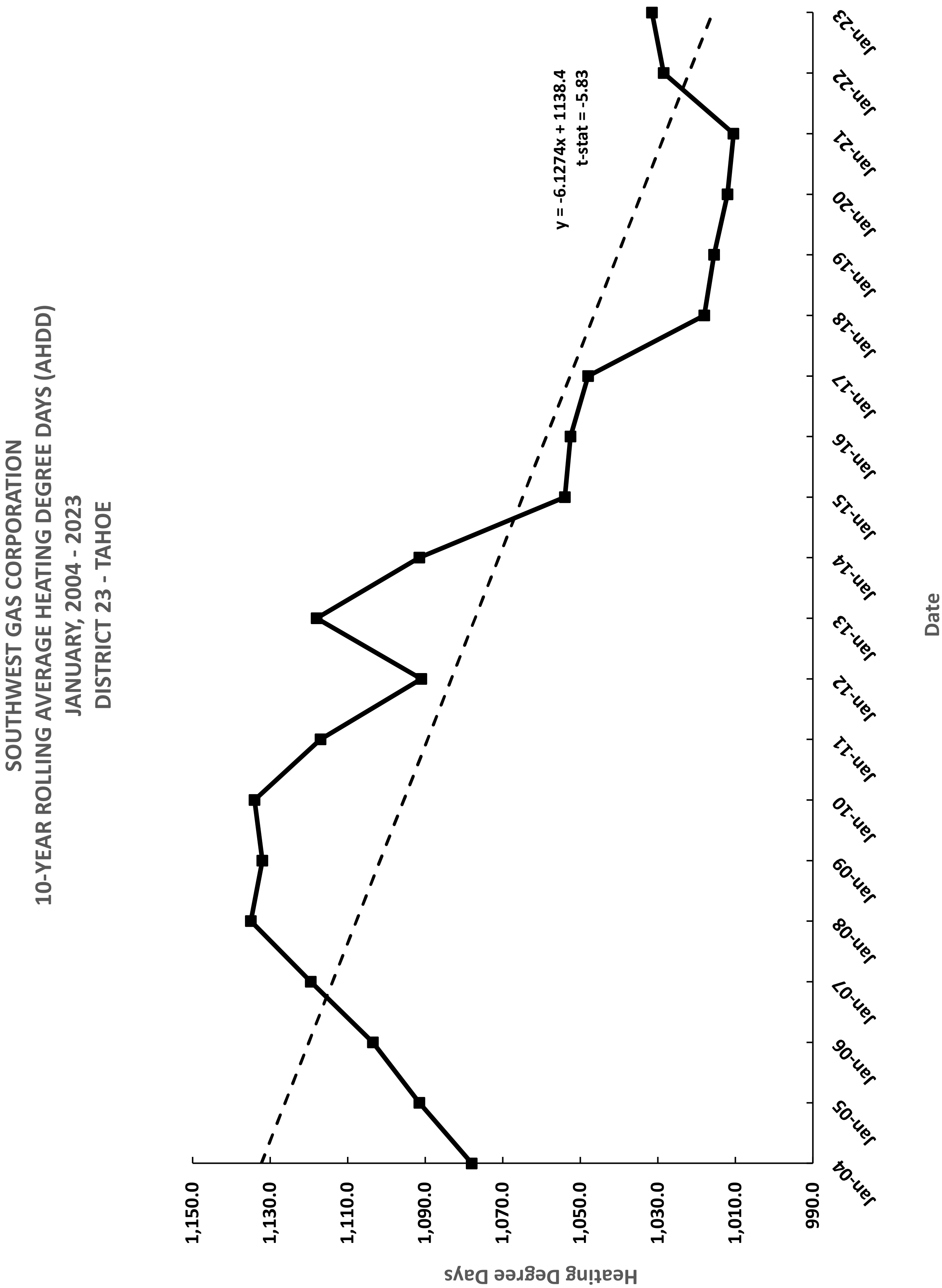
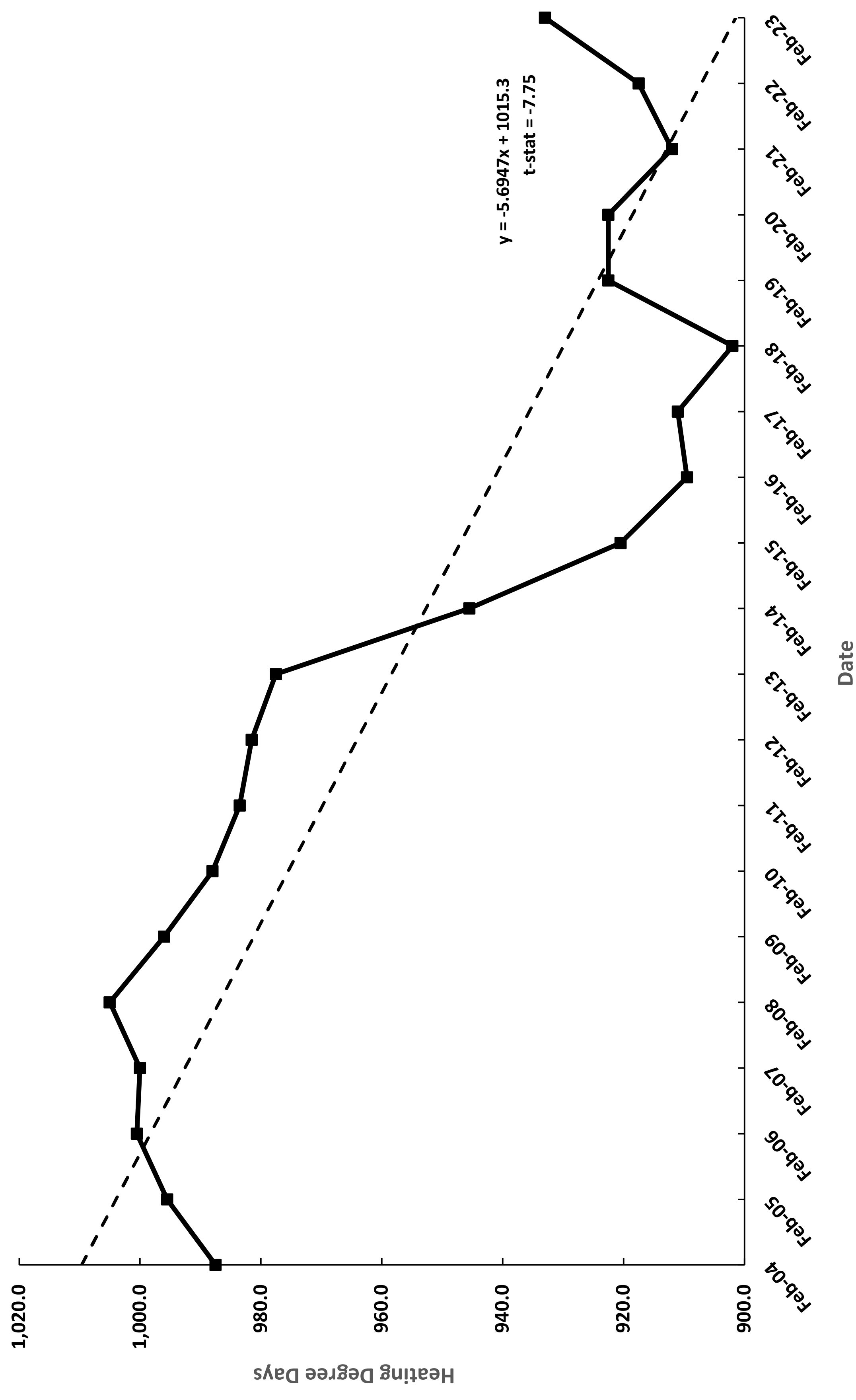
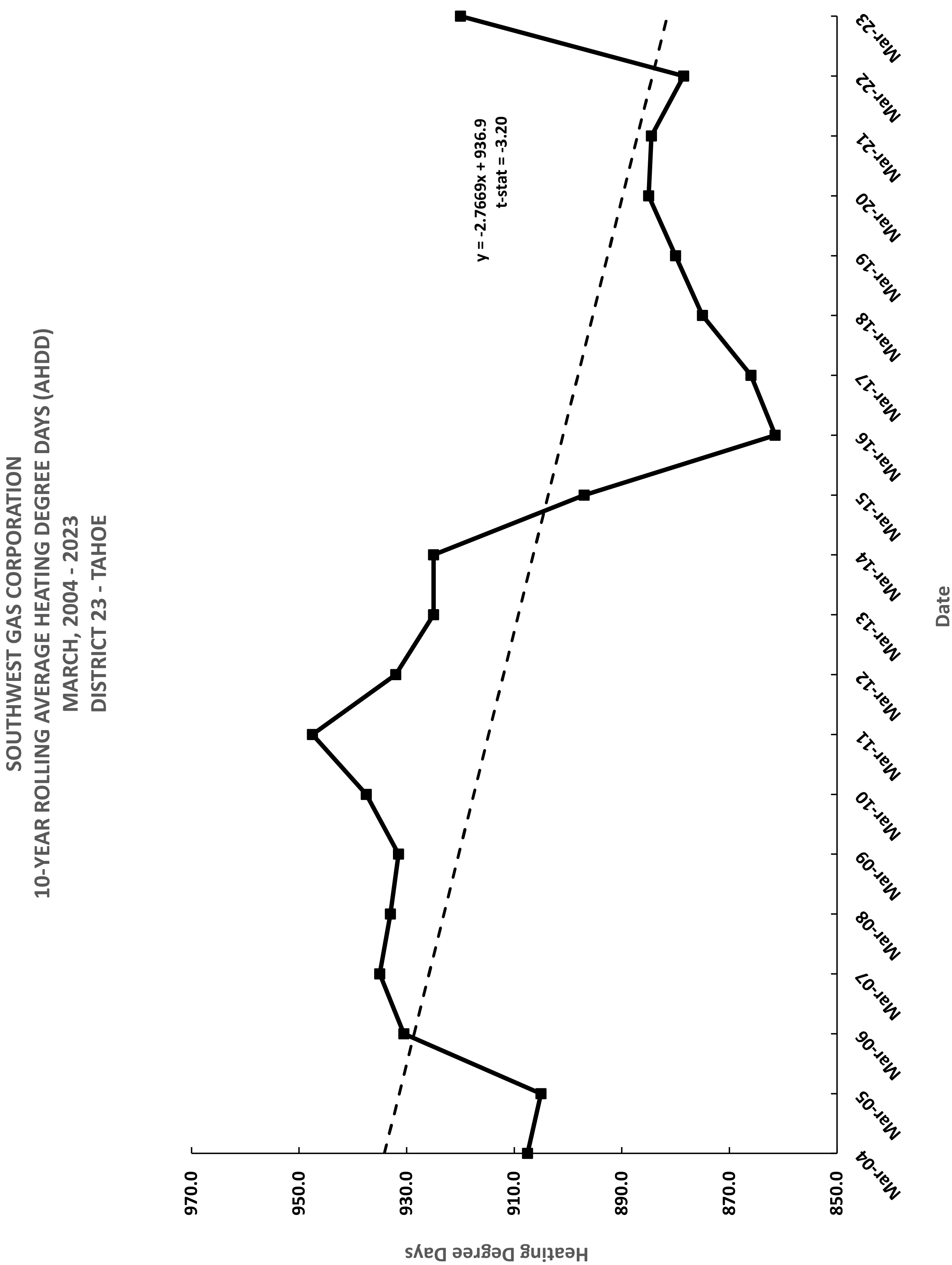
Nov-19
Nov-20
Nov-21
Nov-22
Date


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JANUARY, 2004 - 2023
DISTRICT 23 - TAHOE
y = -6.1274x + 1138.4
t-stat = -5.83
Heating Degree Days
1,150.0
1,130.0
1,110.0
1,090.0
1,070.0
1,050.0
1,030.0
1,010.0
990.0
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
Jan-17
Jan-18
Jan-19
Jan-20
Jan-21
Jan-22
Jan-23
Date

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
DISTRICT 23 - TAHOE




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
DISTRICT 23 - TAHOE
y = -2.7669x + 936.9
t-stat = -3.20
Heating Degree Days
970.0
950.0
930.0
910.0
890.0
870.0
850.0
Date
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
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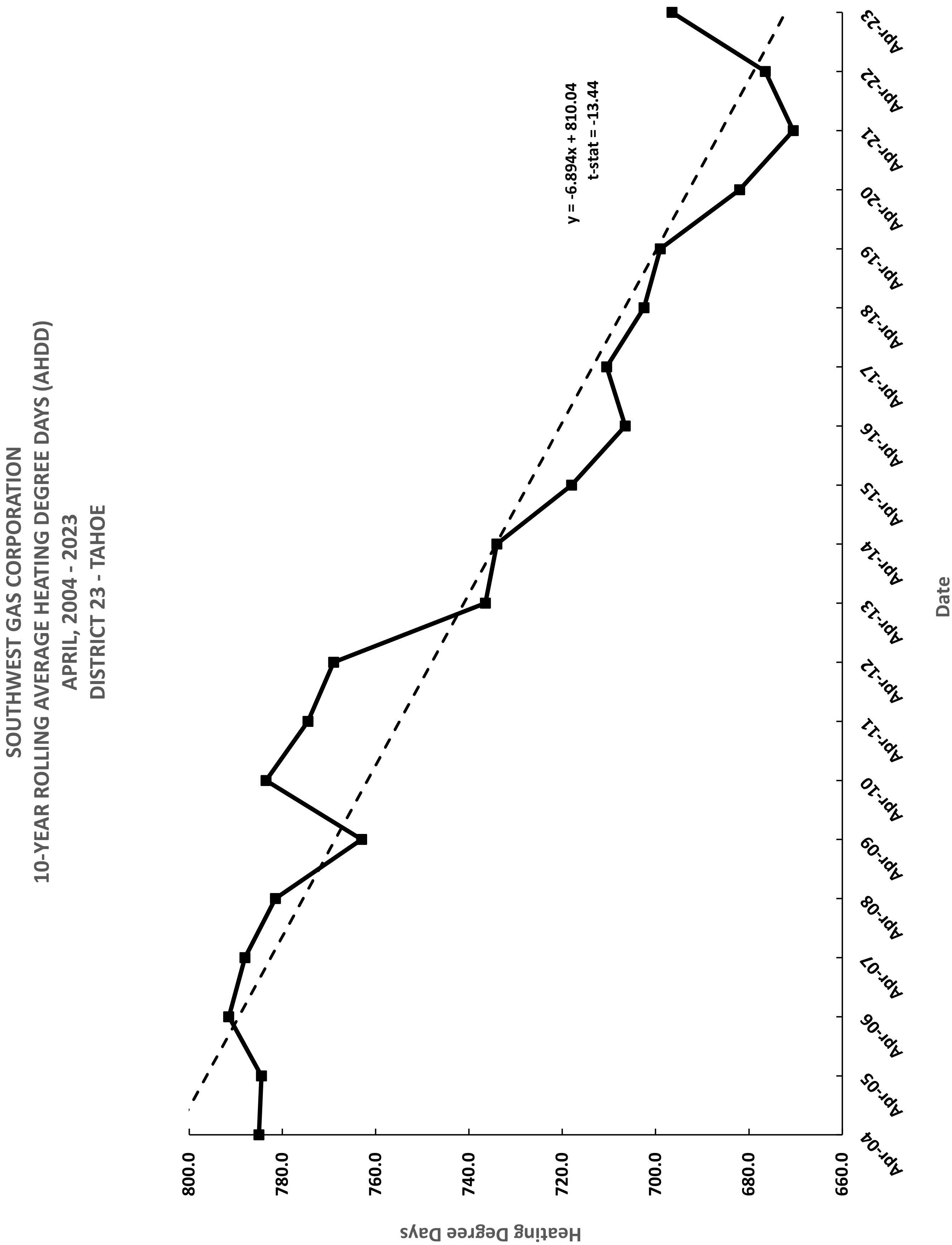
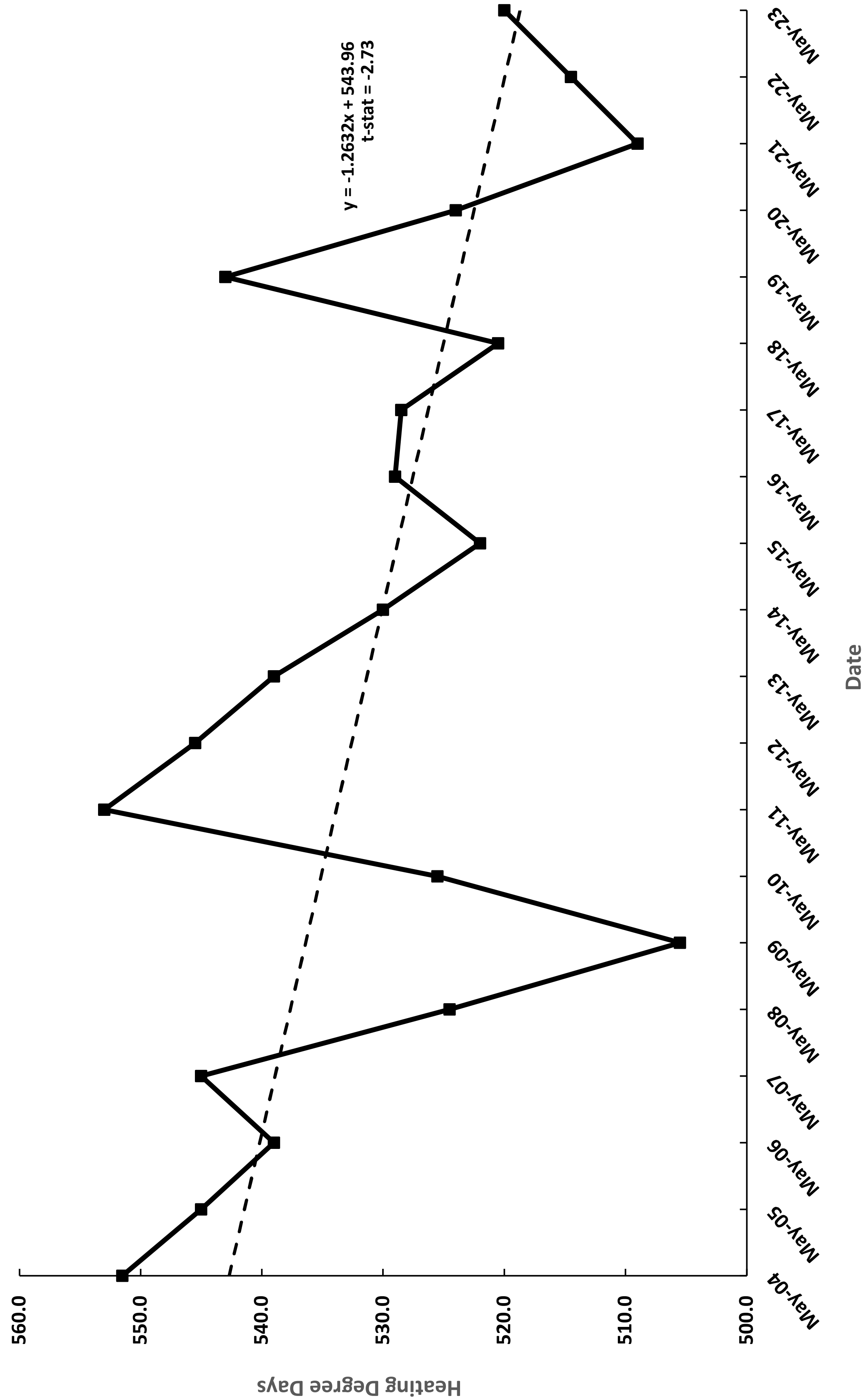
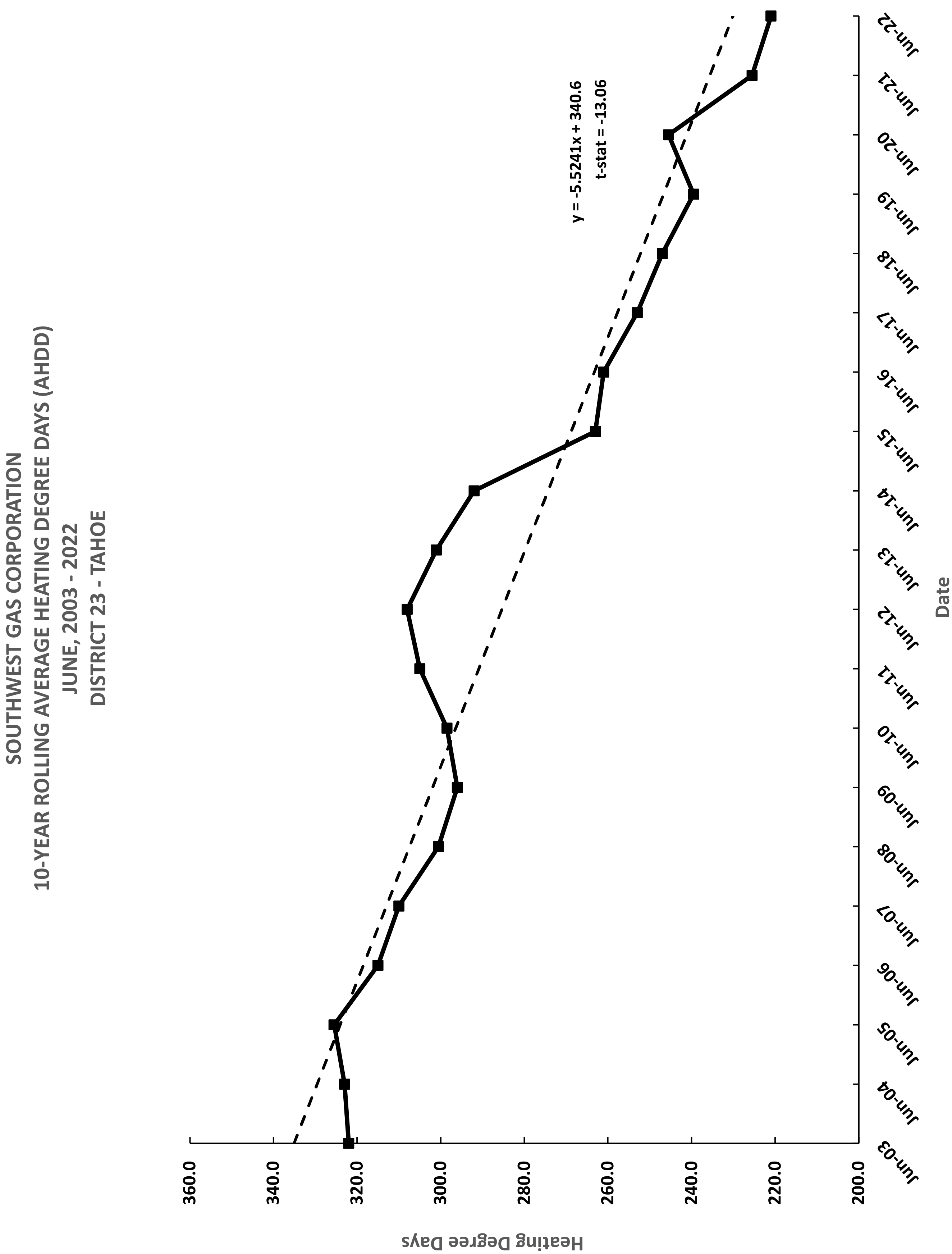
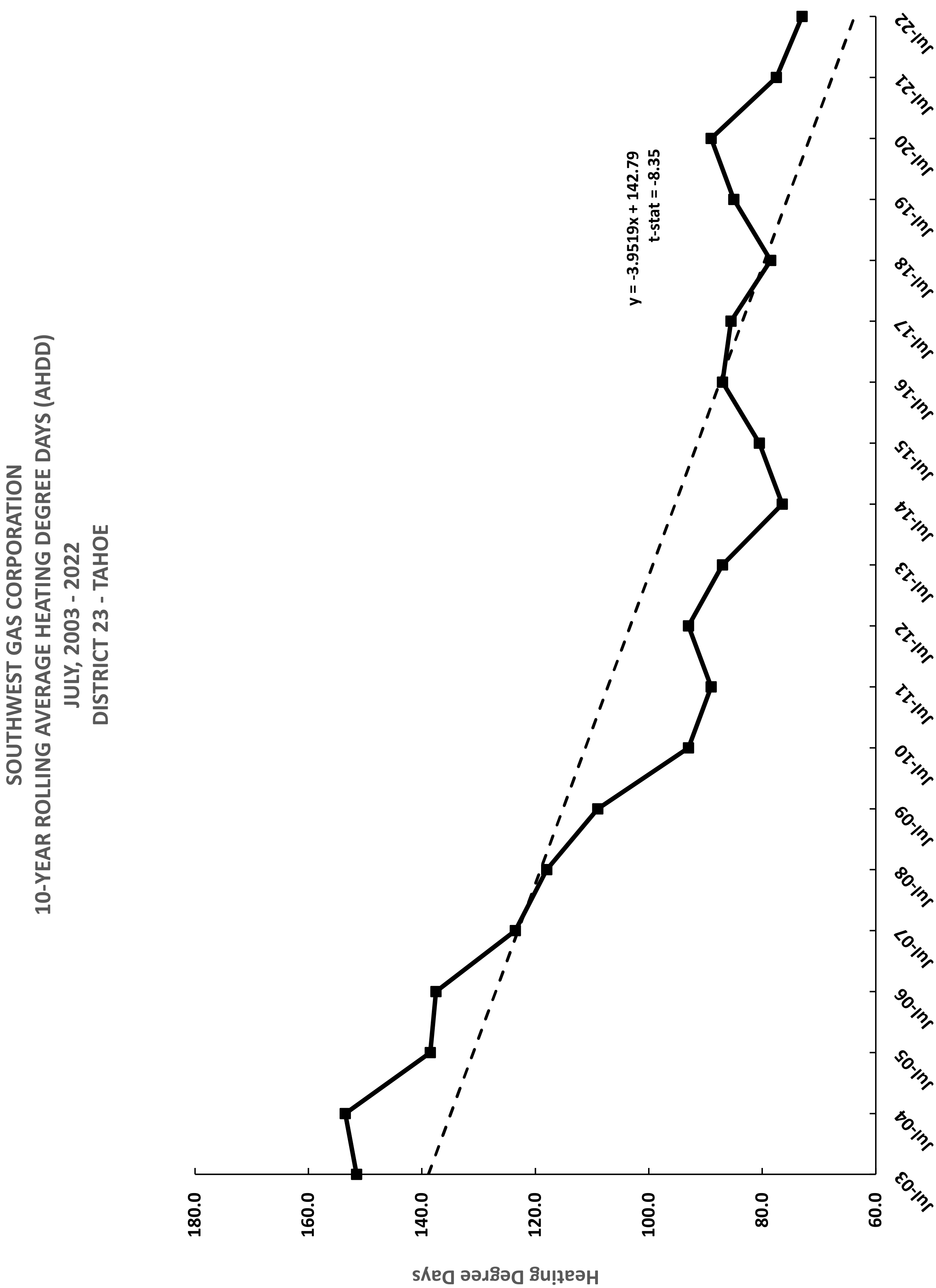
Mar-21
Mar-22
Mar-23


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
DISTRICT 23 - TAHOE
y = -6.894x + 810.04
t-stat = -13.44
Heating Degree Days
800.0
780.0
760.0
740.0
720.0
700.0
680.0
660.0
Date
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23

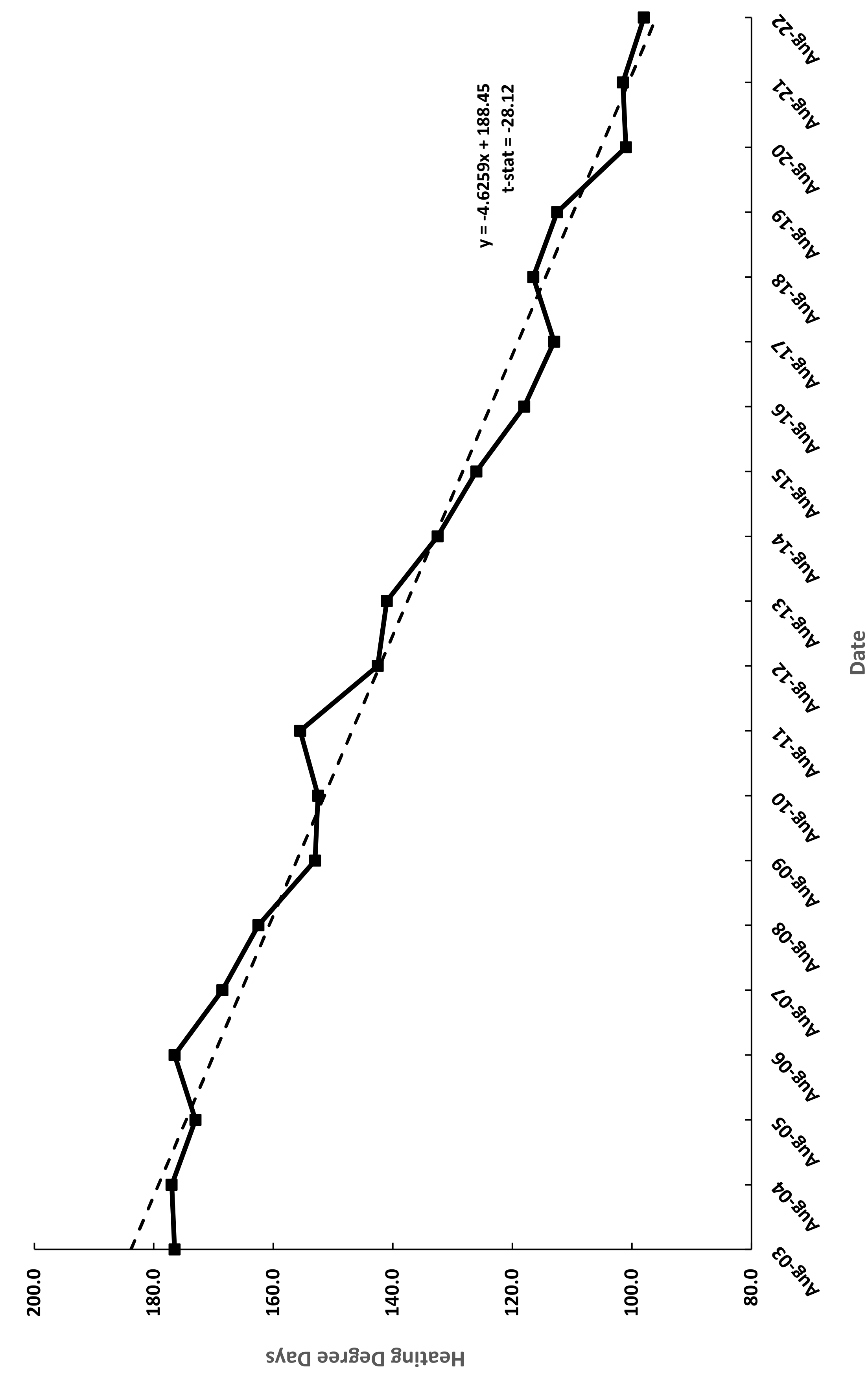
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MAY, 2004 - 2023
DISTRICT 23 - TAHOE

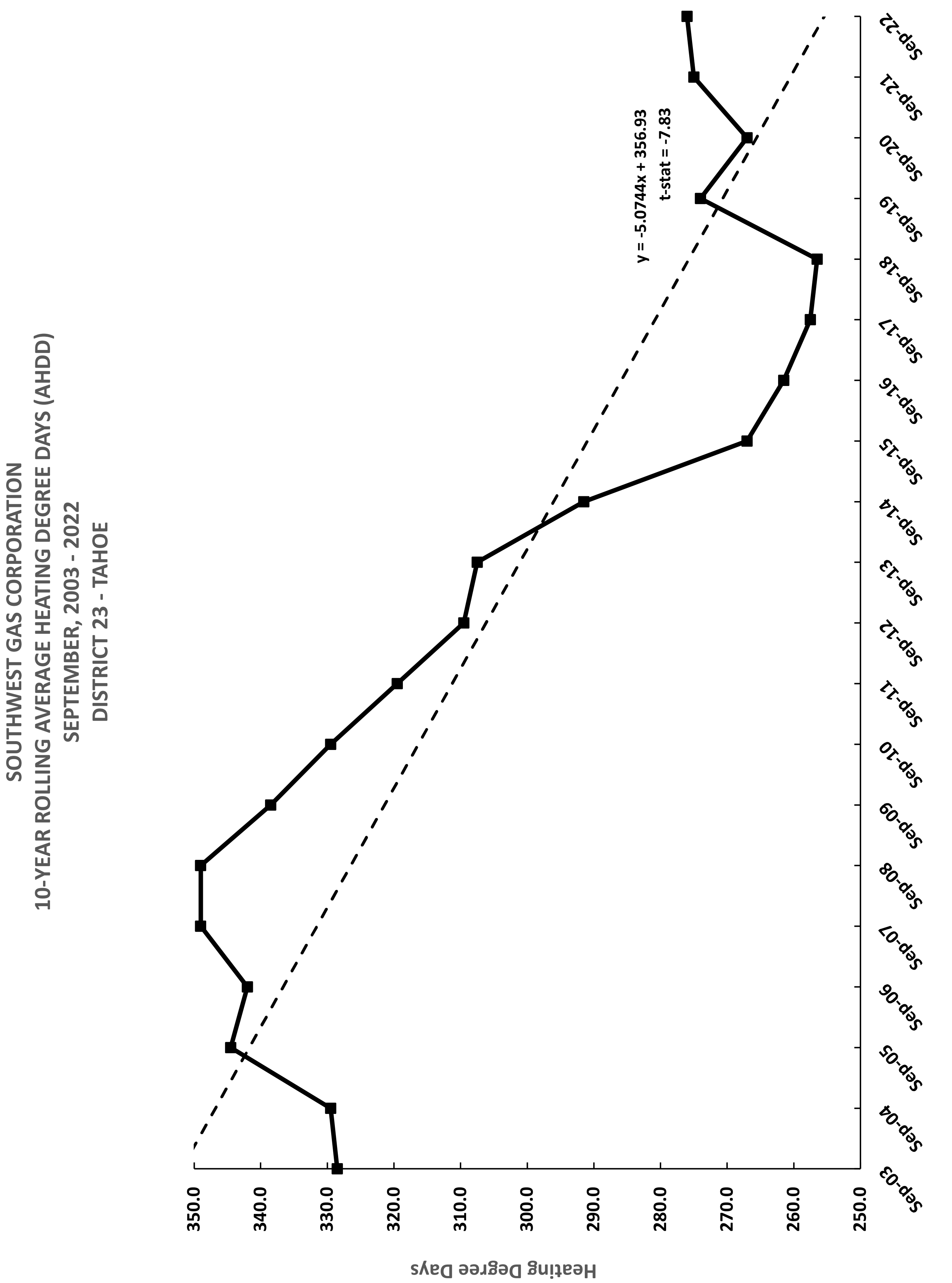



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
DISTRICT 23 - TAHOE
y = -5.5241x + 340.6
t-stat = -13.06
Heating Degree Days
360.0
340.0
320.0
300.0
280.0
260.0
240.0
220.0
200.0
Jun-03
Jun-04
Jun-05
Jun-06
Jun-07
Jun-08
Jun-09
Jun-10
Jun-11
Jun-12
Jun-13
Jun-14
Jun-15
Jun-16
Jun-17
Jun-18
Jun-19
Jun-20
Jun-21
Jun-22
Date

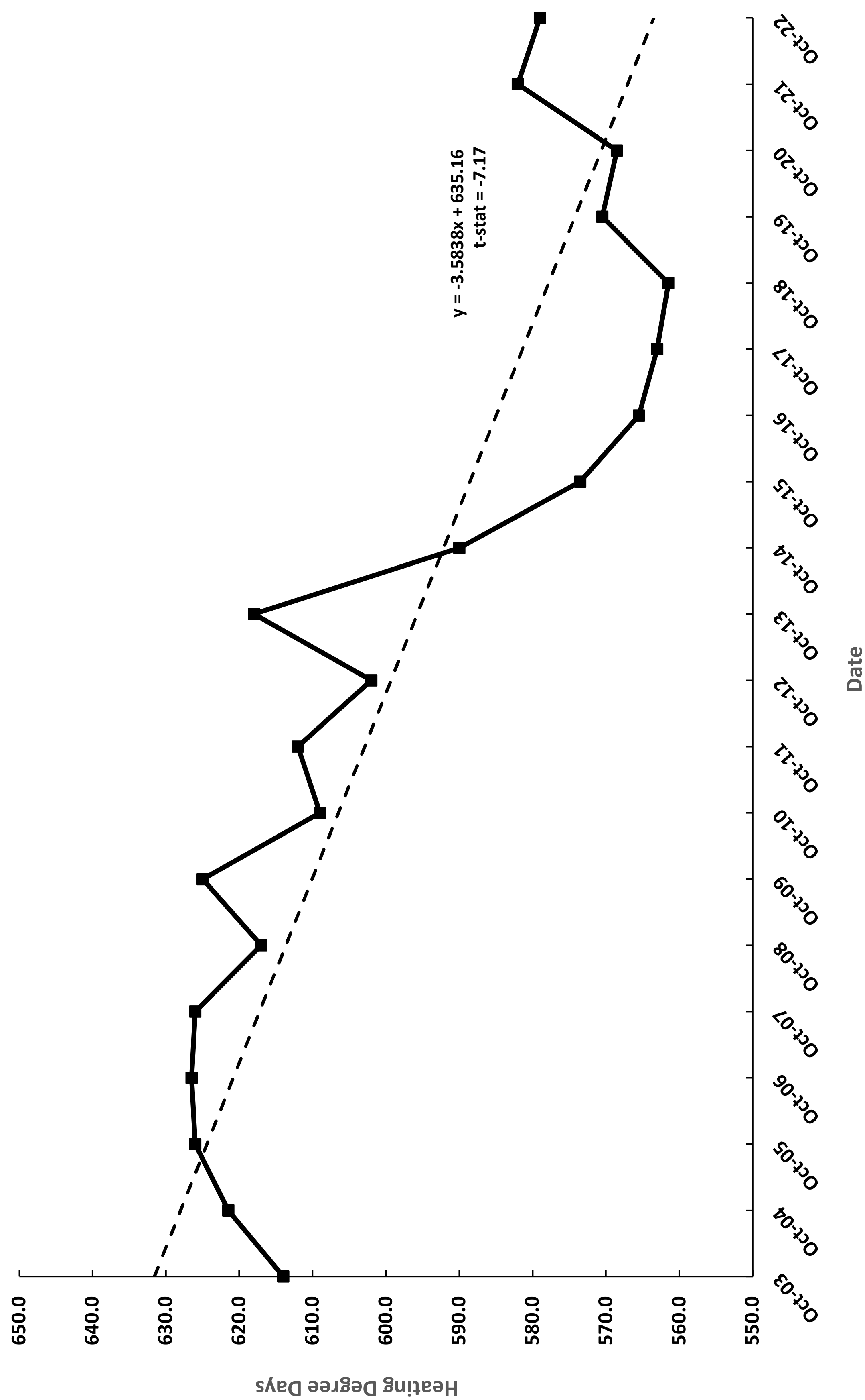

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
DISTRICT 23 - TAHOE
y = -3.9519x + 142.79
t-stat = -8.35
Heating Degree Days
180.0
160.0
140.0
120.0
100.0
80.0
60.0
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Jul-16
Jul-17
Jul-18
Jul-19
Jul-20
Jul-21
Jul-22
Date

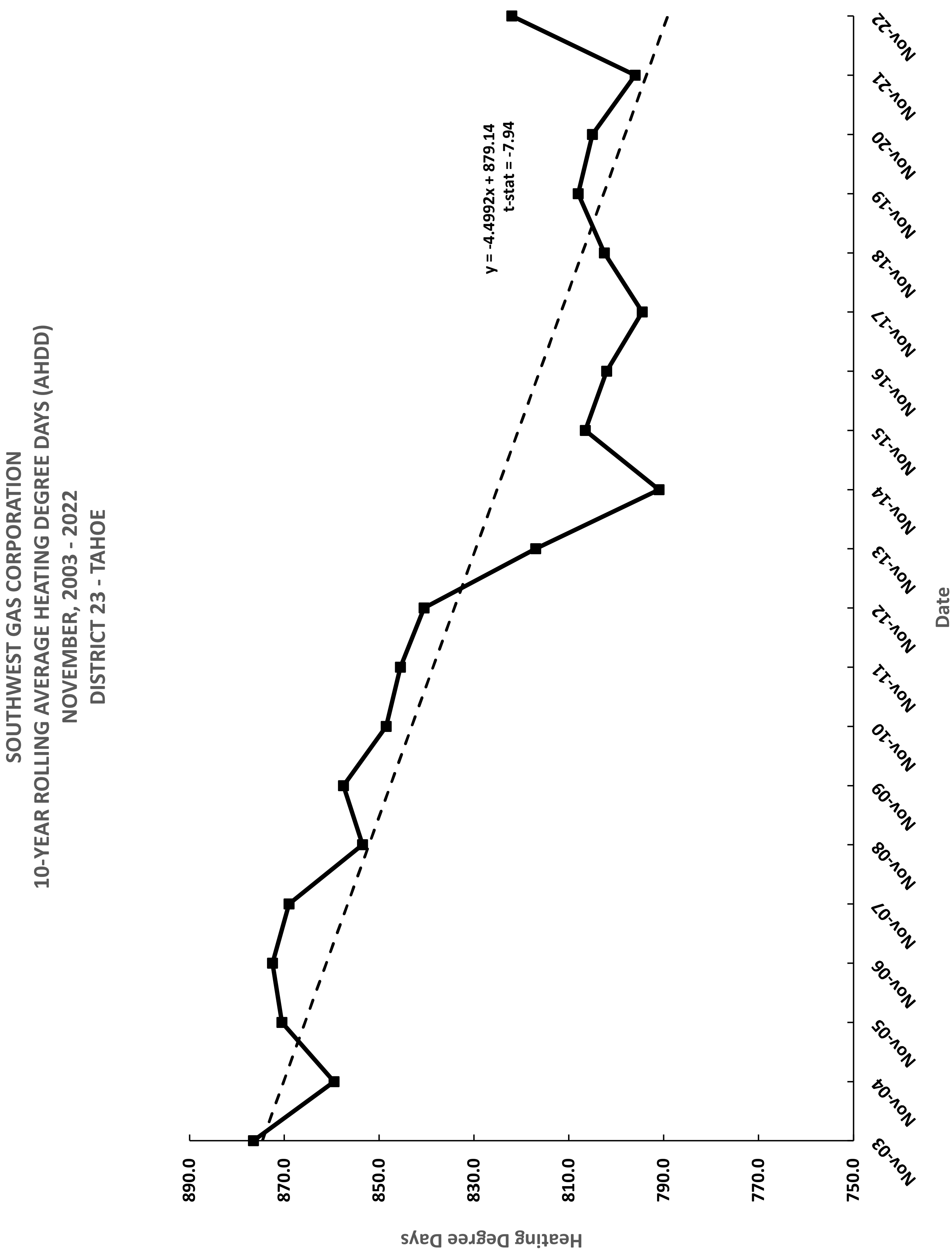
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
DISTRICT 23 - TAHOE



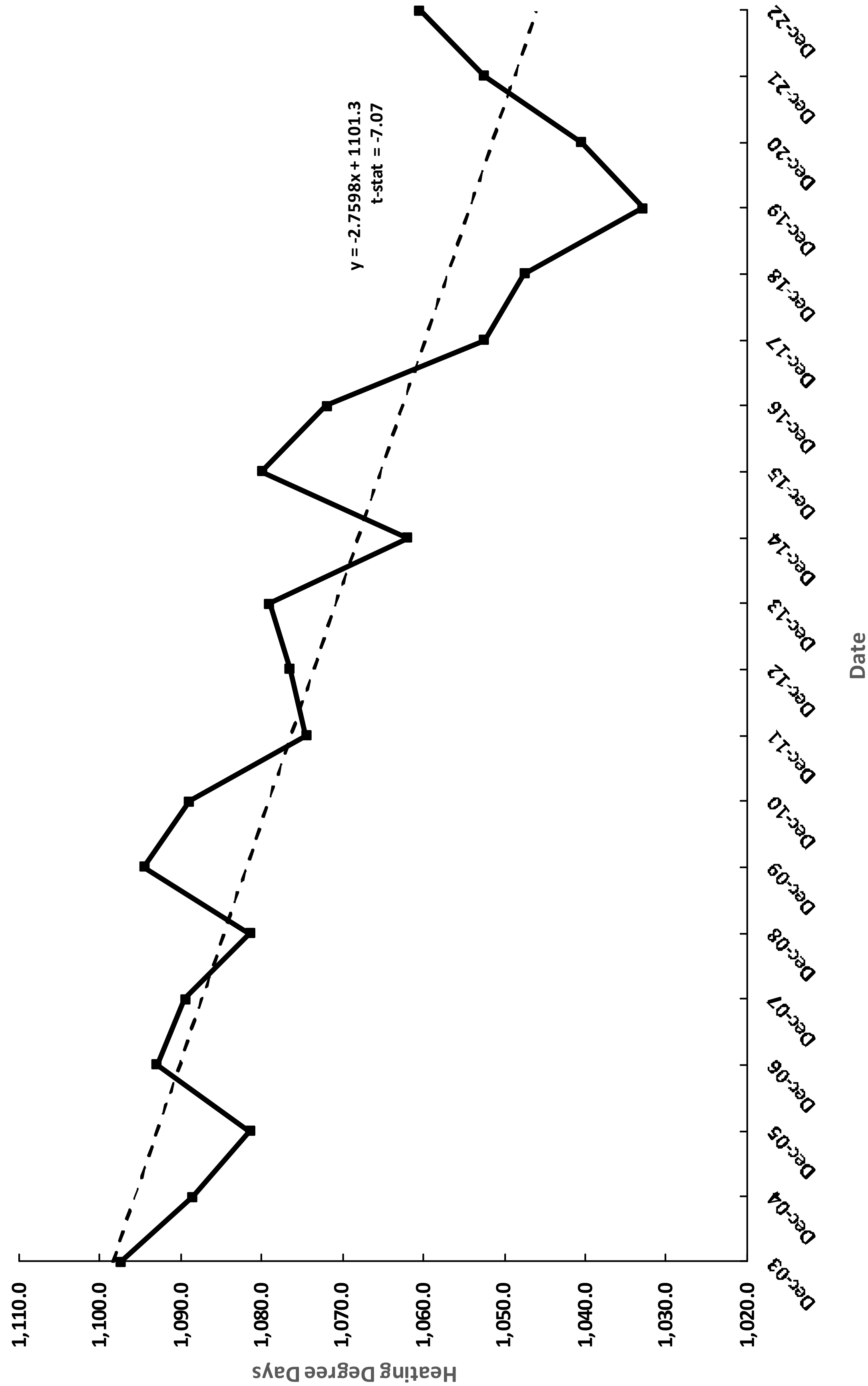

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
DISTRICT 23 - TAHOE
y = -5.0744x + 356.93
t-stat = -7.83
Heating Degree Days
350.0
340.0
330.0
320.0
310.0
300.0
290.0
280.0
270.0
260.0
250.0
Date
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
Sep-17
Sep-18
Sep-19
Sep-20
Sep-21
Sep-22

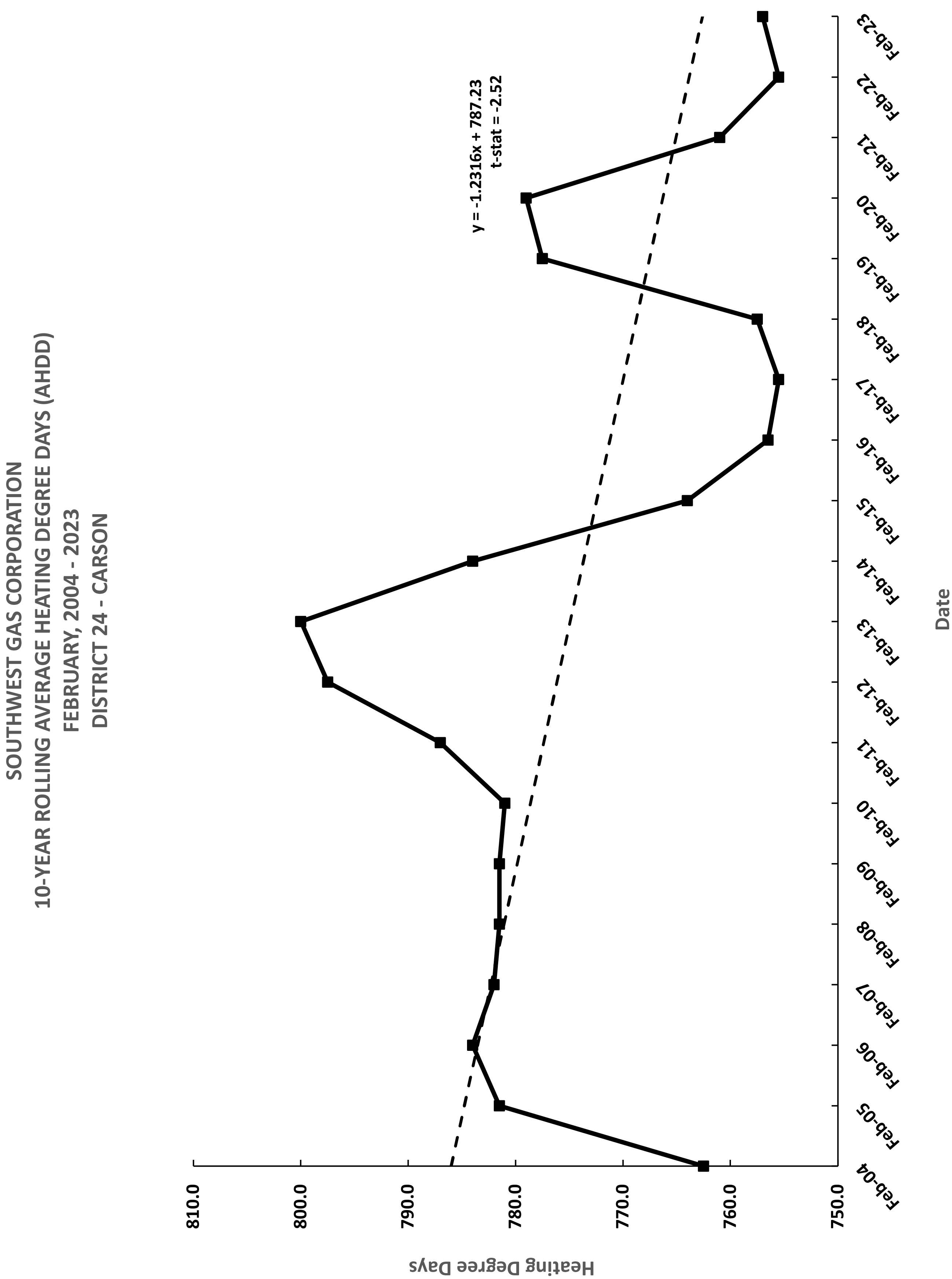
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
DISTRICT 23 - TAHOE

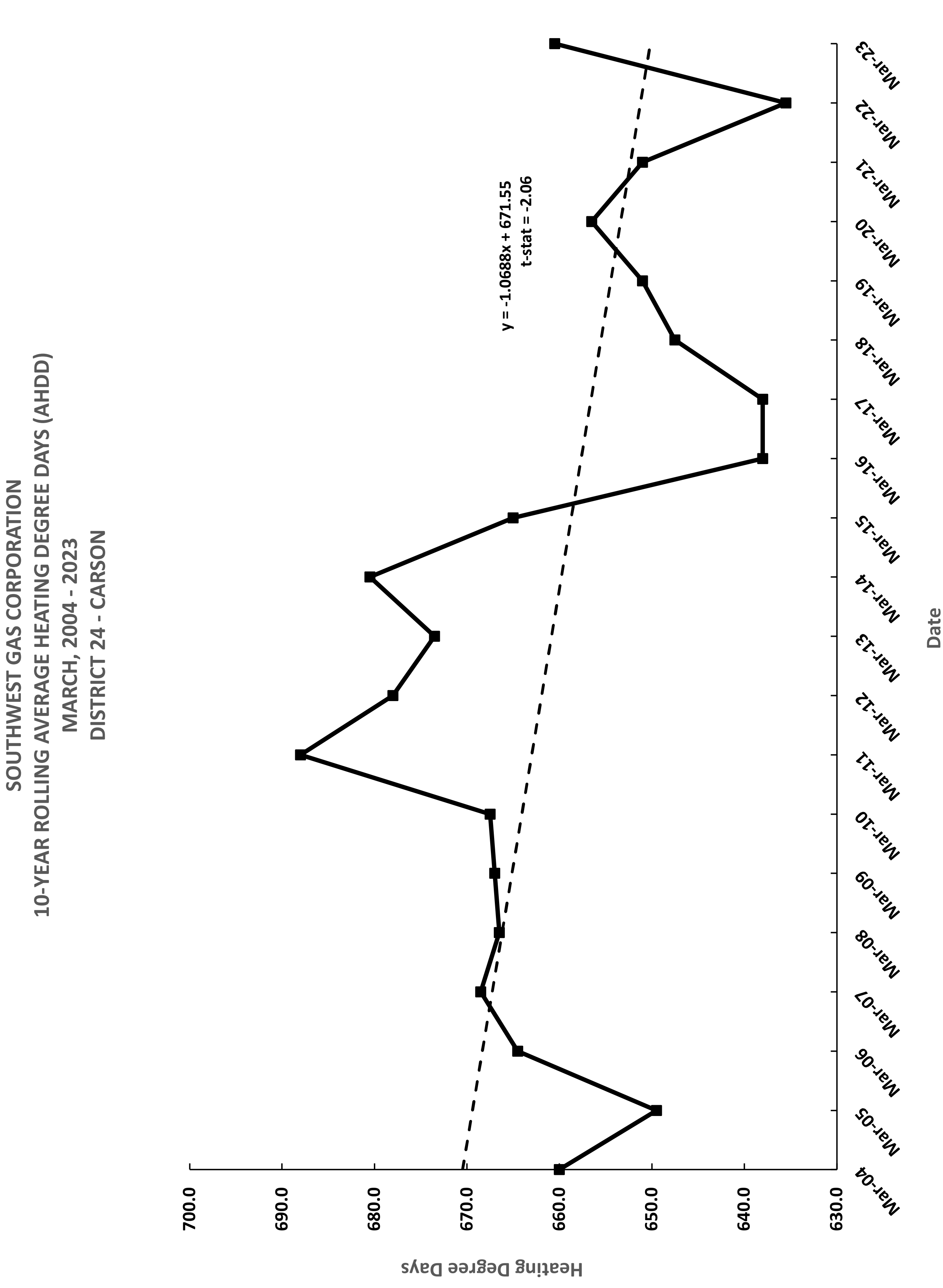



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
DISTRICT 23 - TAHOE
y = -4.4992x + 879.14
t-stat = -7.94
Heating Degree Days
890.0
870.0
850.0
830.0
810.0
790.0
770.0
750.0
Date
Nov-03
Nov-04
Nov-05
Nov-06
Nov-07
Nov-08
Nov-09
Nov-10
Nov-11
Nov-12
Nov-13
Nov-14
Nov-15
Nov-16
Nov-17
Nov-18
Nov-19
Nov-20
Nov-21
Nov-22

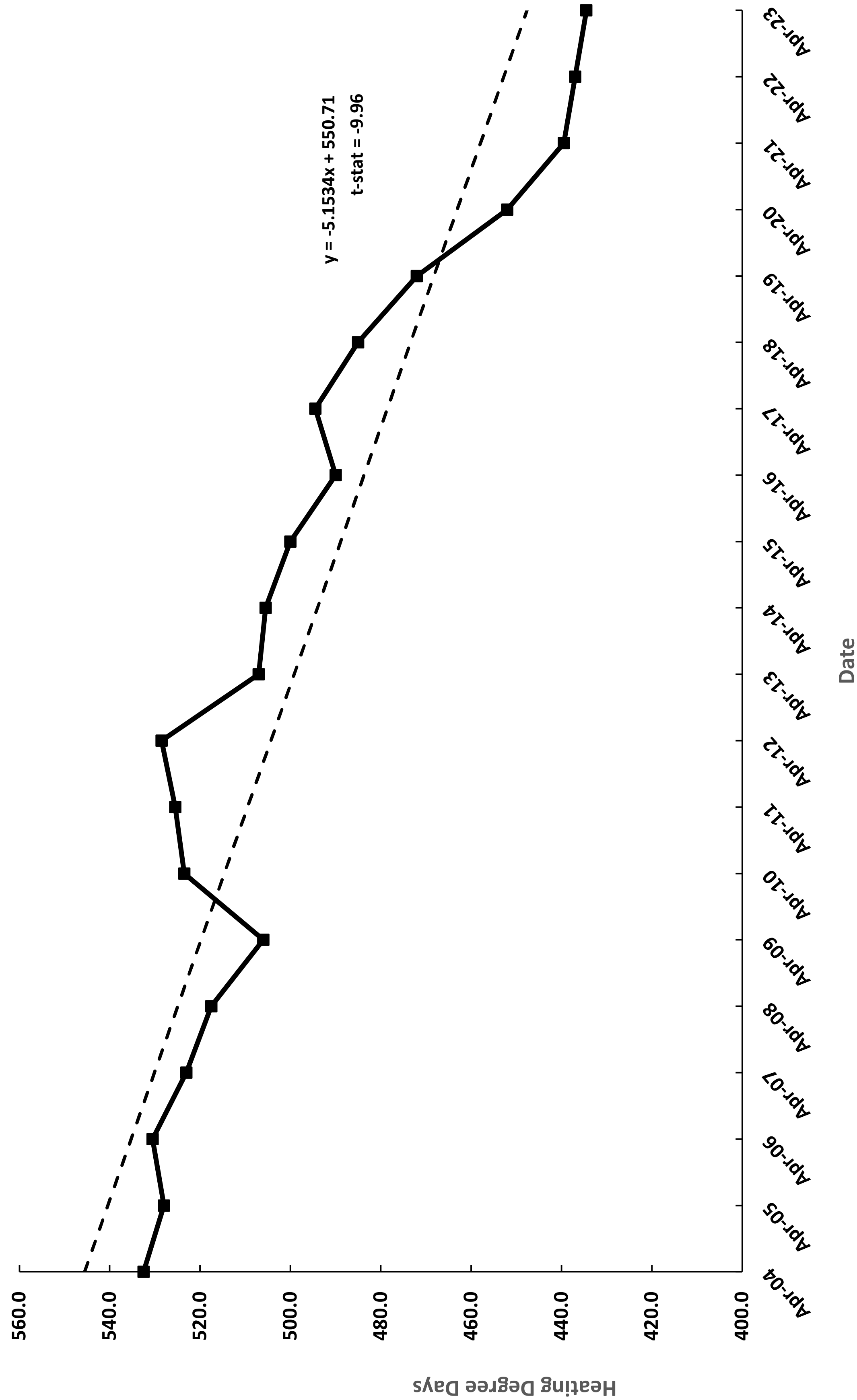
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
DECEMBER, 2003 - 2022
DISTRICT 23 - TAHOE

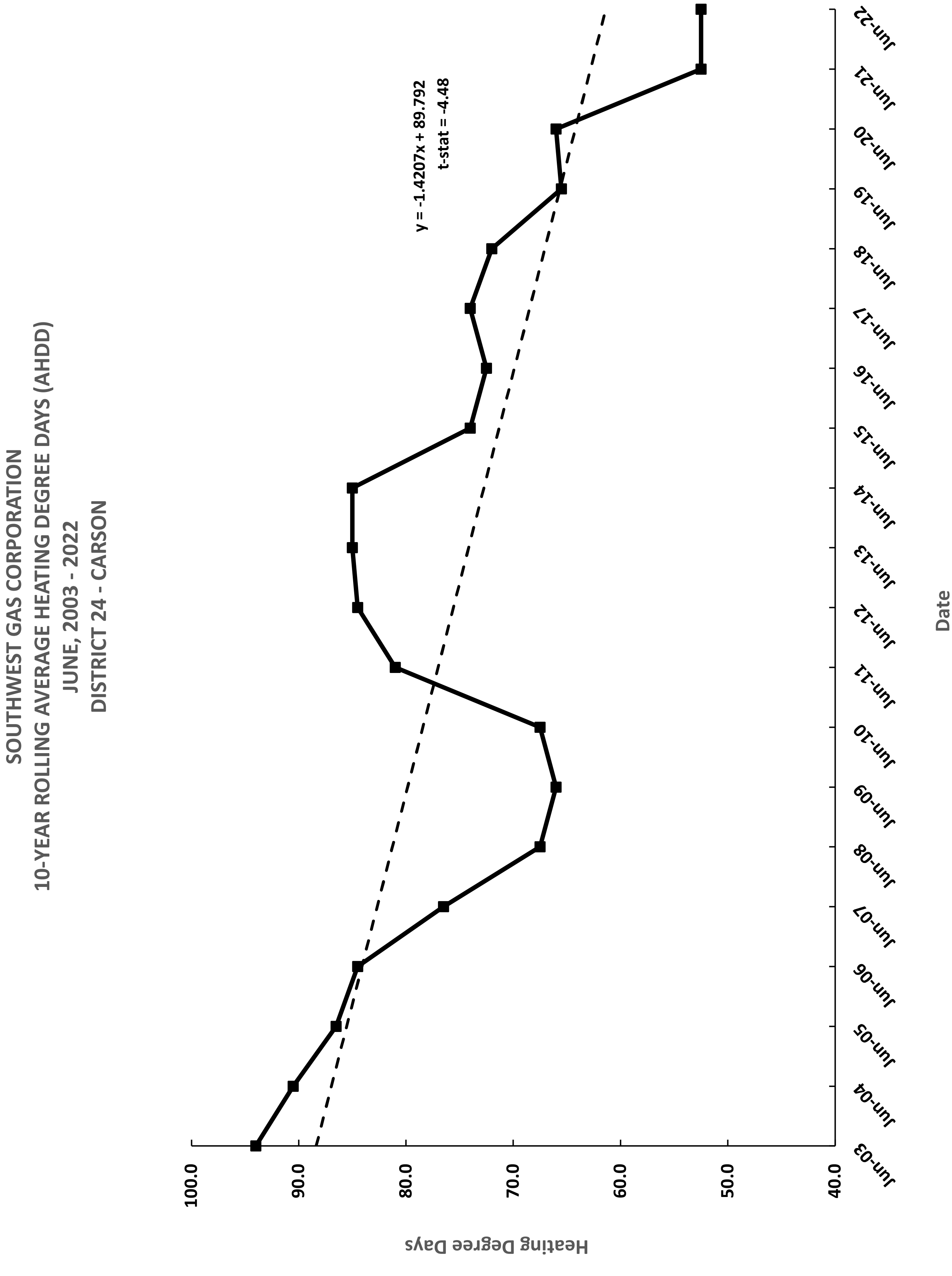



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
DISTRICT 24 - CARSON
y = -1.2316x + 787.23
t-stat = -2.52
Heating Degree Days
810.0
800.0
790.0
780.0
770.0
760.0
750.0
Date
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
Feb-13
Feb-14
Feb-15
Feb-16
Feb-17
Feb-18
Feb-19
Feb-20
Feb-21
Feb-22
Feb-23


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
DISTRICT 24 - CARSON
y = -1.0688x + 671.55
t-stat = -2.06
Heating Degree Days
700.0
690.0
680.0
670.0
660.0
650.0
640.0
630.0
Date
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Mar-21
Mar-22
Mar-23

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
DISTRICT 24 - CARSON




SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
DISTRICT 24 - CARSON
y = -1.4207x + 89.792
t-stat = -4.48
Heating Degree Days
100.0
90.0
80.0
70.0
60.0
50.0
40.0
Date
Jun-03
Jun-04
Jun-05
Jun-06
Jun-07
Jun-08
Jun-09
Jun-10
Jun-11
Jun-12
Jun-13
Jun-14
Jun-15
Jun-16
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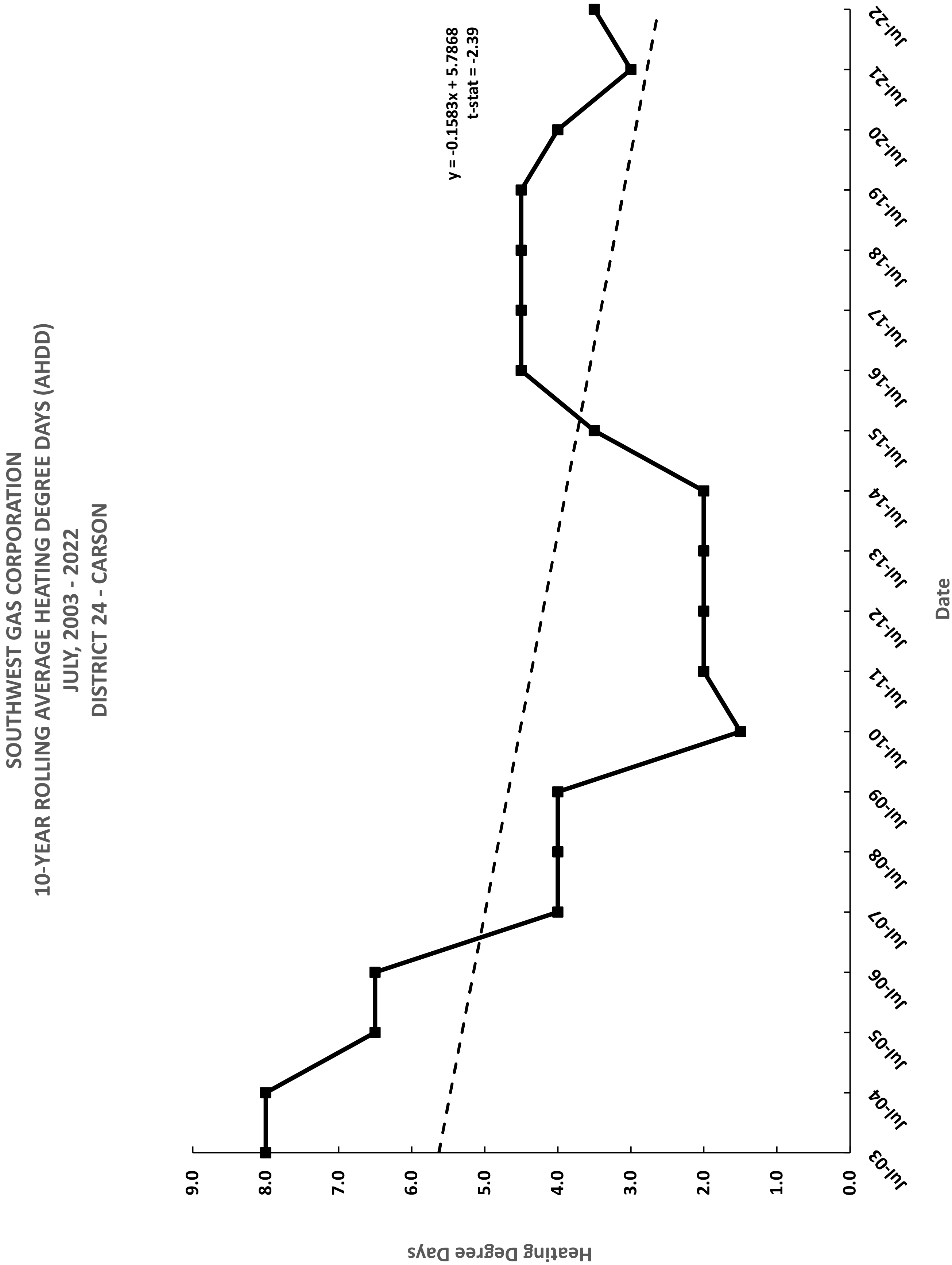
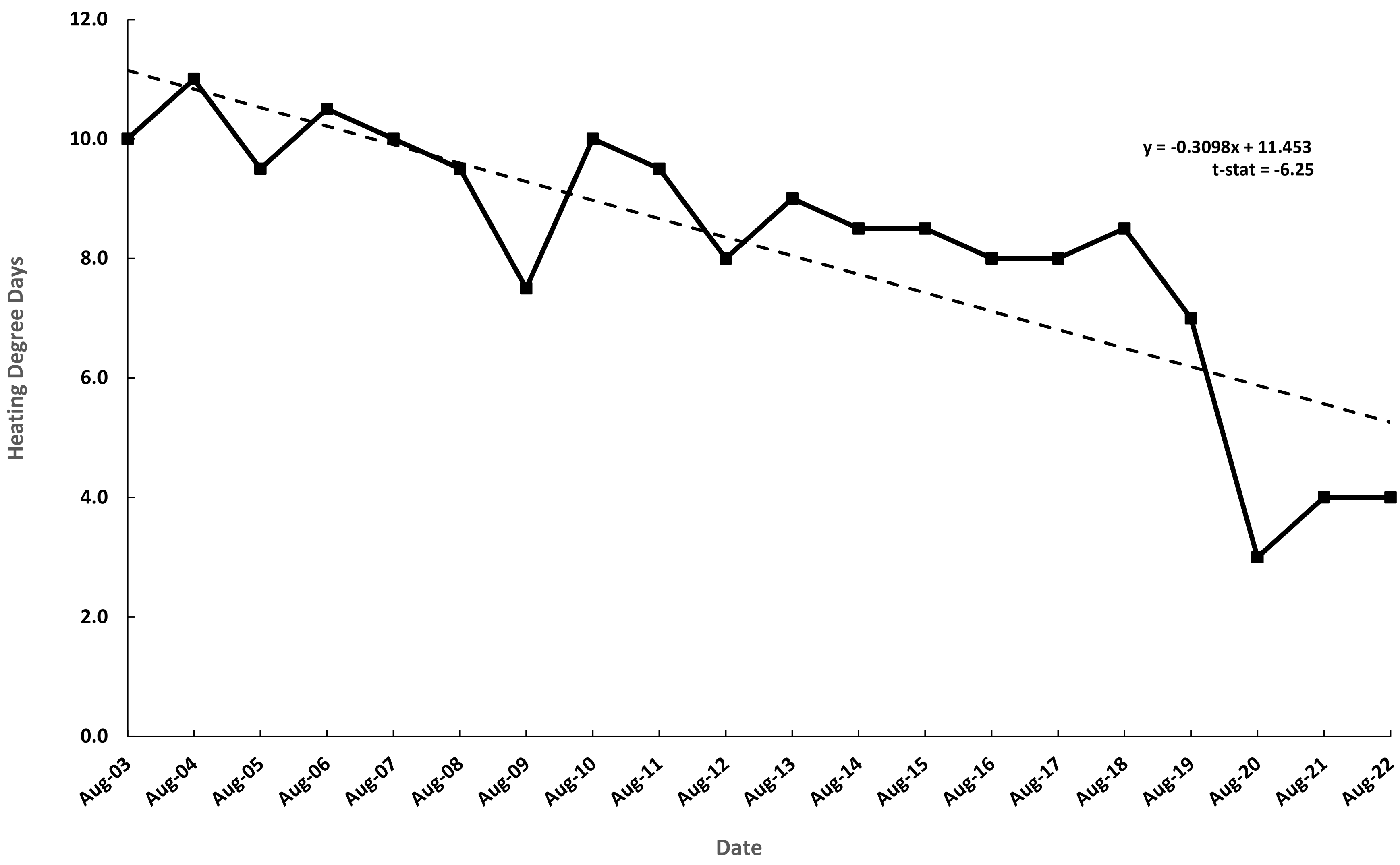
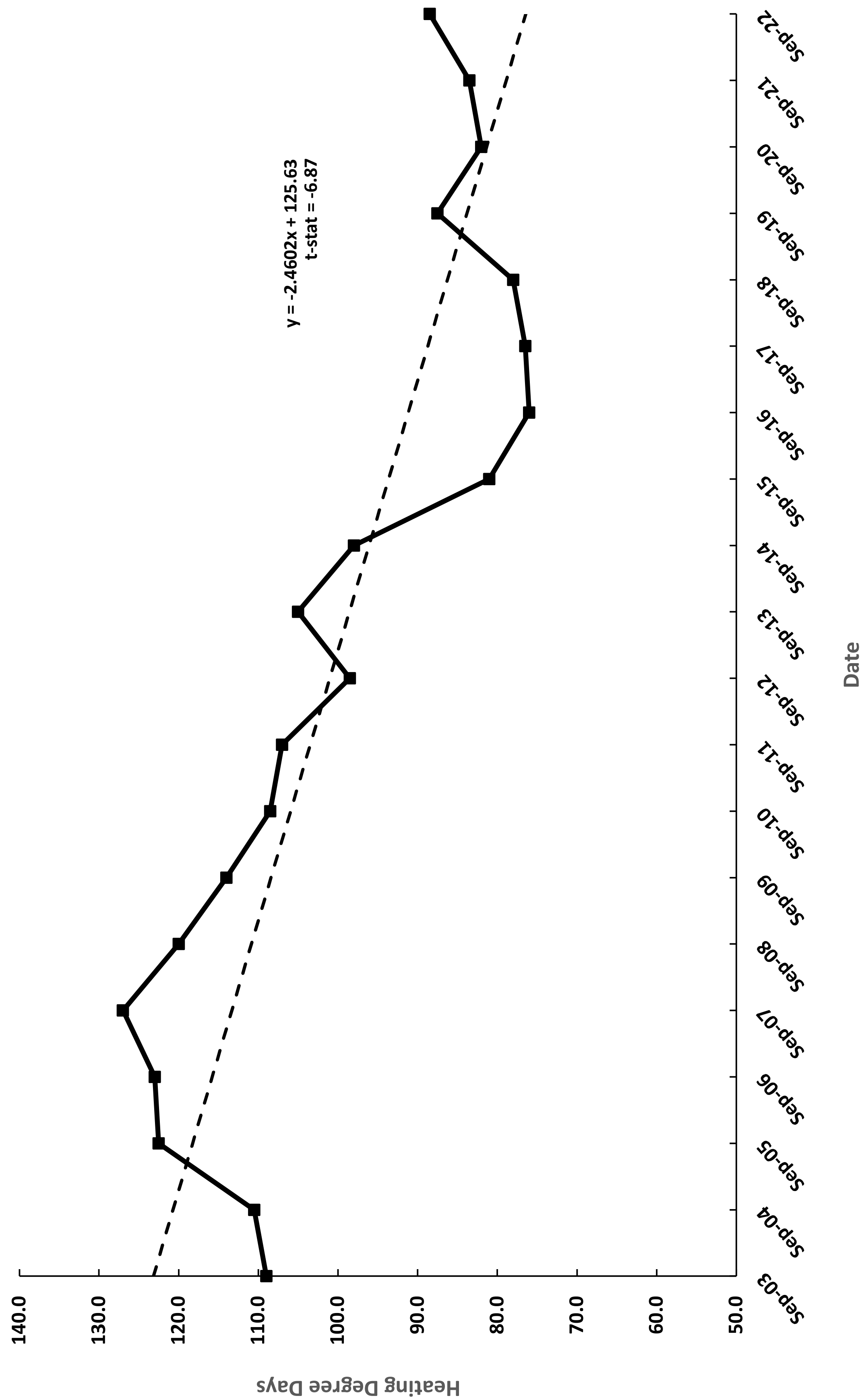
Jun-19
Jun-20
Jun-21
Jun-22


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
DISTRICT 24 - CARSON
y = -0.1583x + 5.7868
t-stat = -2.39
Heating Degree Days
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Jul-16
Jul-17
Jul-18
Jul-19
Jul-20
Jul-21
Jul-22
Date

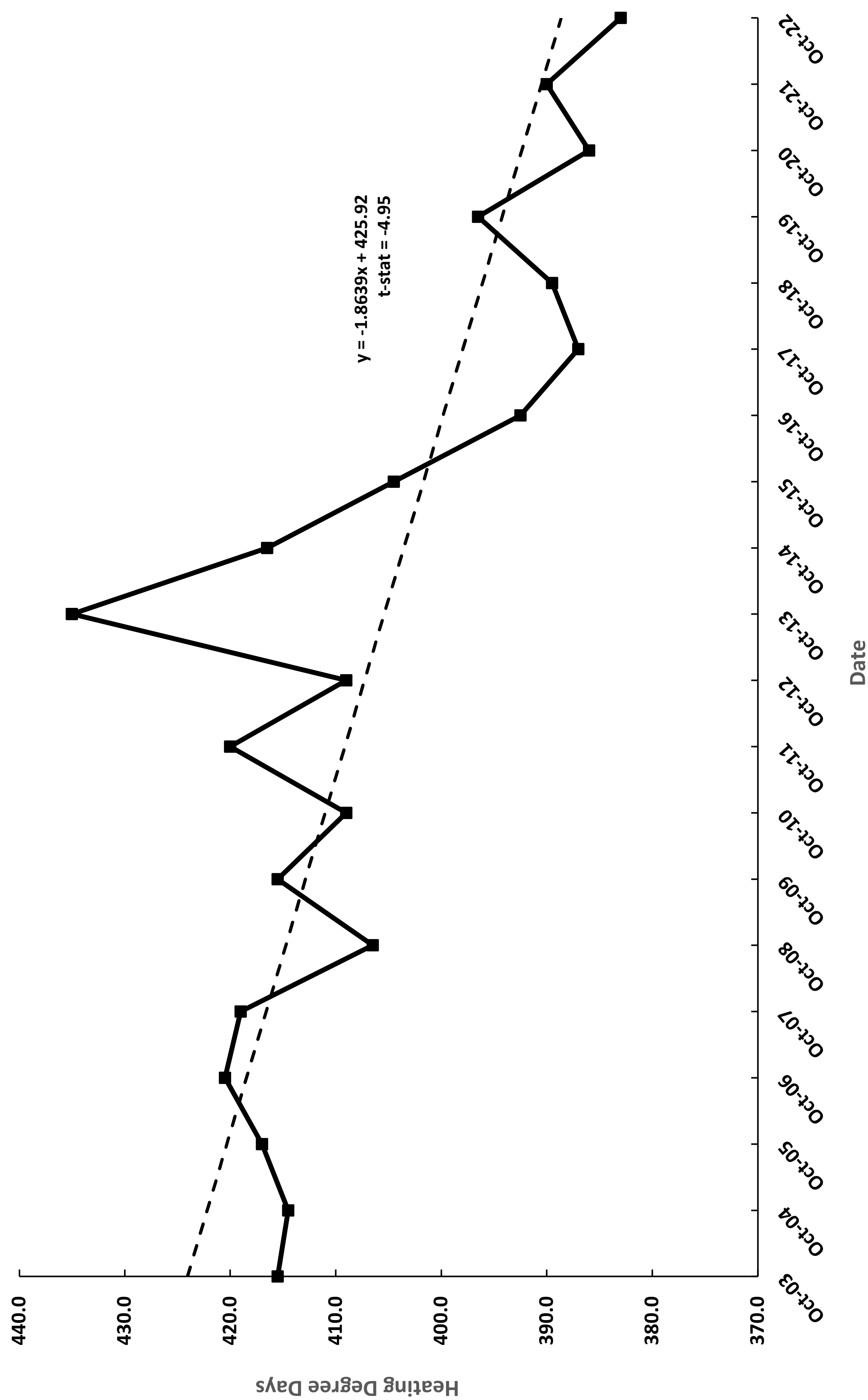
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
DISTRICT 24 - CARSON

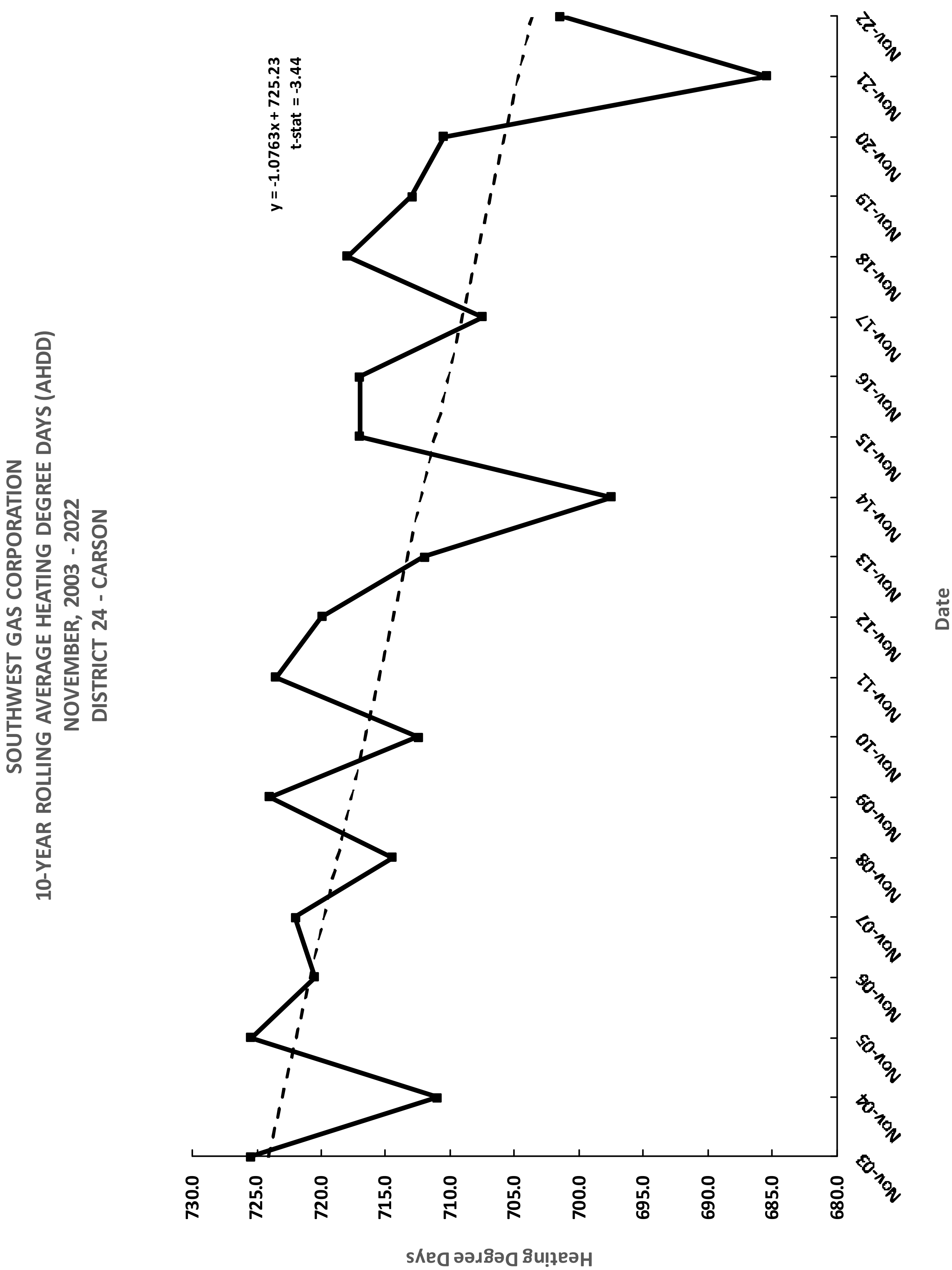


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
DISTRICT 24 - CARSON

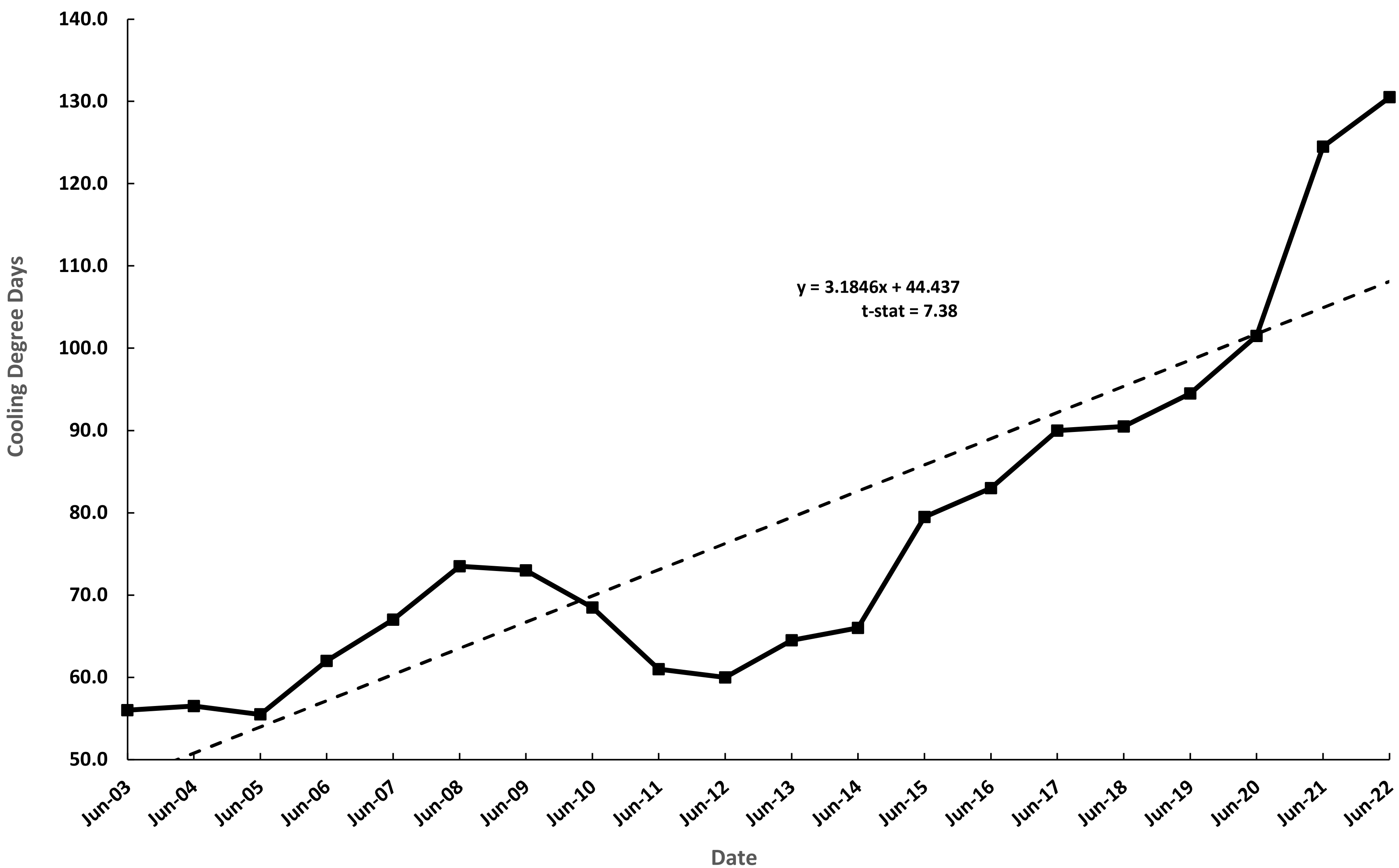


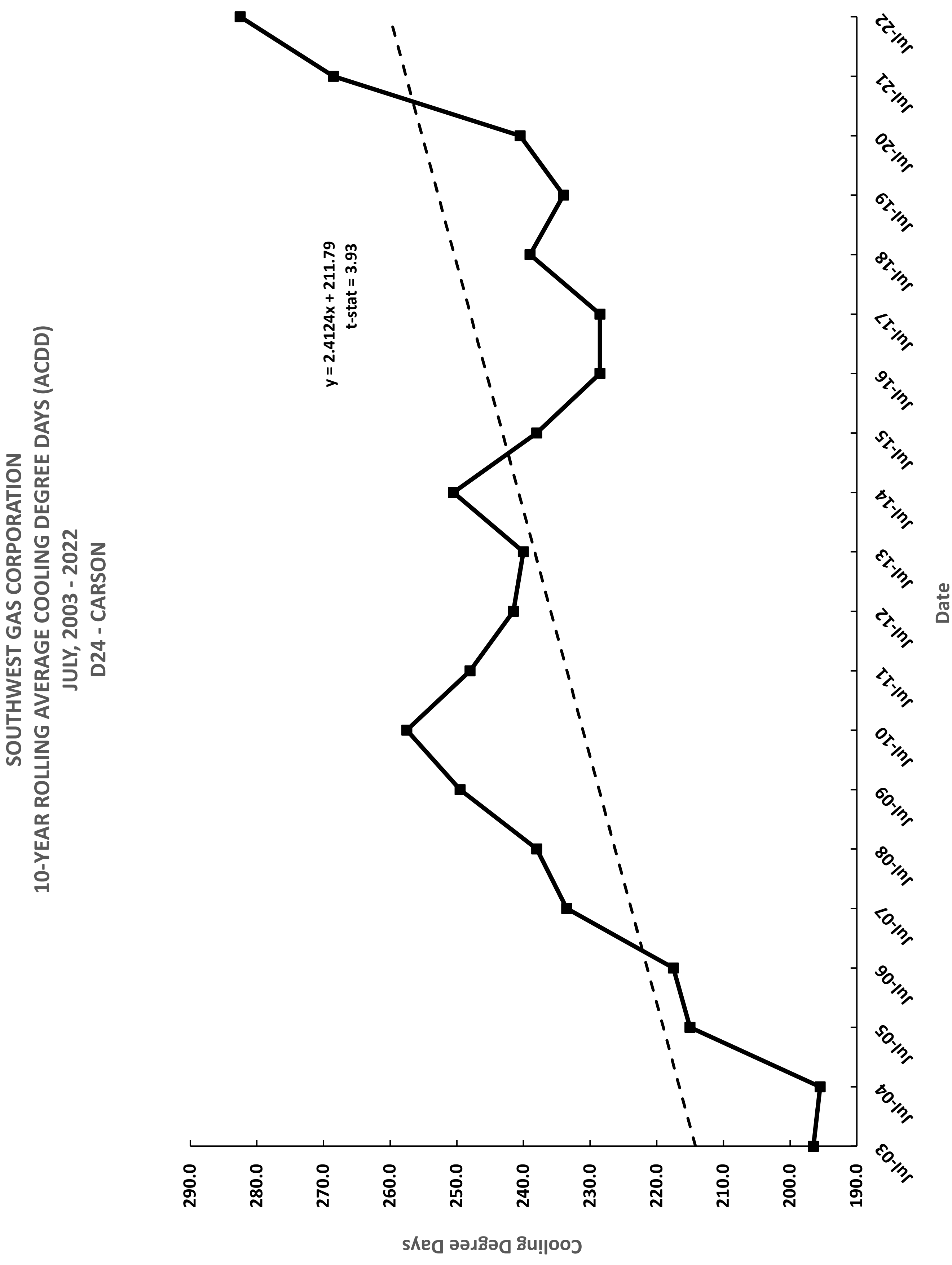
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
DISTRICT 24 - CARSON

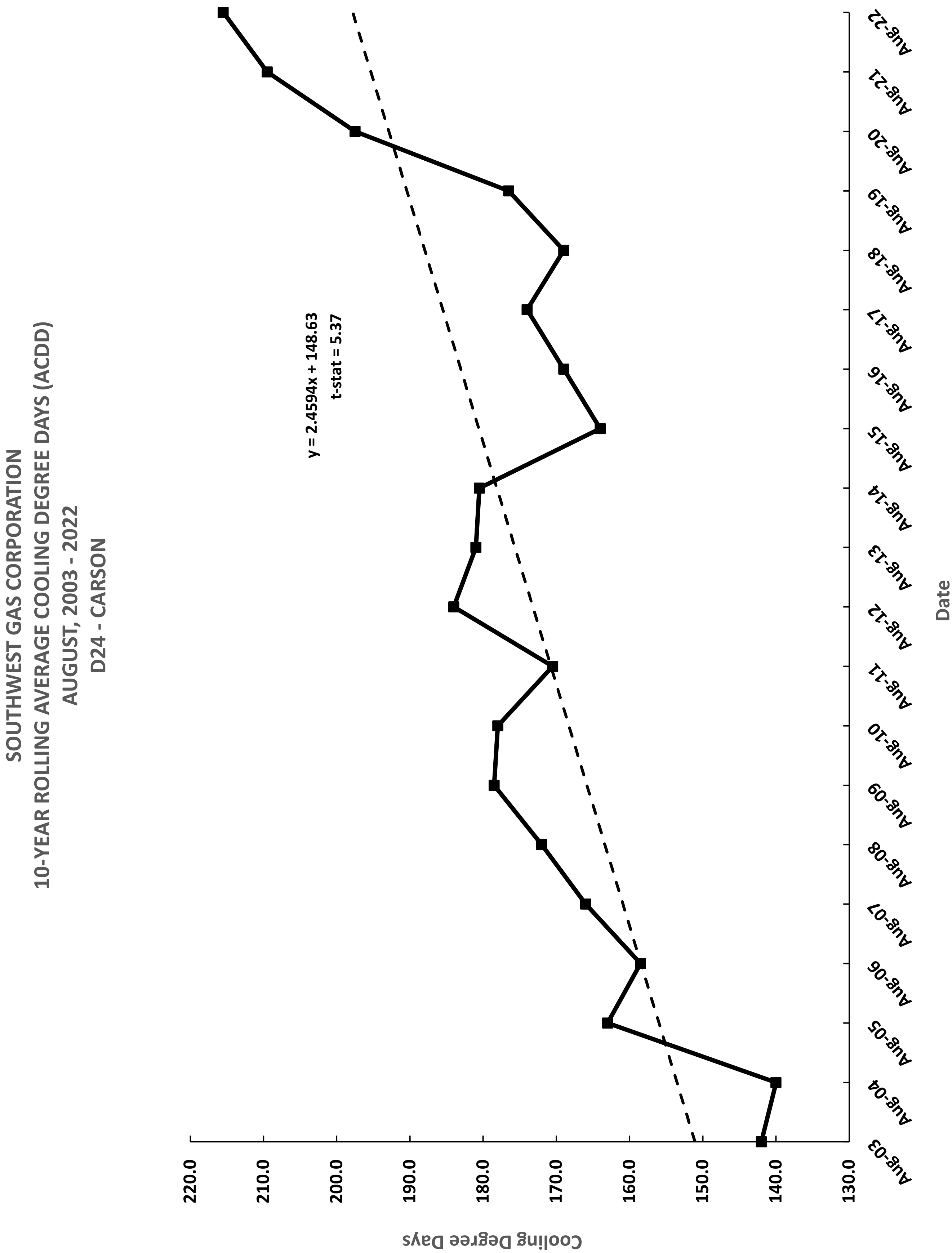



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
DISTRICT 24 - CARSON
y = -1.0763x + 725.23
t-stat = -3.44
Heating Degree Days
730.0
725.0
720.0
715.0
710.0
705.0
700.0
695.0
690.0
685.0
680.0
Date
Nov-03
Nov-04
Nov-05
Nov-06
Nov-07
Nov-08
Nov-09
Nov-10
Nov-11
Nov-12
Nov-13
Nov-14
Nov-15
Nov-16
Nov-17
Nov-18
Nov-19
Nov-20
Nov-21
Nov-22

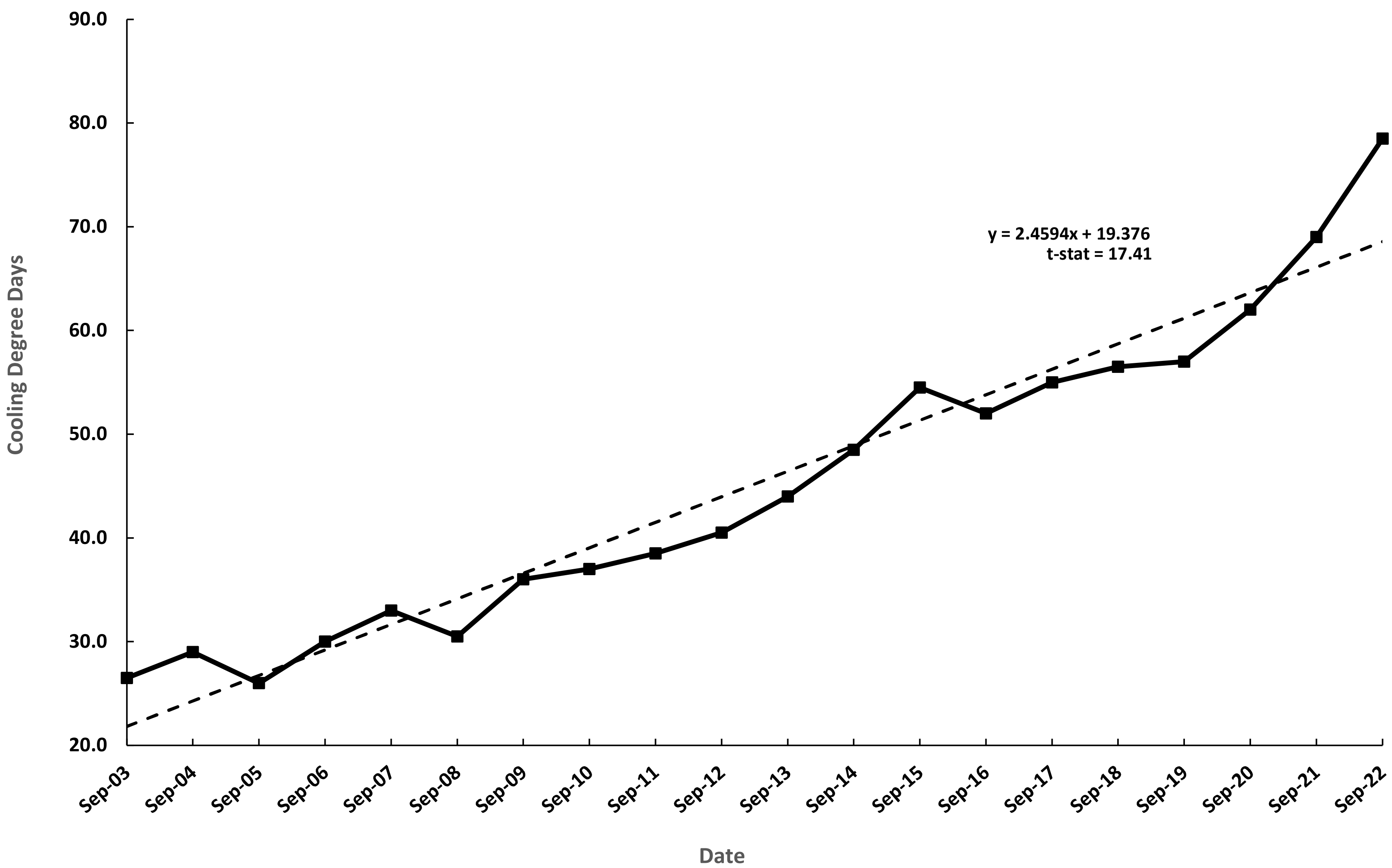
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JUNE, 2003 - 2022
D24 - CARSON



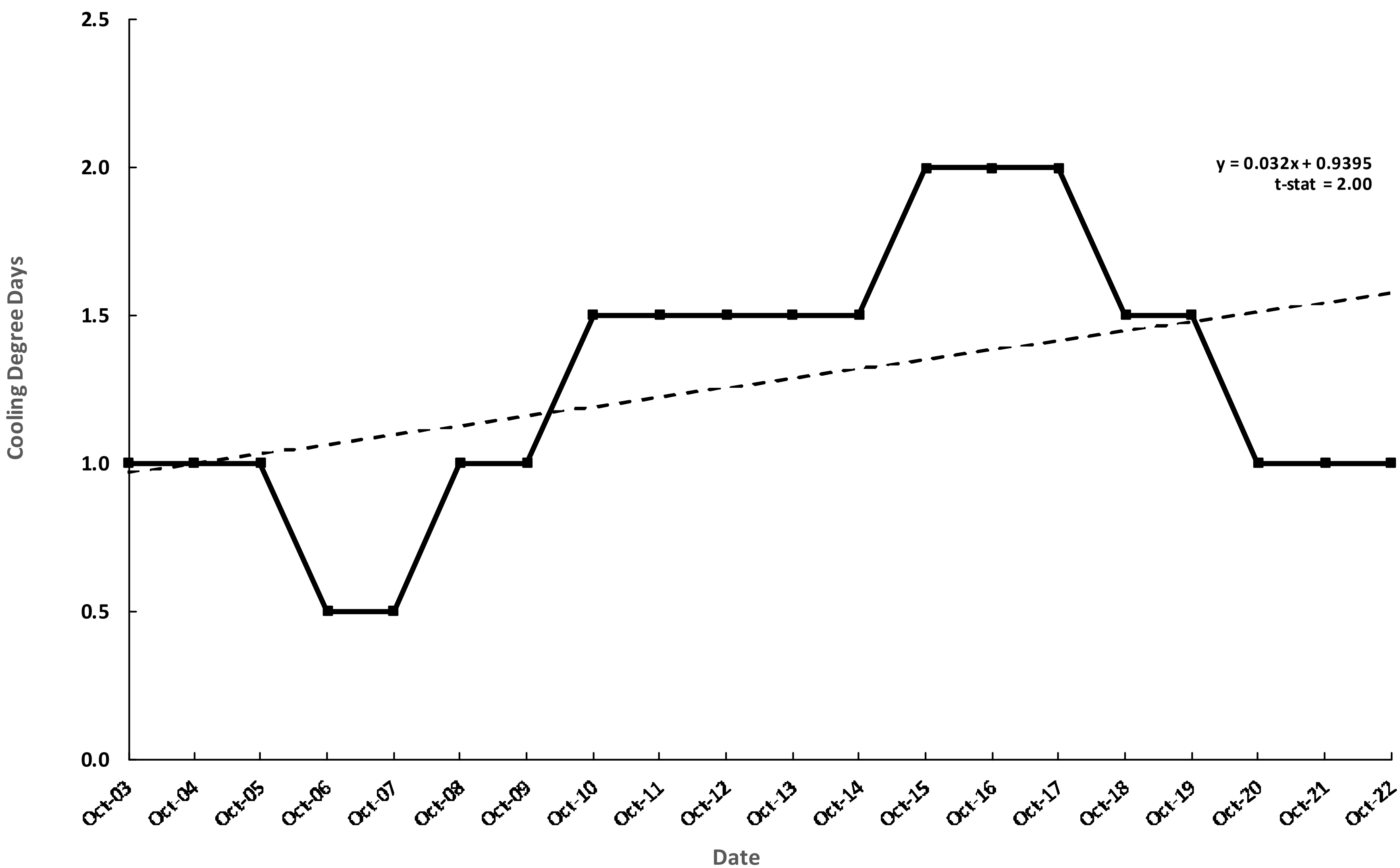

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JULY, 2003 - 2022
D24 - CARSON
y = 2.4124x + 211.79
t-stat = 3.93
Cooling Degree Days
290.0
280.0
270.0
260.0
250.0
240.0
230.0
220.0
210.0
200.0
190.0
Date
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Jul-16
Jul-17
Jul-18
Jul-19
Jul-20
Jul-21
Jul-22


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
AUGUST, 2003 - 2022
D24 - CARSON
y = 2.4594x + 148.63
t-stat = 5.37
Cooling Degree Days
220.0
210.0
200.0
190.0
180.0
170.0
160.0
150.0
140.0
130.0
Aug-03
Aug-04
Aug-05
Aug-06
Aug-07
Aug-08
Aug-09
Aug-10
Aug-11
Aug-12
Aug-13
Aug-14
Aug-15
Aug-16
Aug-17
Aug-18
Aug-19
Aug-20
Aug-21
Aug-22
Date

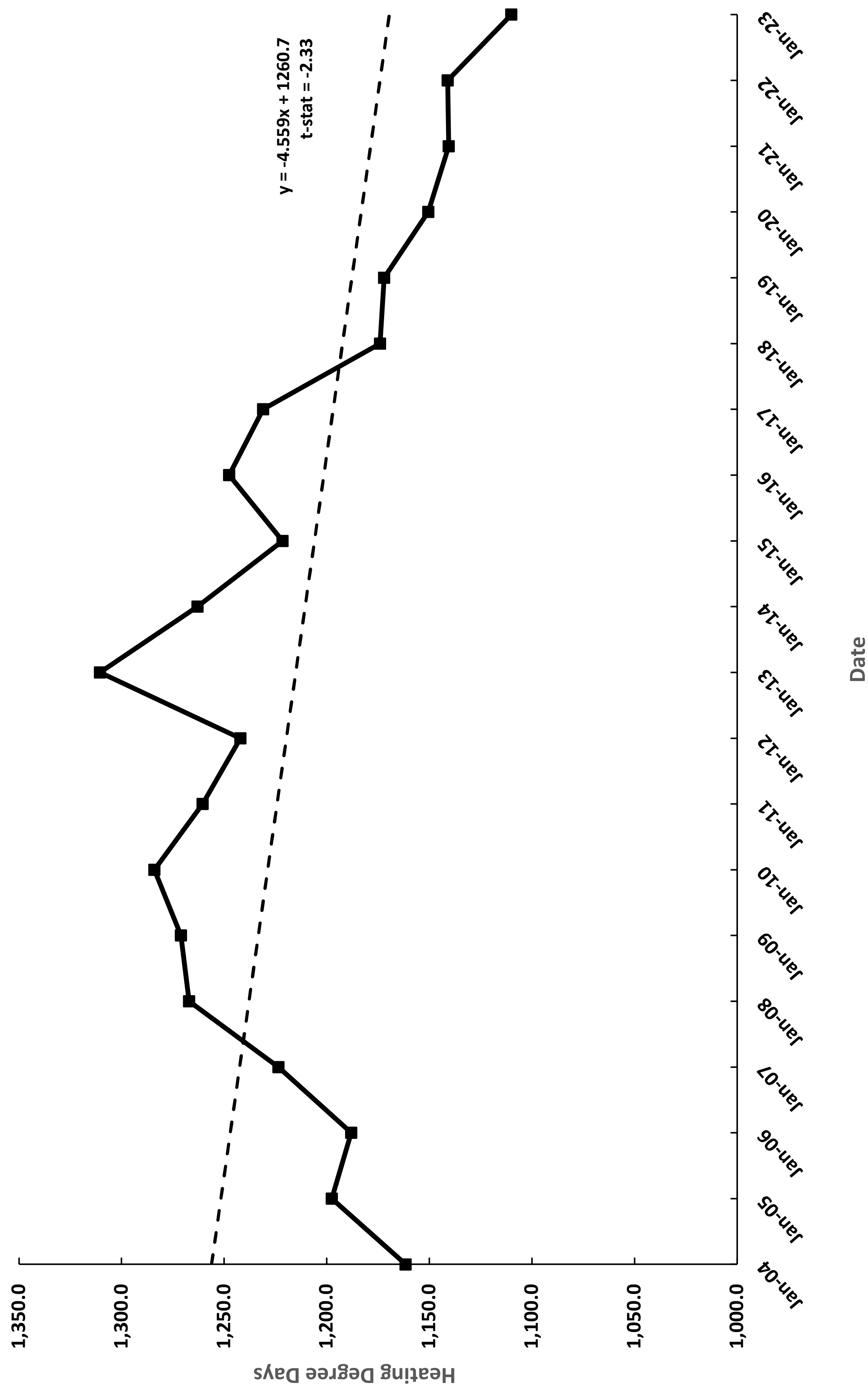
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
SEPTEMBER, 2003 - 2022
D24 - CARSON

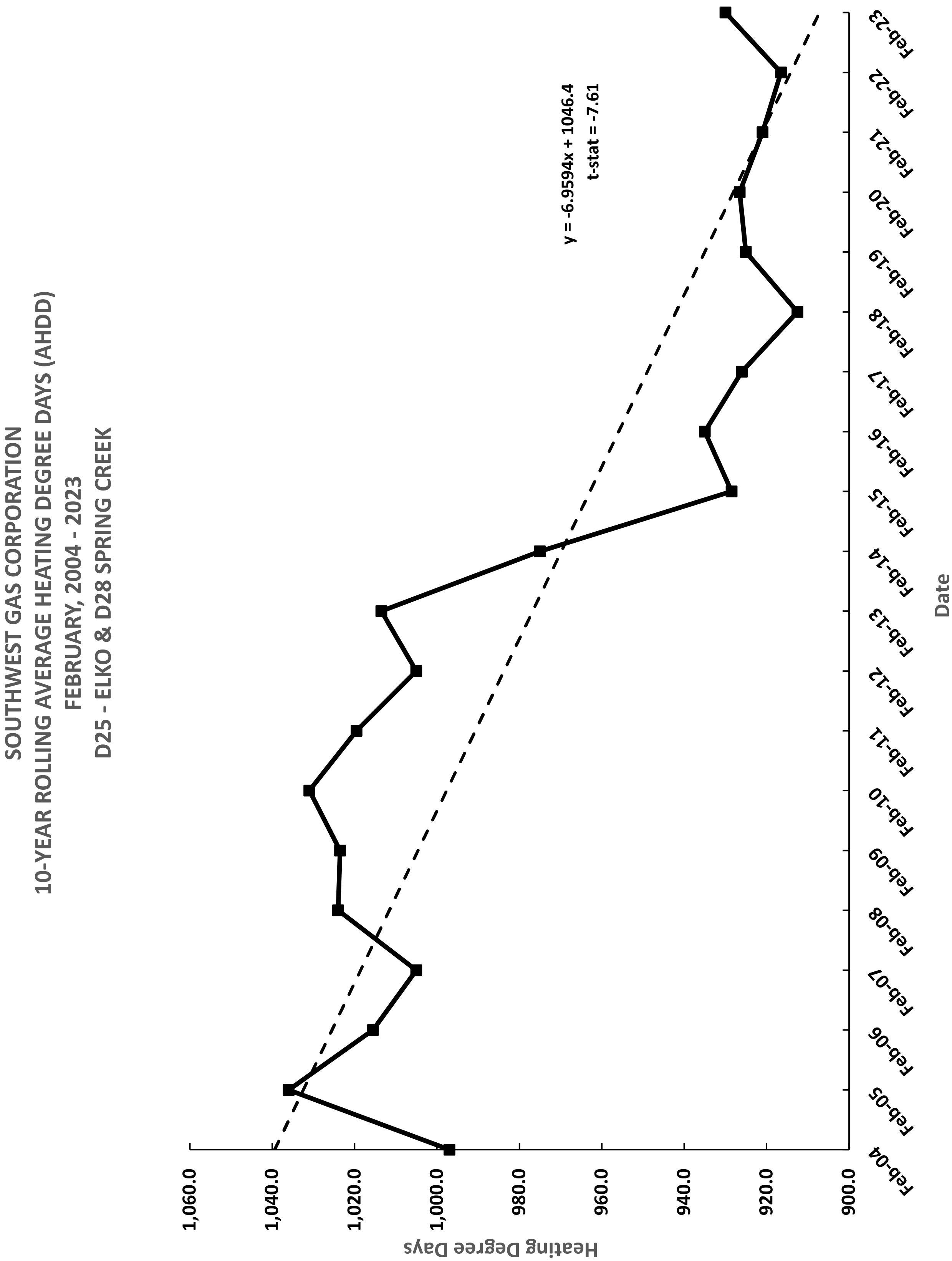


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
OCTOBER, 2003 - 2022
D24 - CARSON

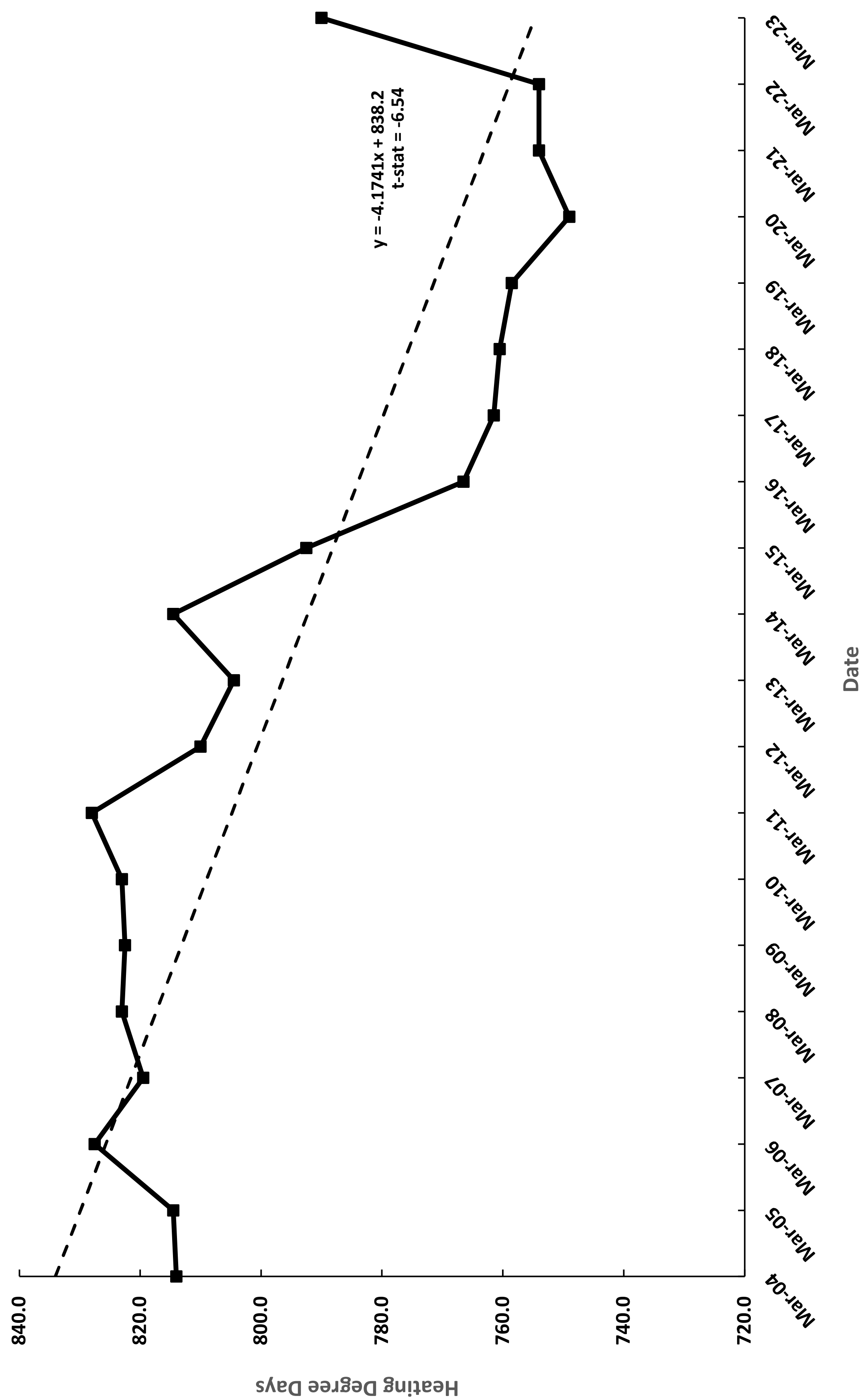


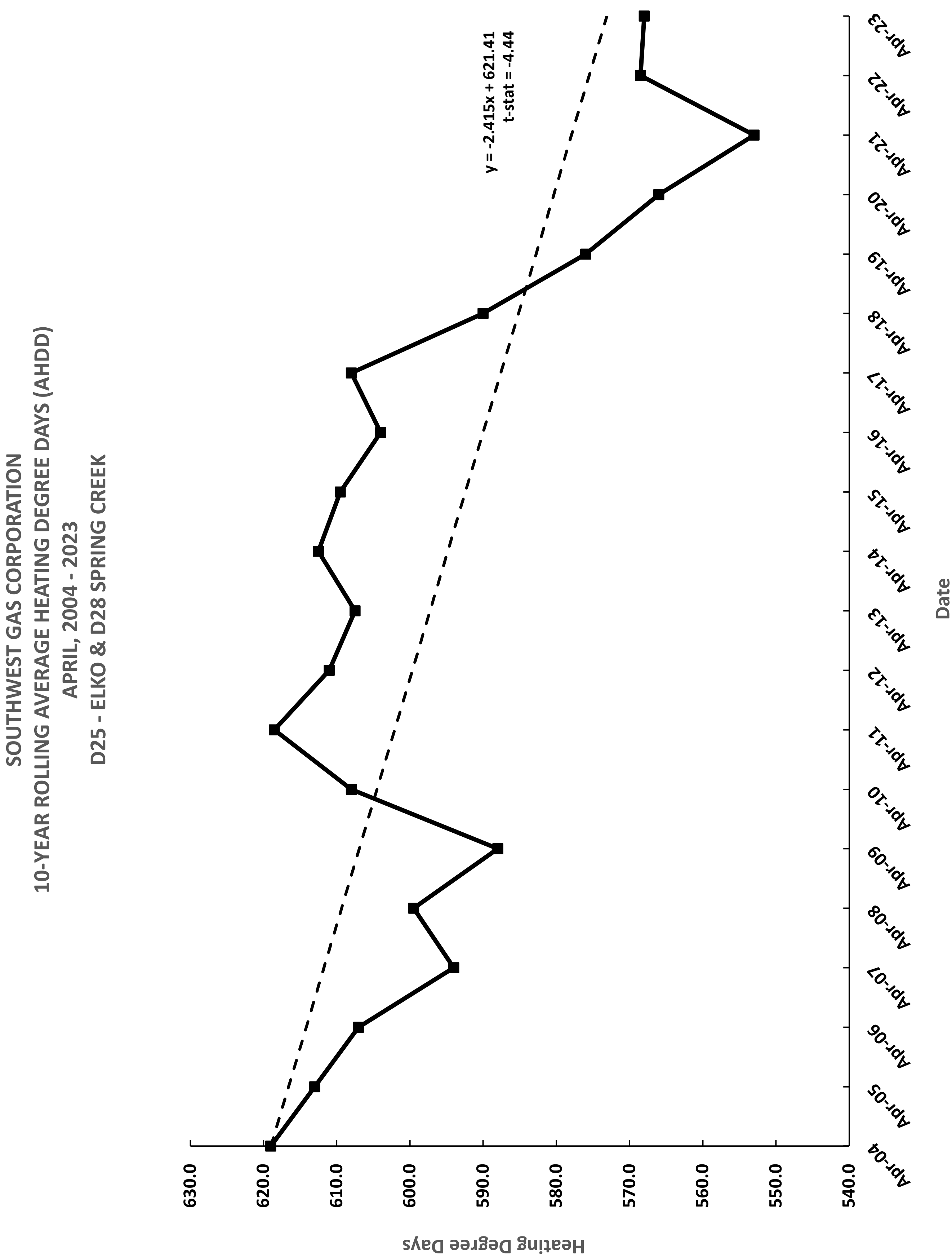
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JANUARY, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK



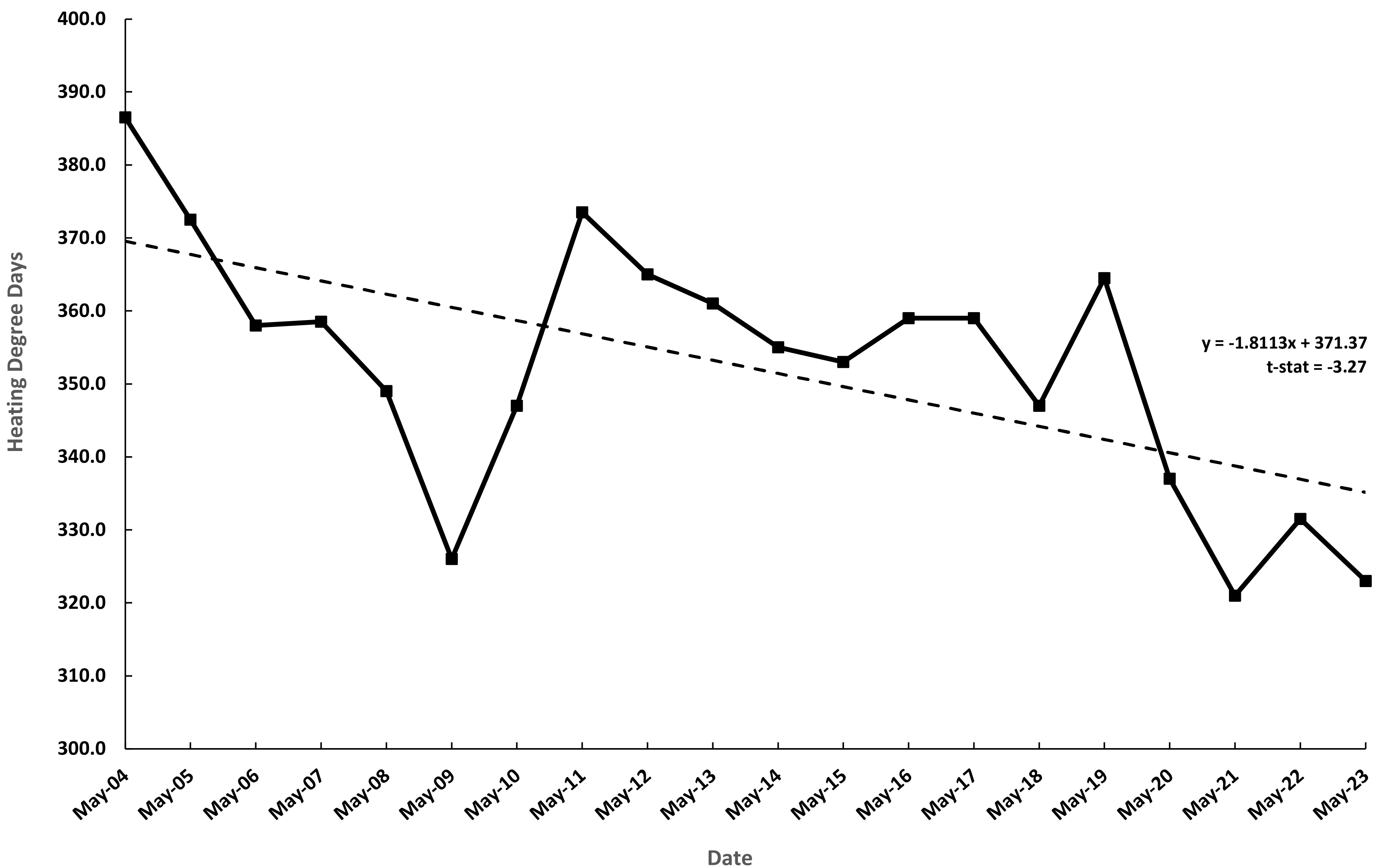

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK
y = -6.9594x + 1046.4
t-stat = -7.61
Heating Degree Days
1,060.0
1,040.0
1,020.0
1,000.0
980.0
960.0
940.0
920.0
900.0
Date
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
Feb-13
Feb-14
Feb-15
Feb-16
Feb-17
Feb-18
Feb-19
Feb-20
Feb-21
Feb-22
Feb-23

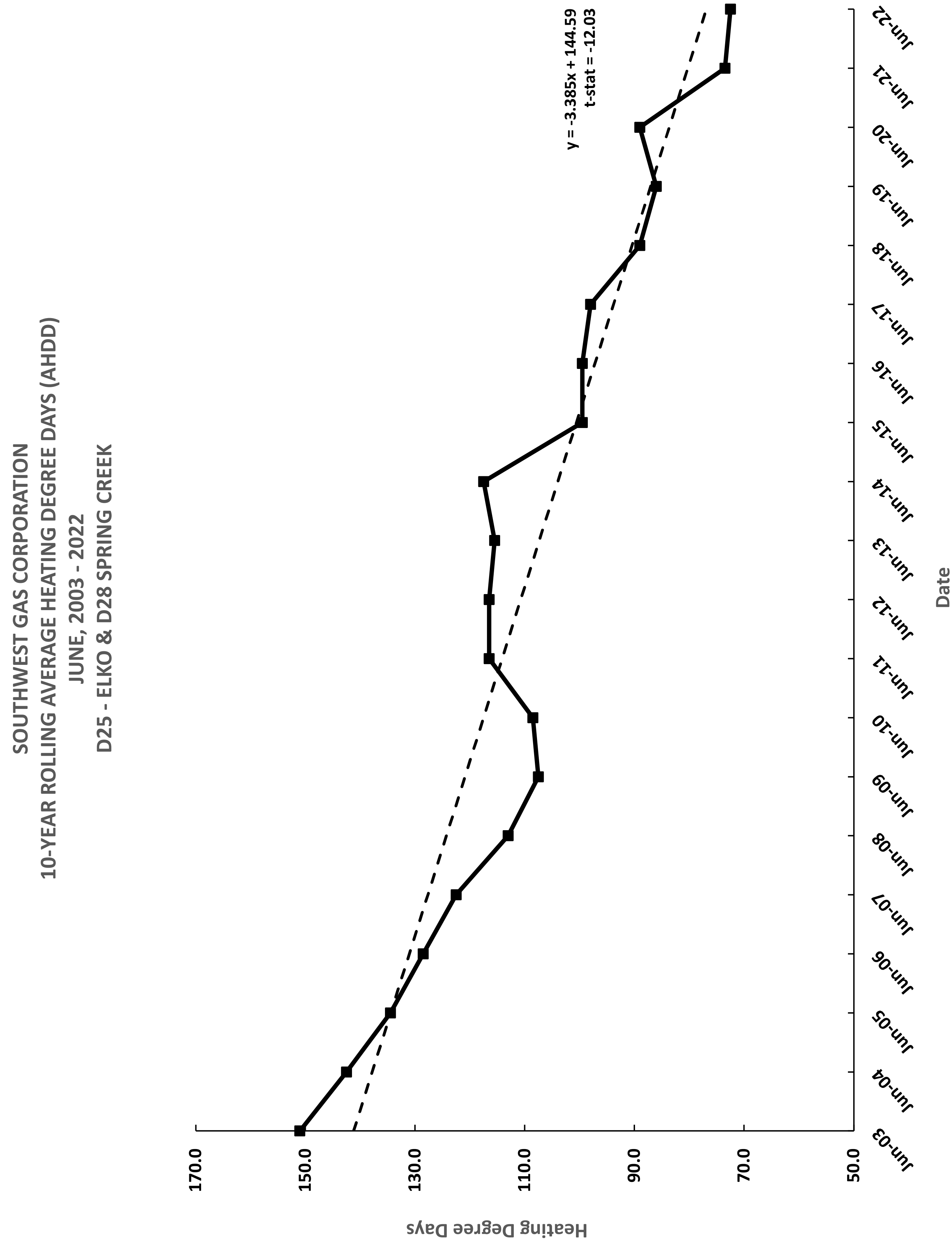
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK



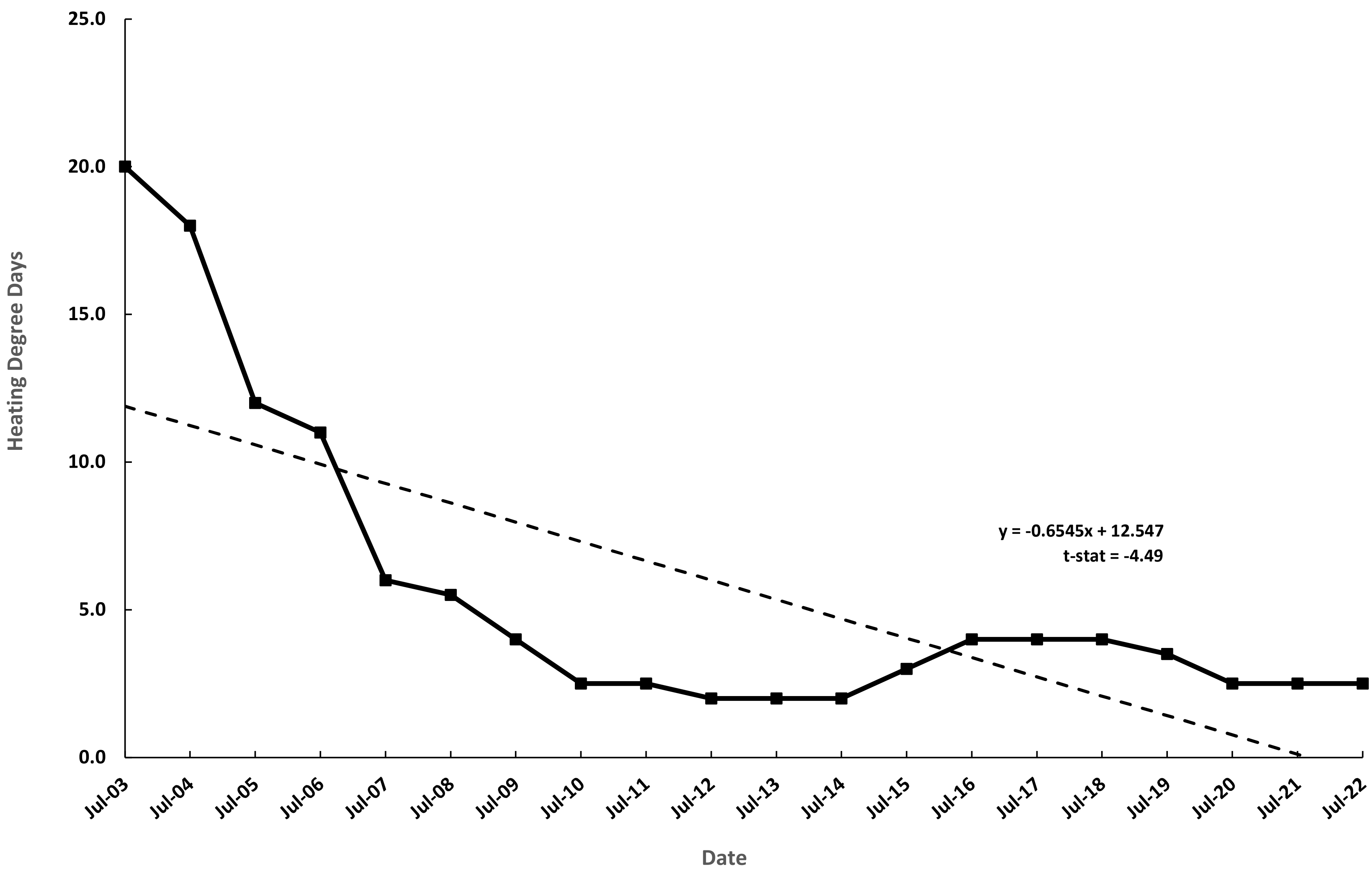

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK
y = -2.415x + 621.41
t-stat = -4.44
Heating Degree Days
630.0
620.0
610.0
600.0
590.0
580.0
570.0
560.0
550.0
540.0
Date
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MAY, 2004 - 2023
D25 - ELKO & D28 SPRING CREEK

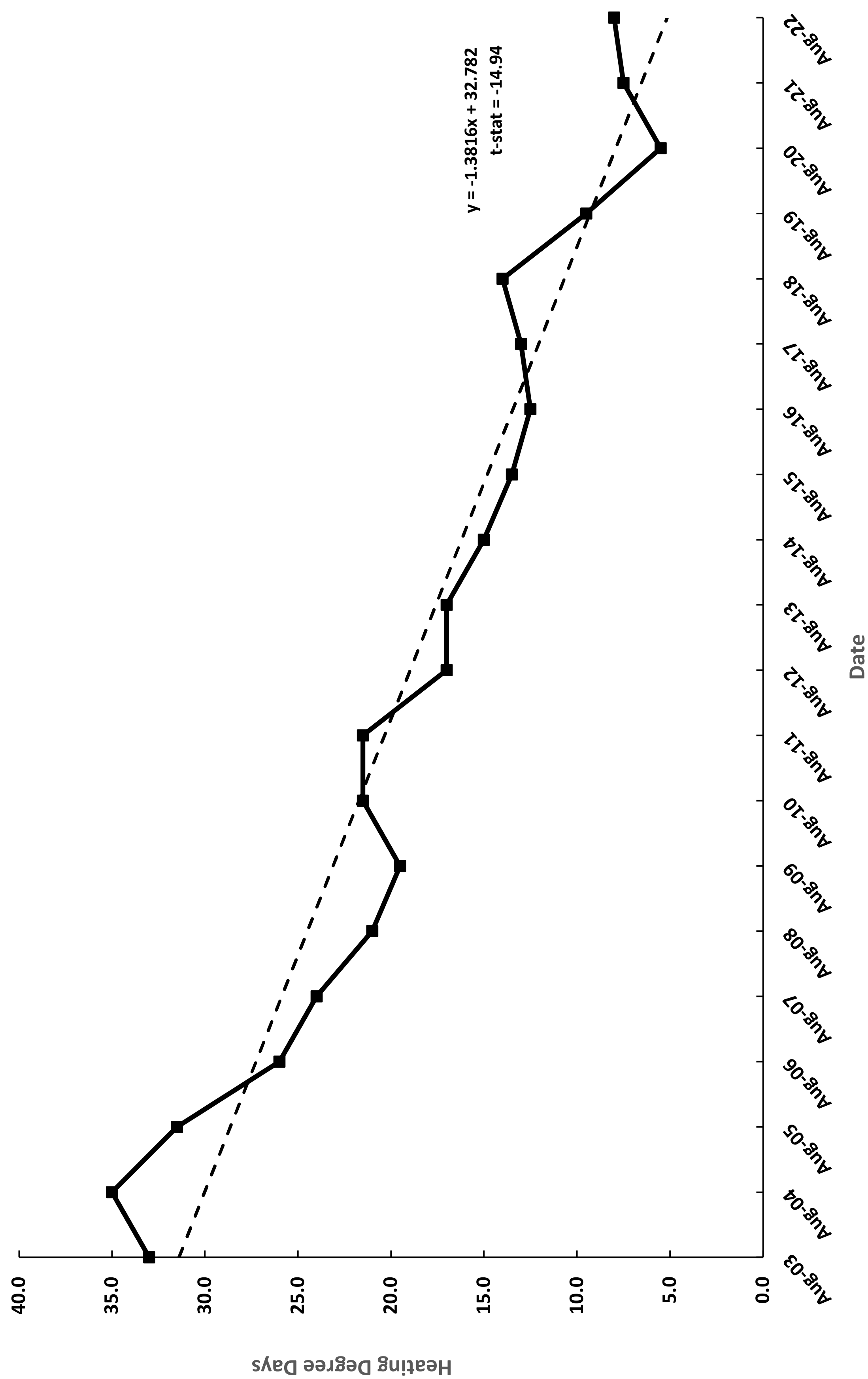



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK
y = -3.385x + 144.59
t-stat = -12.03
Heating Degree Days
170.0
150.0
130.0
110.0
90.0
70.0
50.0
Date
Jun-03
Jun-04
Jun-05
Jun-06
Jun-07
Jun-08
Jun-09
Jun-10
Jun-11
Jun-12
Jun-13
Jun-14
Jun-15
Jun-16
Jun-17
Jun-18
Jun-19
Jun-20
Jun-21
Jun-22

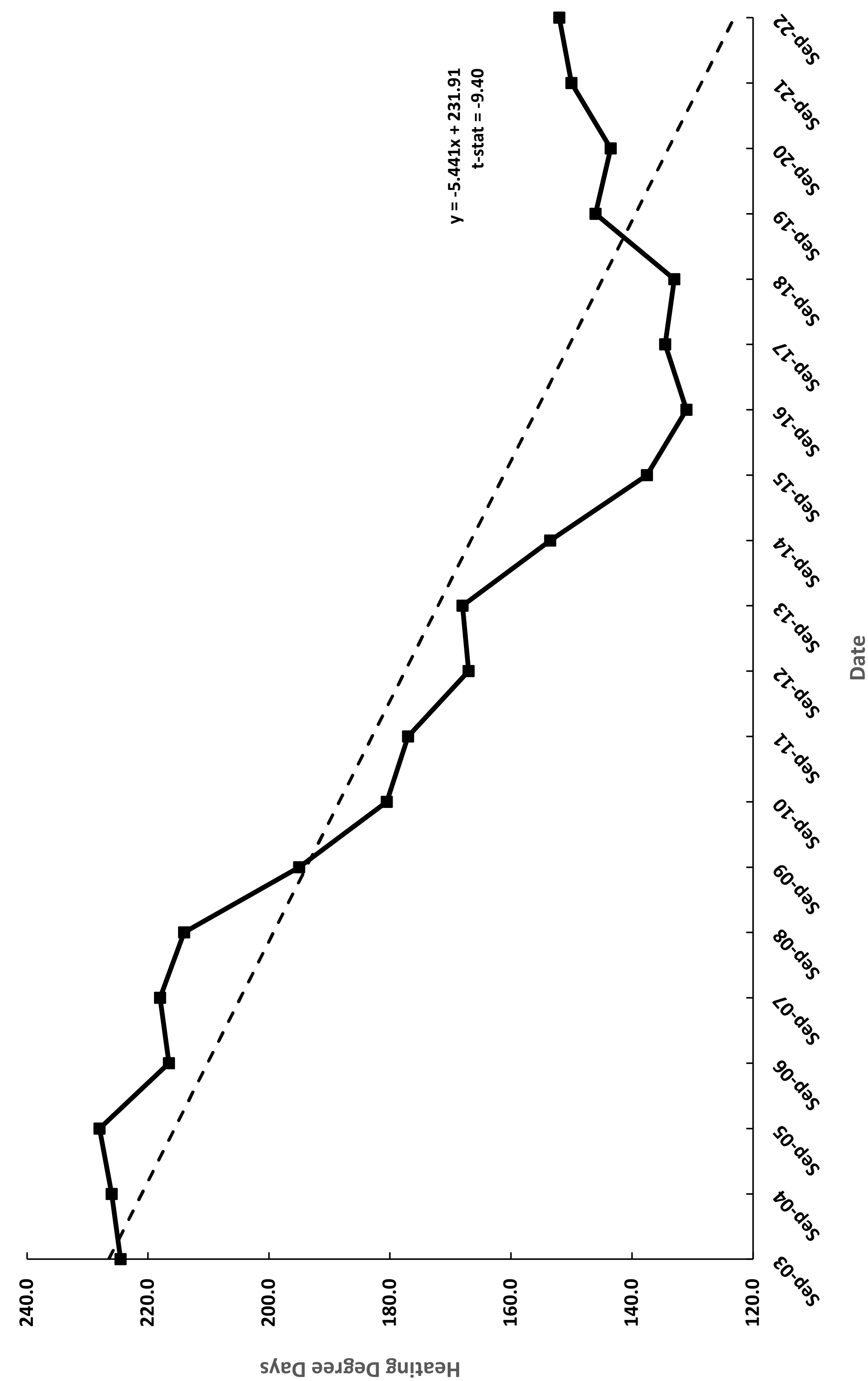
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK



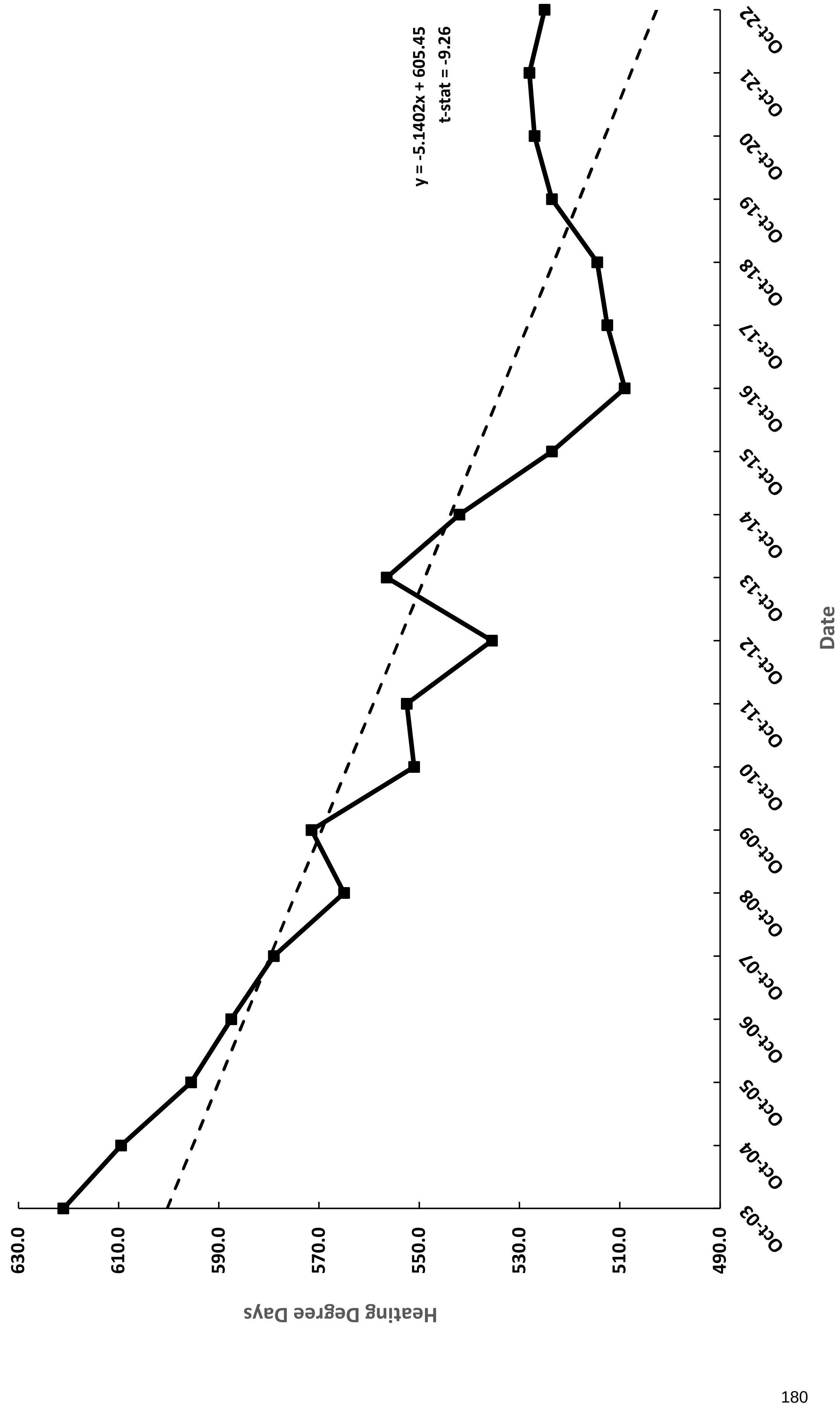
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK



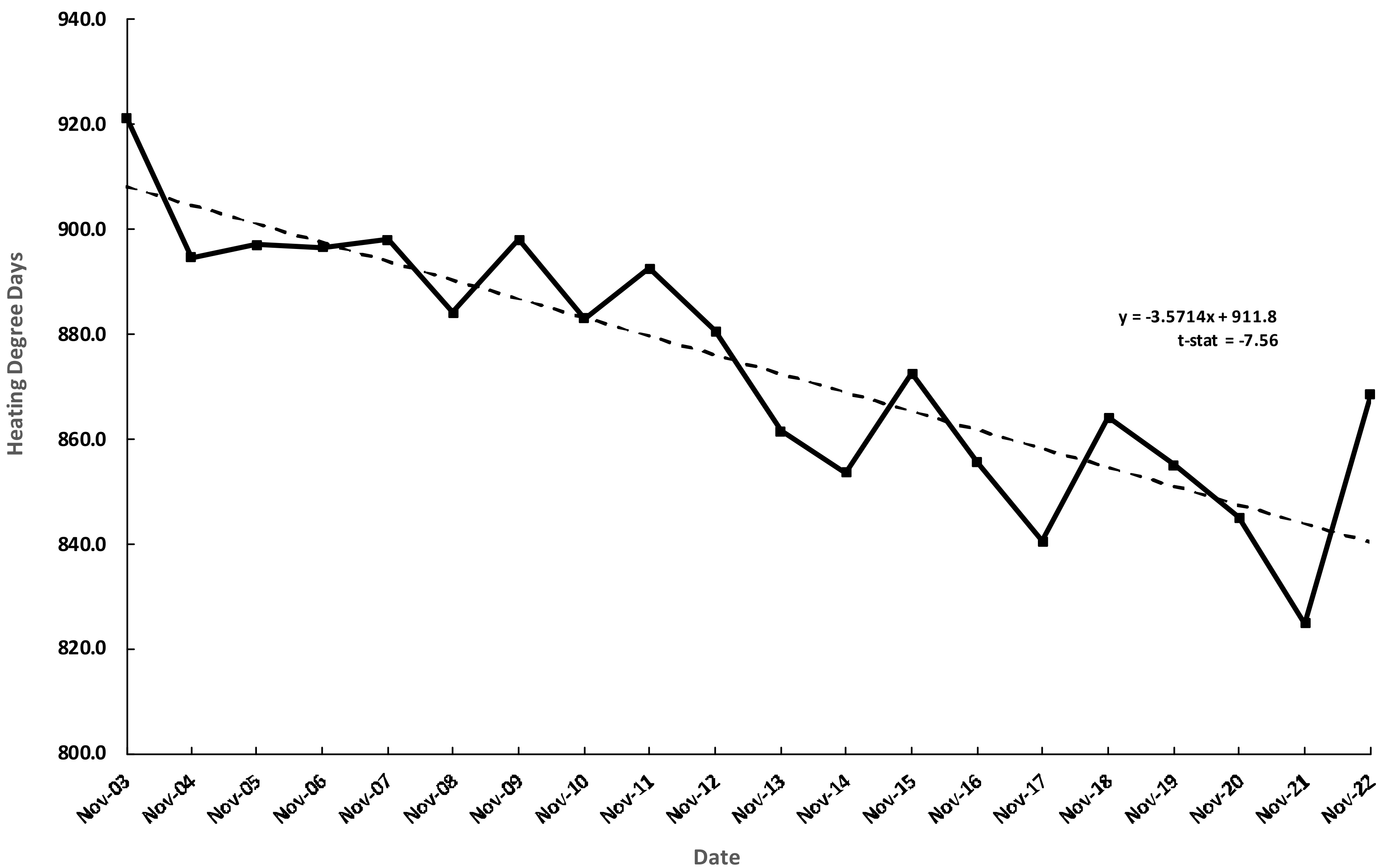
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK



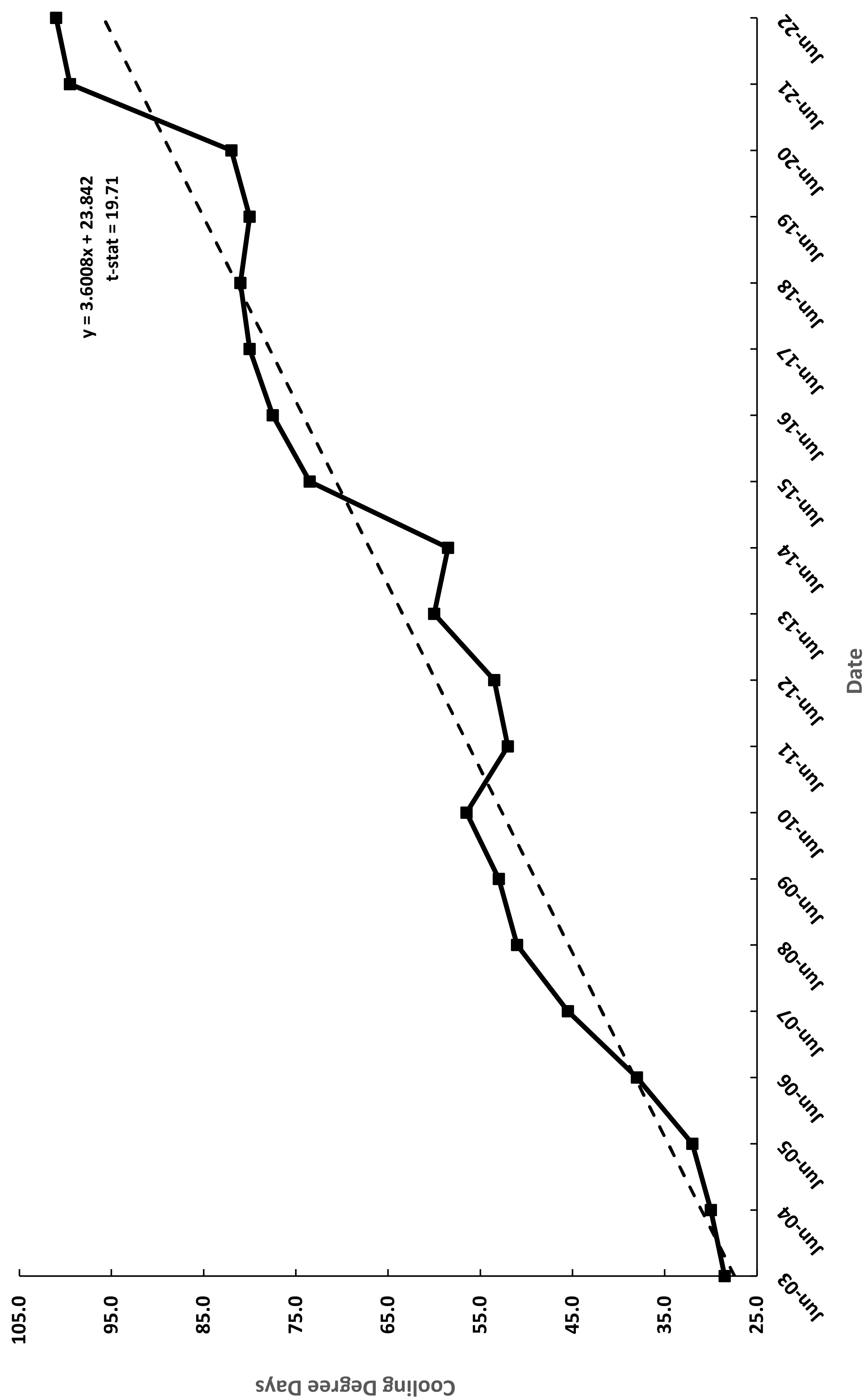
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK



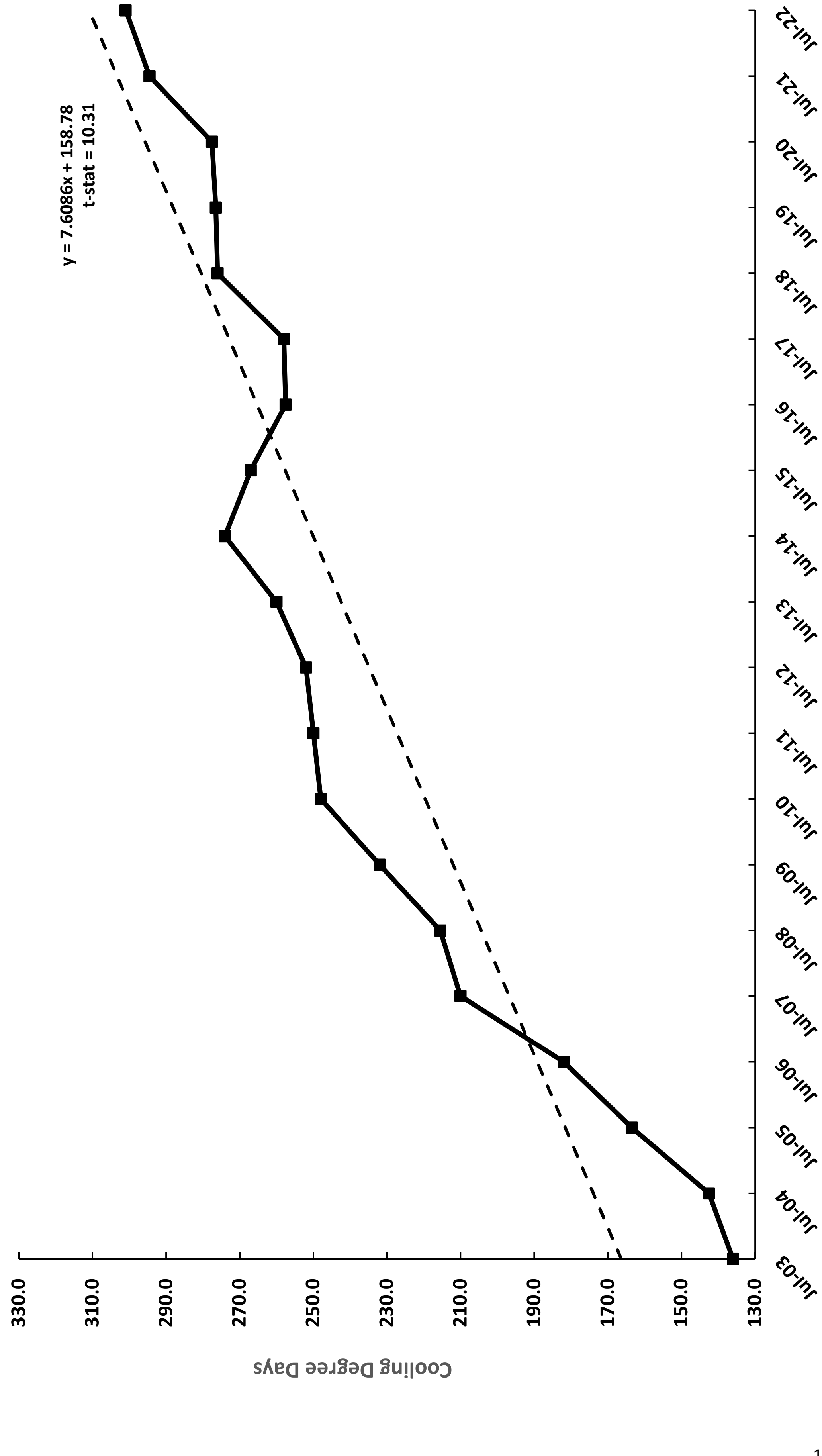
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
D25 - ELKO & D28 SPRING CREEK



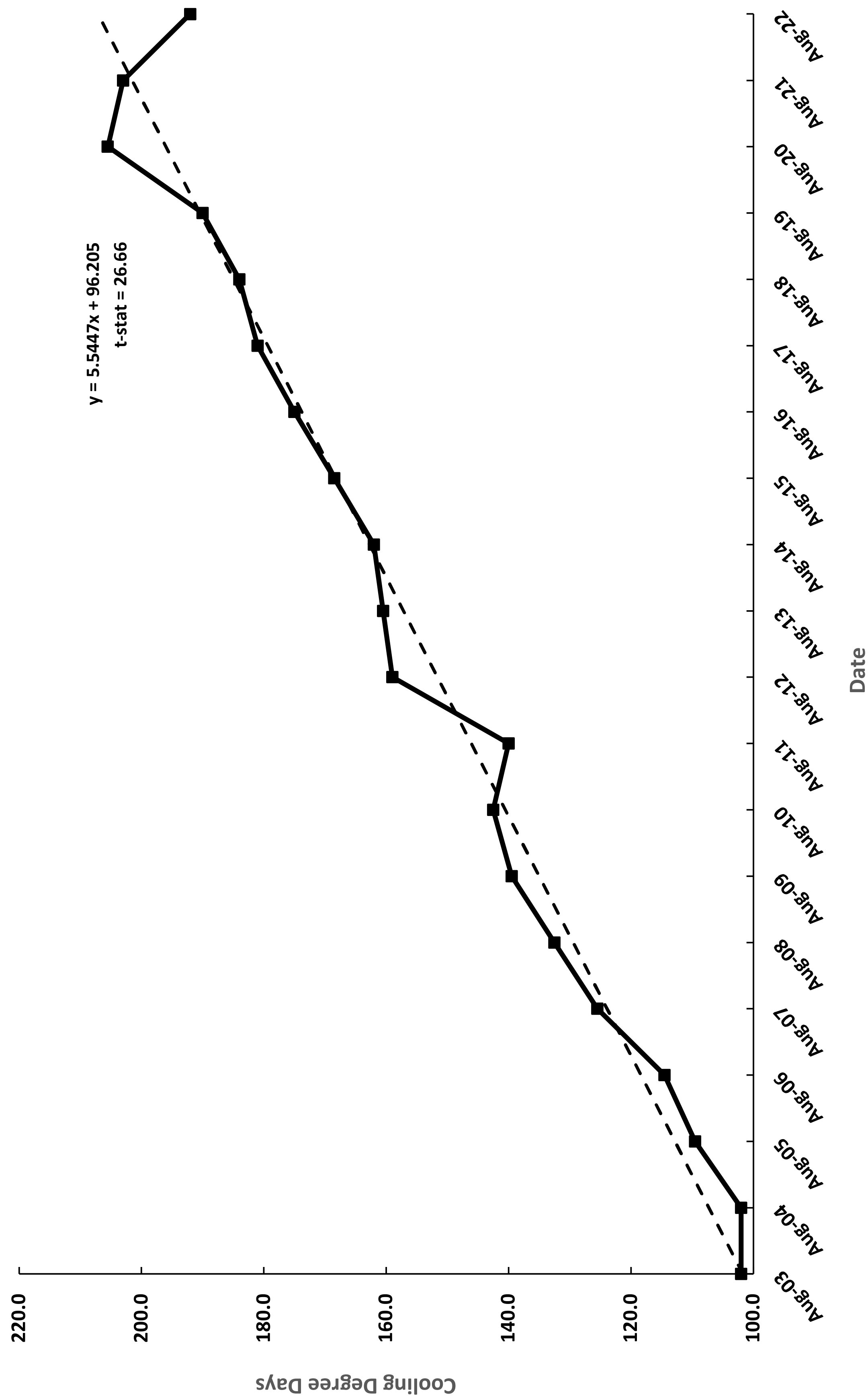
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JUNE, 2003 - 2022
D25 - ELKO



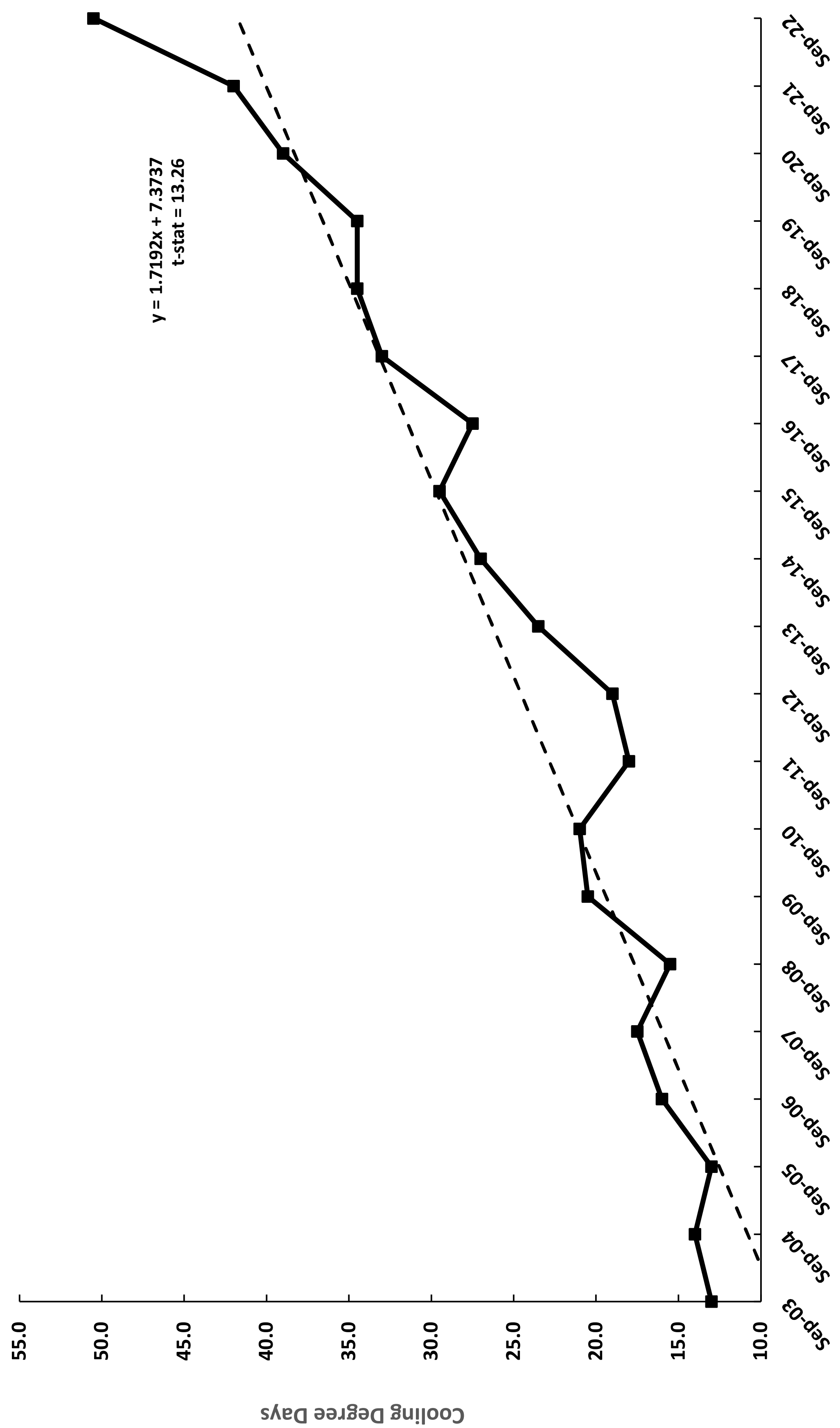
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
JULY, 2003 - 2022
D25 - ELKO

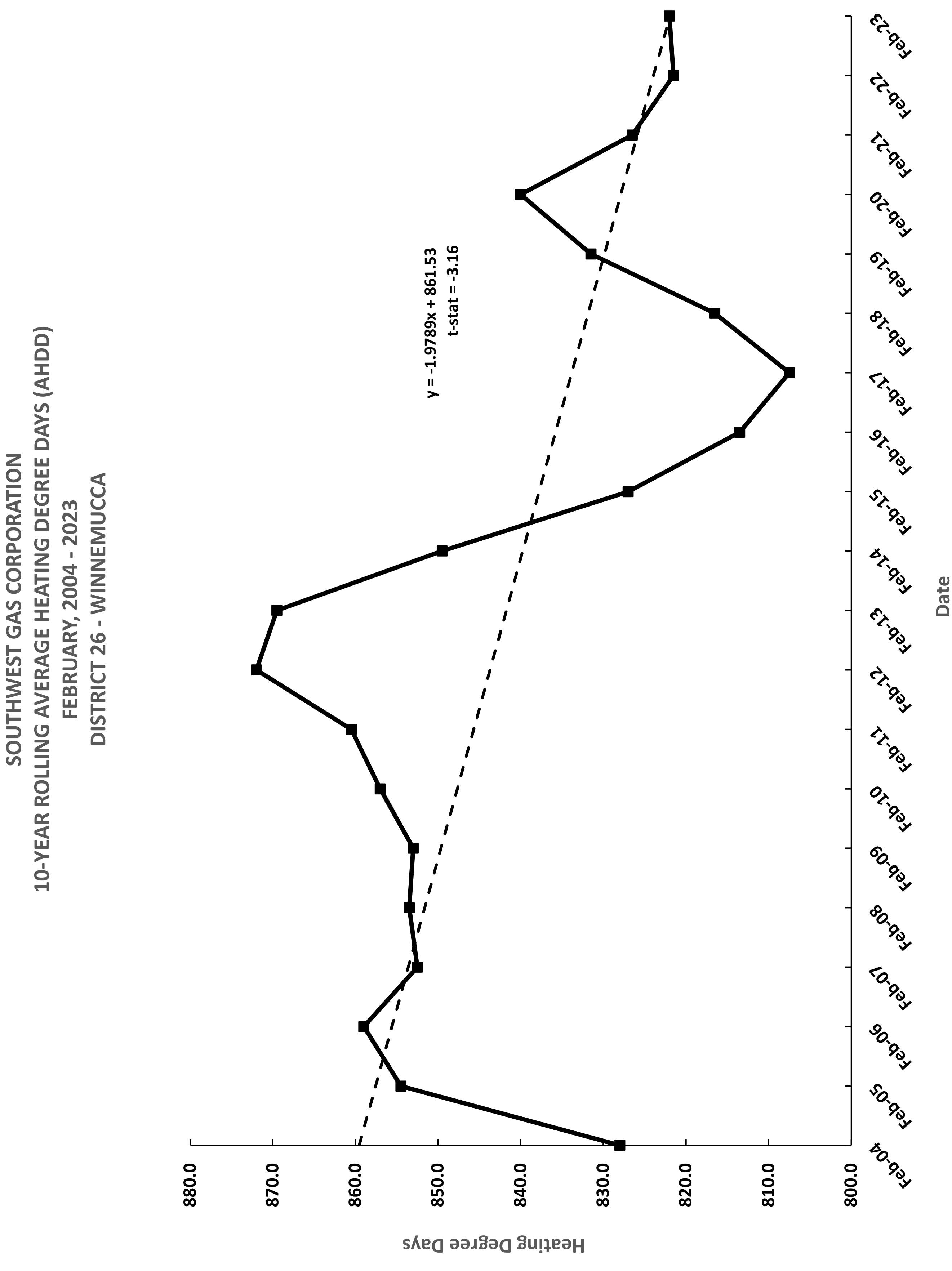


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
AUGUST, 2003 - 2022
D25 - ELKO

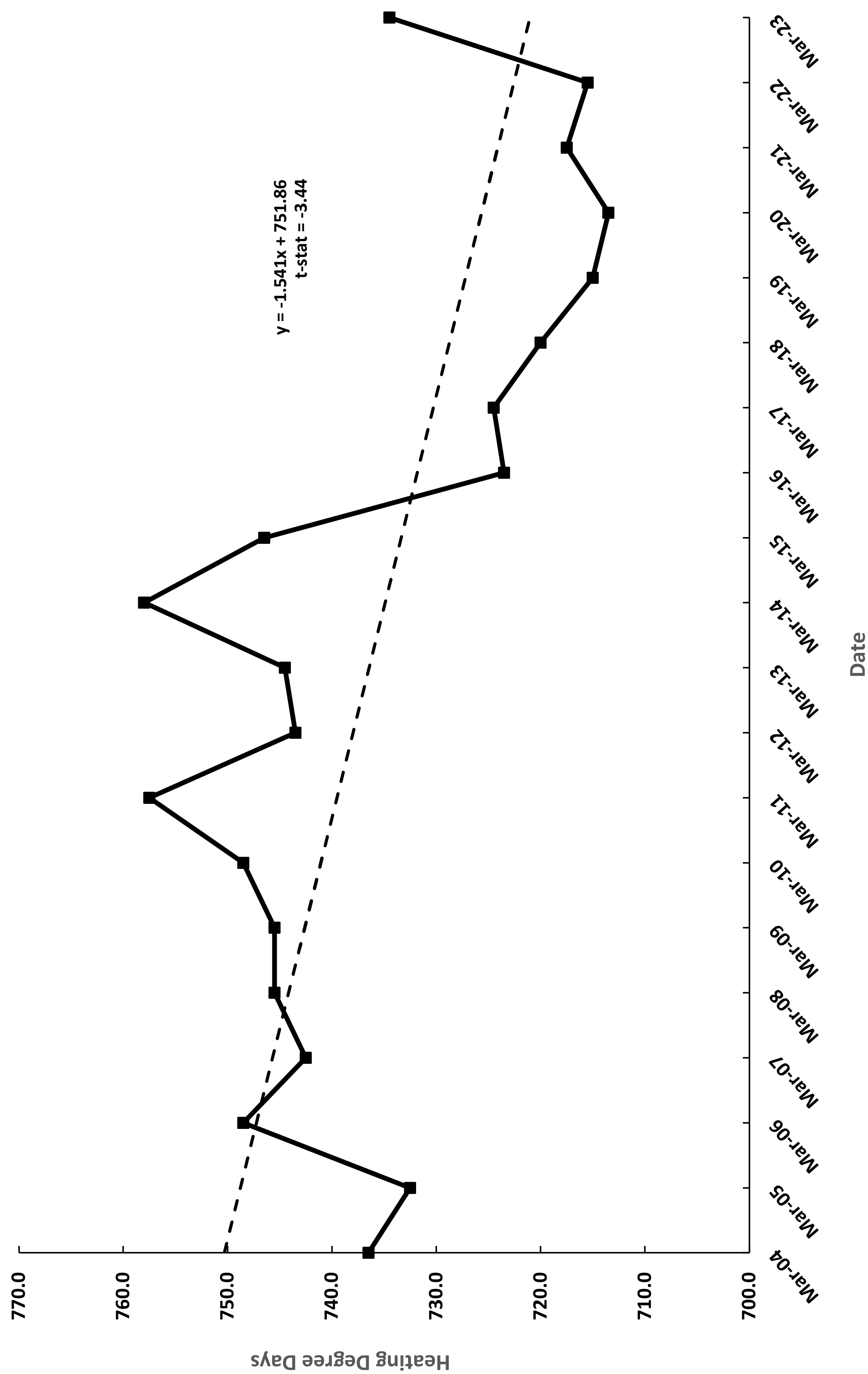


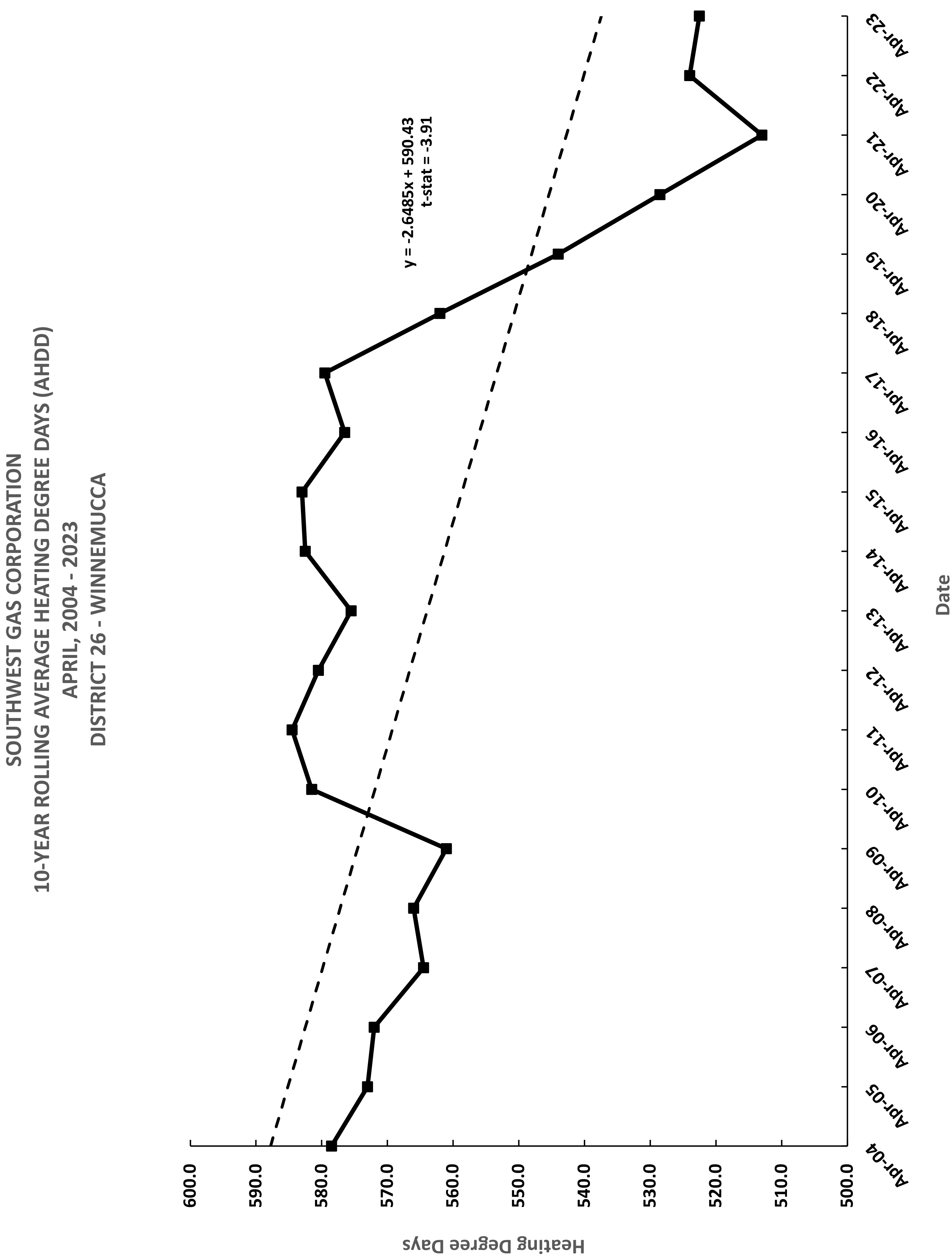
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE COOLING DEGREE DAYS (ACDD)
SEPTEMBER, 2003 - 2022
D25 - ELKO

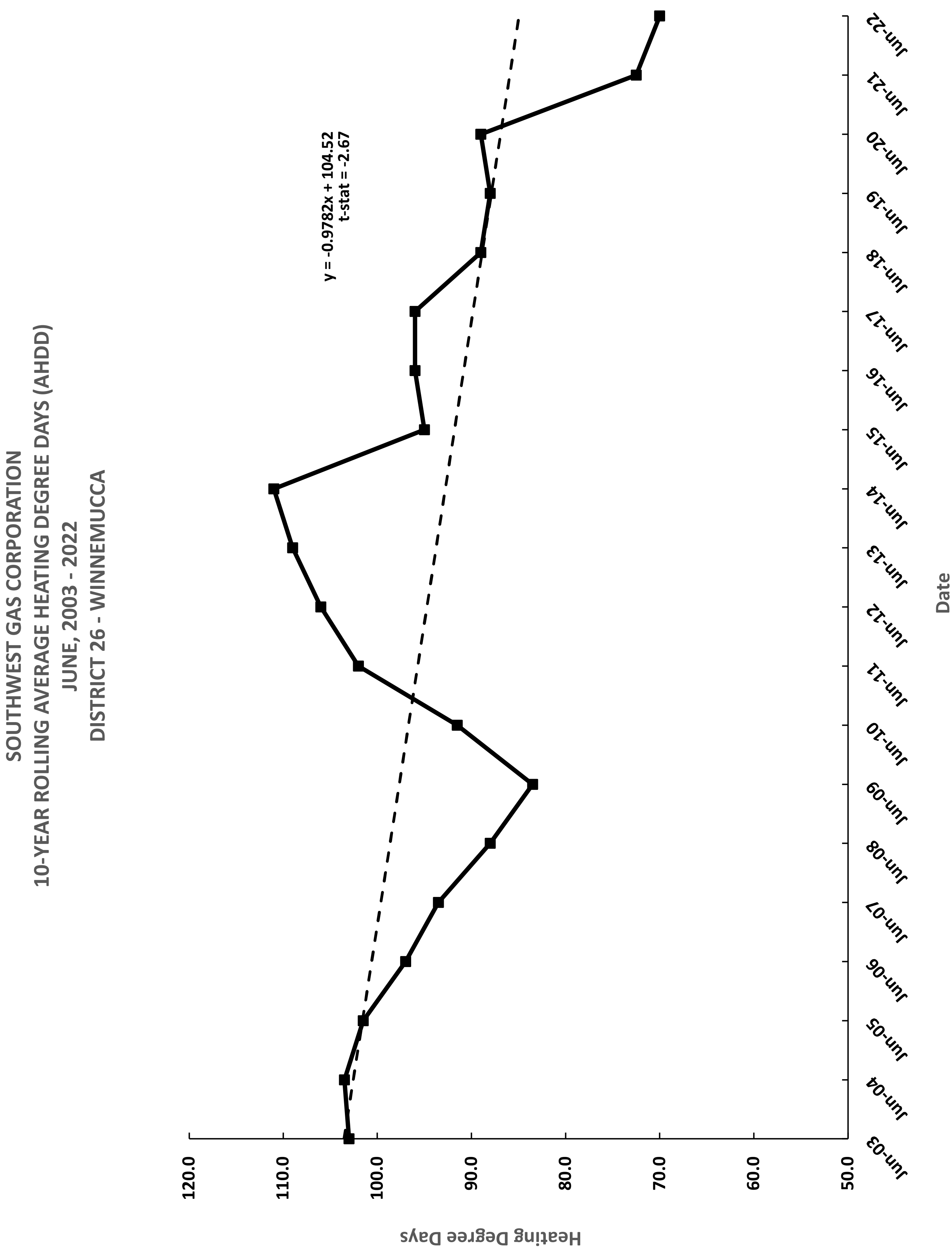


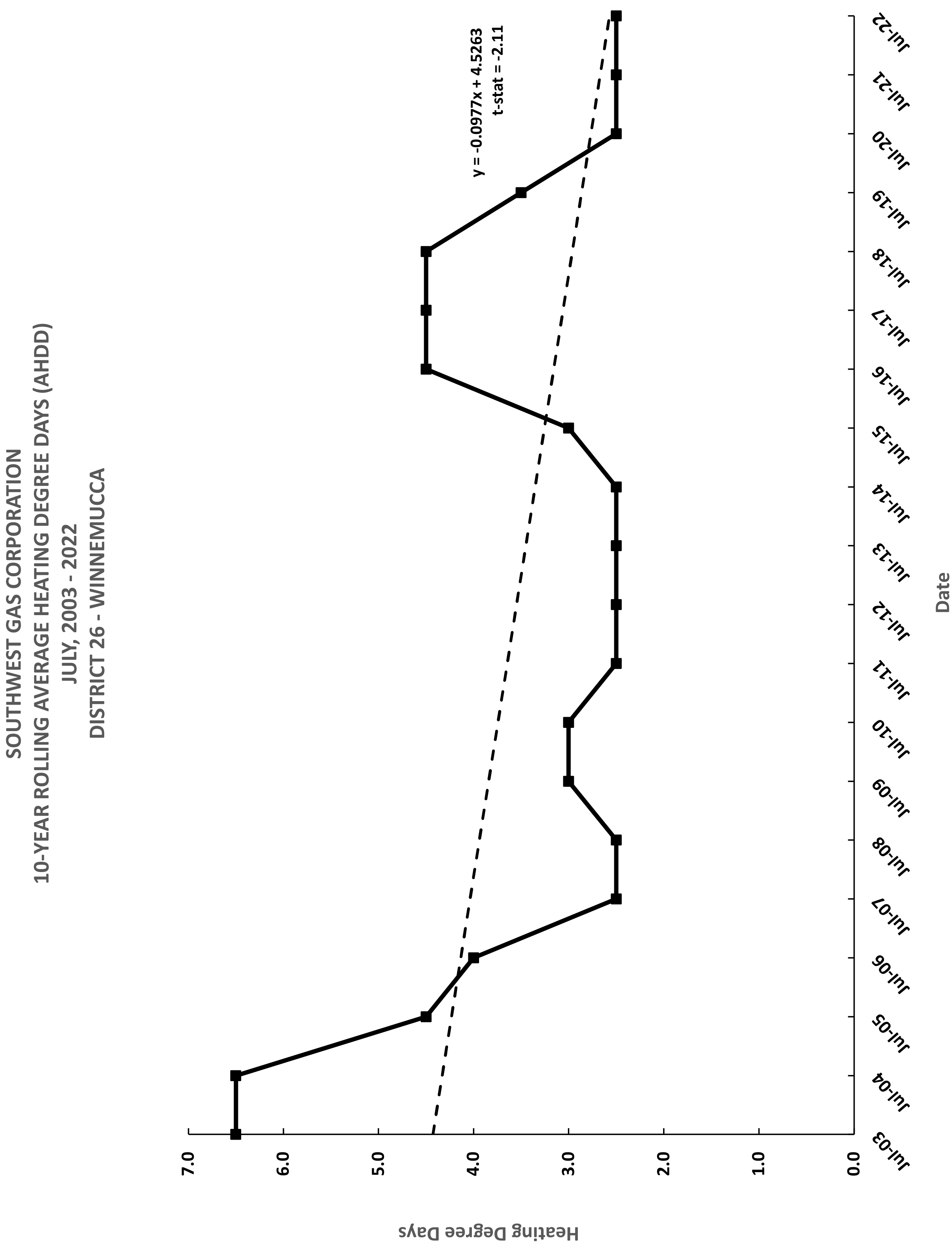

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
FEBRUARY, 2004 - 2023
DISTRICT 26 - WINNEMUCCA
y = -1.9789x + 861.53
t-stat = -3.16
Heating Degree Days
880.0
870.0
860.0
850.0
840.0
830.0
820.0
810.0
800.0
Date
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
Feb-13
Feb-14
Feb-15
Feb-16
Feb-17
Feb-18
Feb-19
Feb-20
Feb-21
Feb-22
Feb-23

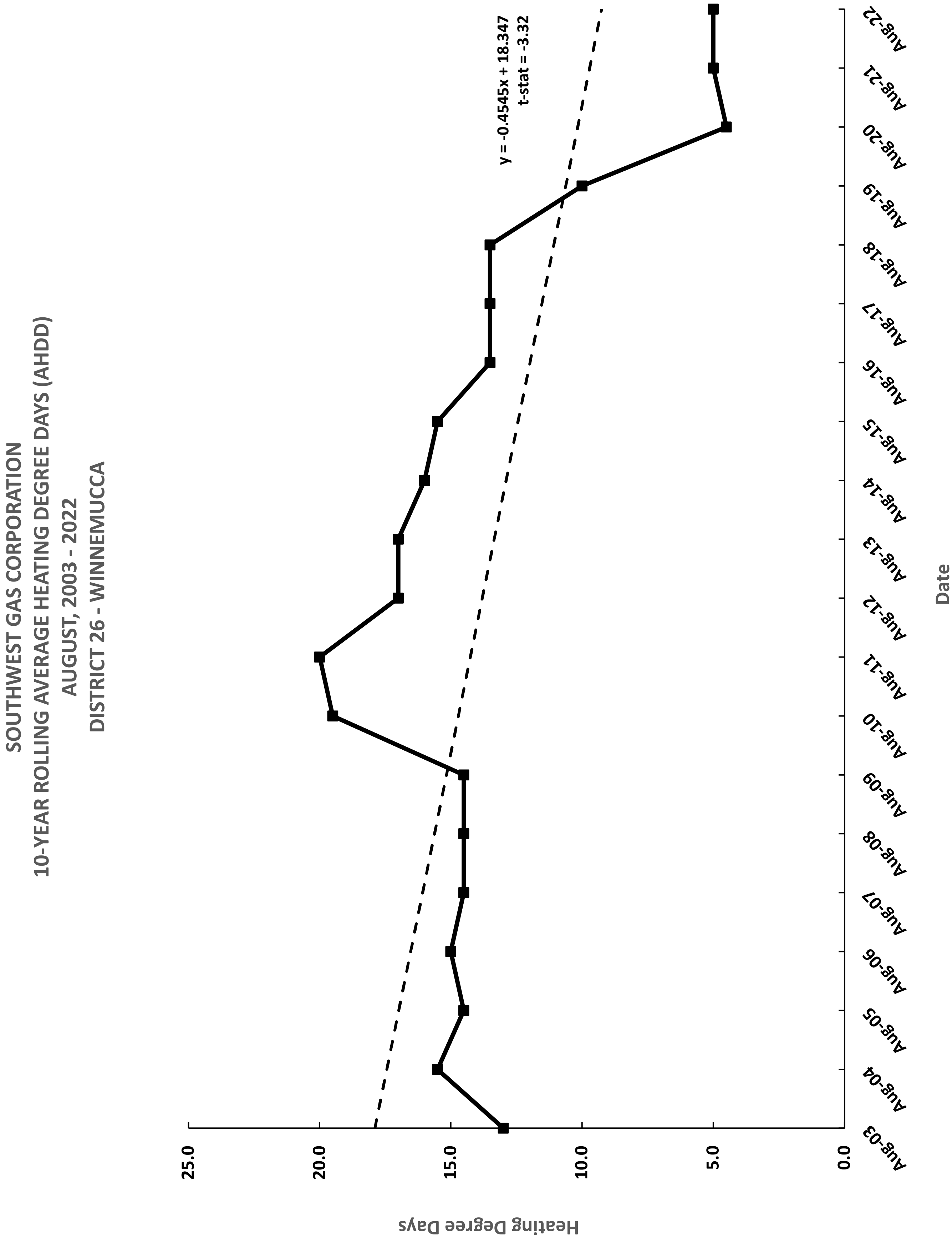
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
MARCH, 2004 - 2023
DISTRICT 26 - WINNEMUCCA

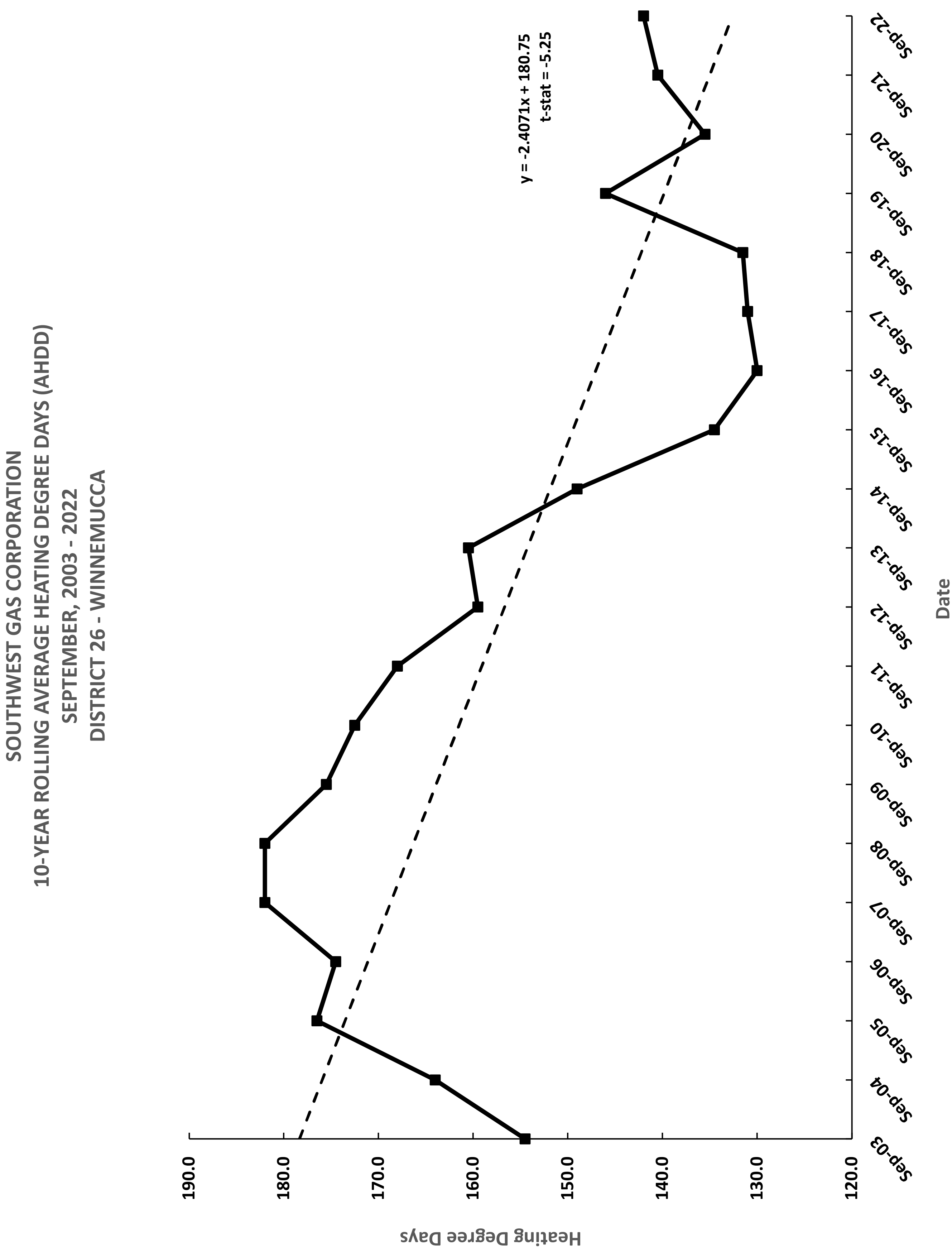


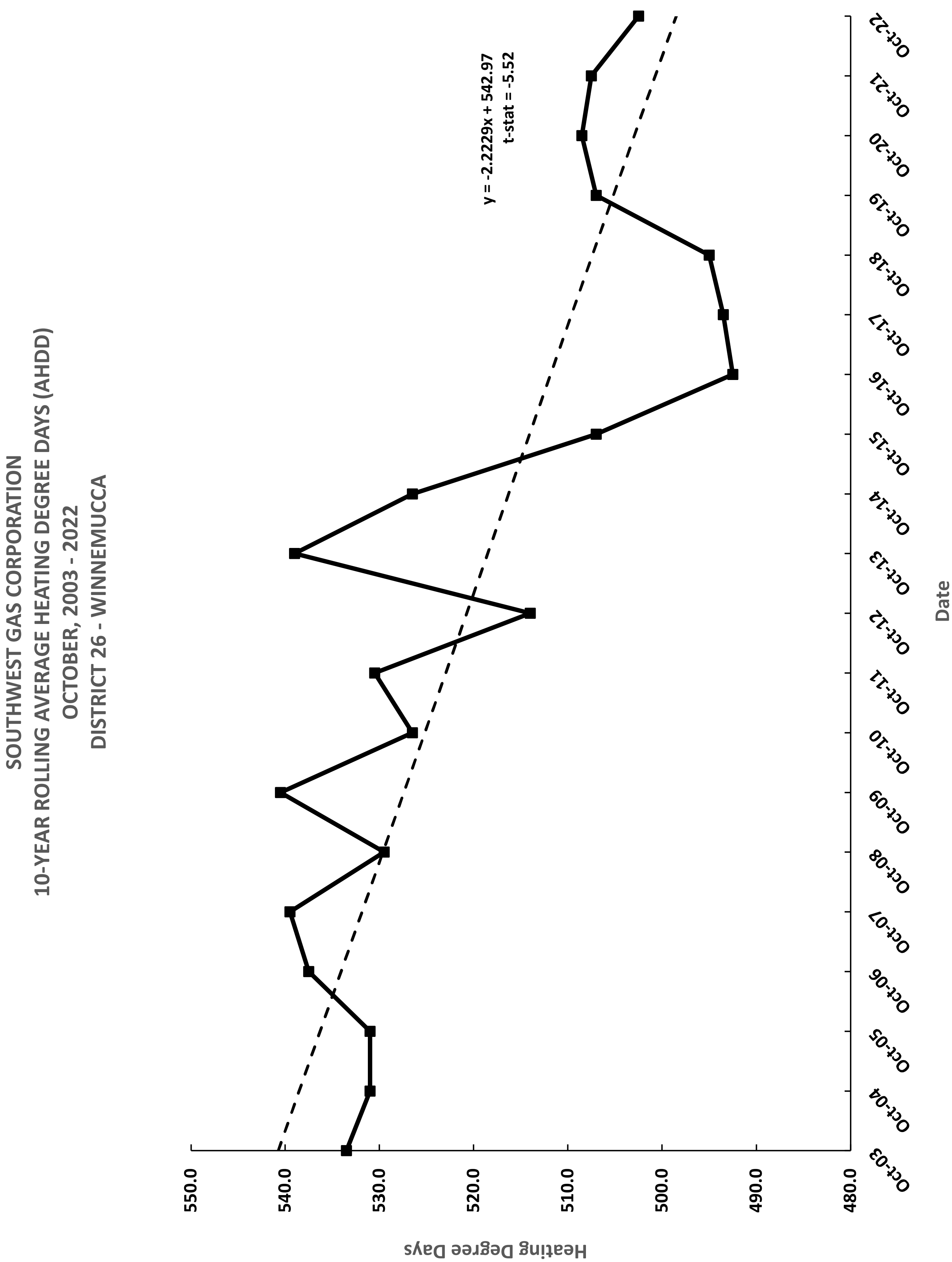

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
DISTRICT 26 - WINNEMUCCA
y = -2.6485x + 590.43
t-stat = -3.91
Heating Degree Days
600.0
590.0
580.0
570.0
560.0
550.0
540.0
530.0
520.0
510.0
500.0
Date
Apr-04
Apr-05
Apr-06
Apr-07
Apr-08
Apr-09
Apr-10
Apr-11
Apr-12
Apr-13
Apr-14
Apr-15
Apr-16
Apr-17
Apr-18
Apr-19
Apr-20
Apr-21
Apr-22
Apr-23

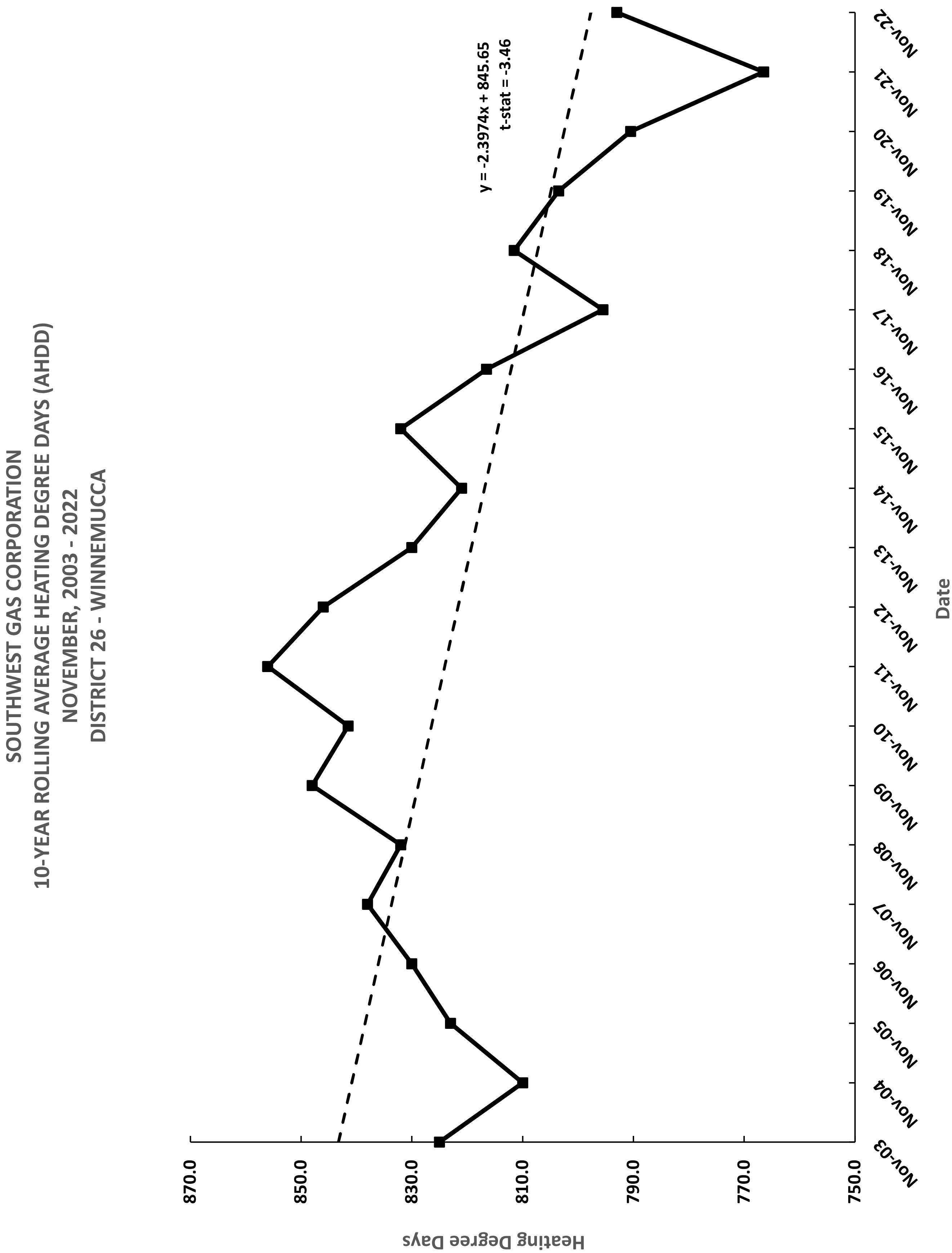

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
y = -0.9782x + 104.52
t-stat = -2.67
Heating Degree Days
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
Date
Jun-03
Jun-04
Jun-05
Jun-06
Jun-07
Jun-08
Jun-09
Jun-10
Jun-11
Jun-12
Jun-13
Jun-14
Jun-15
Jun-16
Jun-17
Jun-18
Jun-19
Jun-20
Jun-21
Jun-22


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
y = -0.0977x + 4.5263
t-stat = -2.11
Heating Degree Days
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jul-03
Jul-04
Jul-05
Jul-06
Jul-07
Jul-08
Jul-09
Jul-10
Jul-11
Jul-12
Jul-13
Jul-14
Jul-15
Jul-16
Jul-17
Jul-18
Jul-19
Jul-20
Jul-21
Jul-22
Date

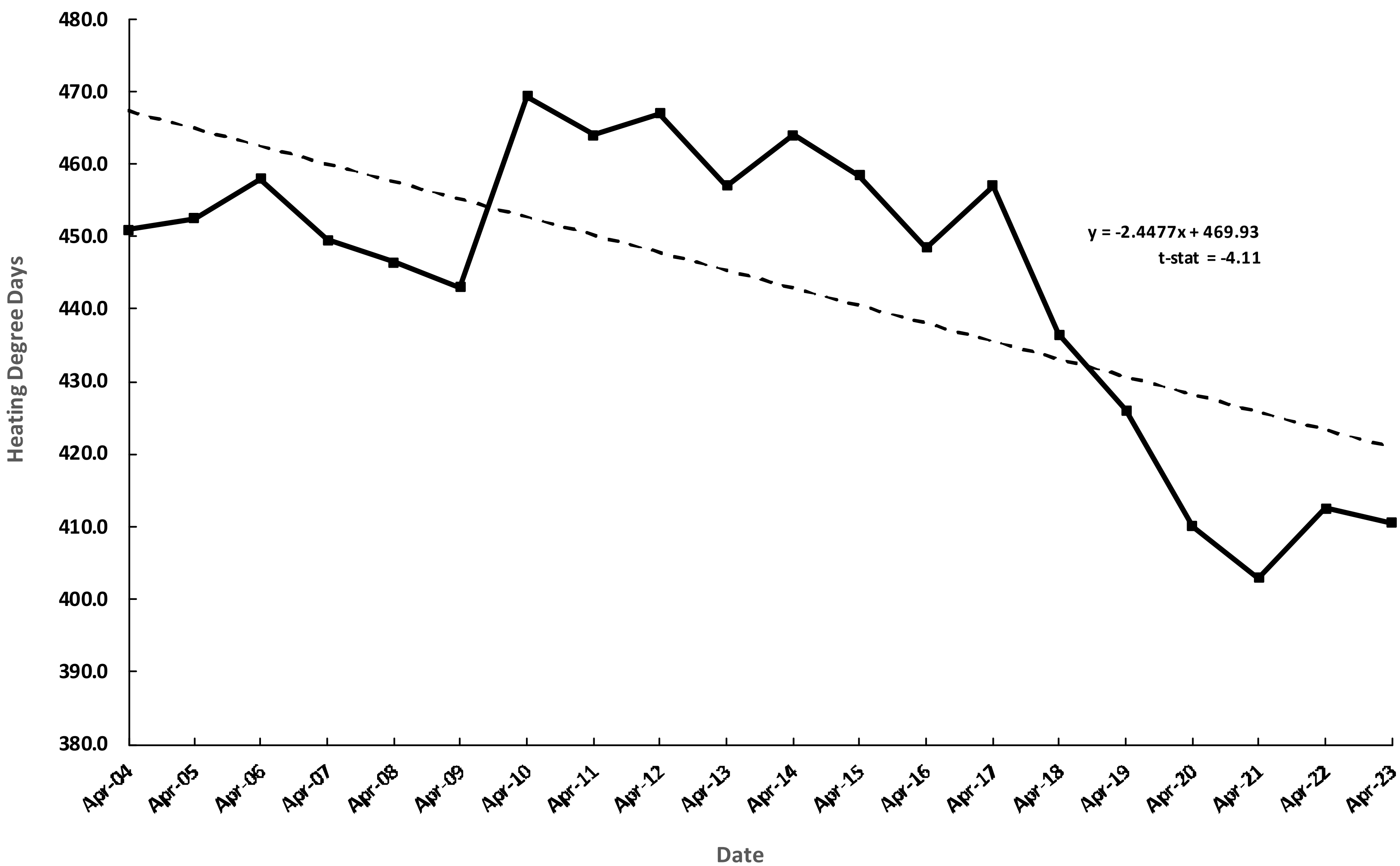

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
AUGUST, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
y = -0.4545x + 18.347
t-stat = -3.32
Heating Degree Days
25.0
20.0
15.0
10.0
5.0
0.0
Date
Aug-03
Aug-04
Aug-05
Aug-06
Aug-07
Aug-08
Aug-09
Aug-10
Aug-11
Aug-12
Aug-13
Aug-14
Aug-15
Aug-16
Aug-17
Aug-18
Aug-19
Aug-20
Aug-21
Aug-22


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
SEPTEMBER, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
y = -2.4071x + 180.75
t-stat = -5.25
Heating Degree Days
190.0
180.0
170.0
160.0
150.0
140.0
130.0
120.0
Date
Sep-03
Sep-04
Sep-05
Sep-06
Sep-07
Sep-08
Sep-09
Sep-10
Sep-11
Sep-12
Sep-13
Sep-14
Sep-15
Sep-16
Sep-17
Sep-18
Sep-19
Sep-20
Sep-21
Sep-22

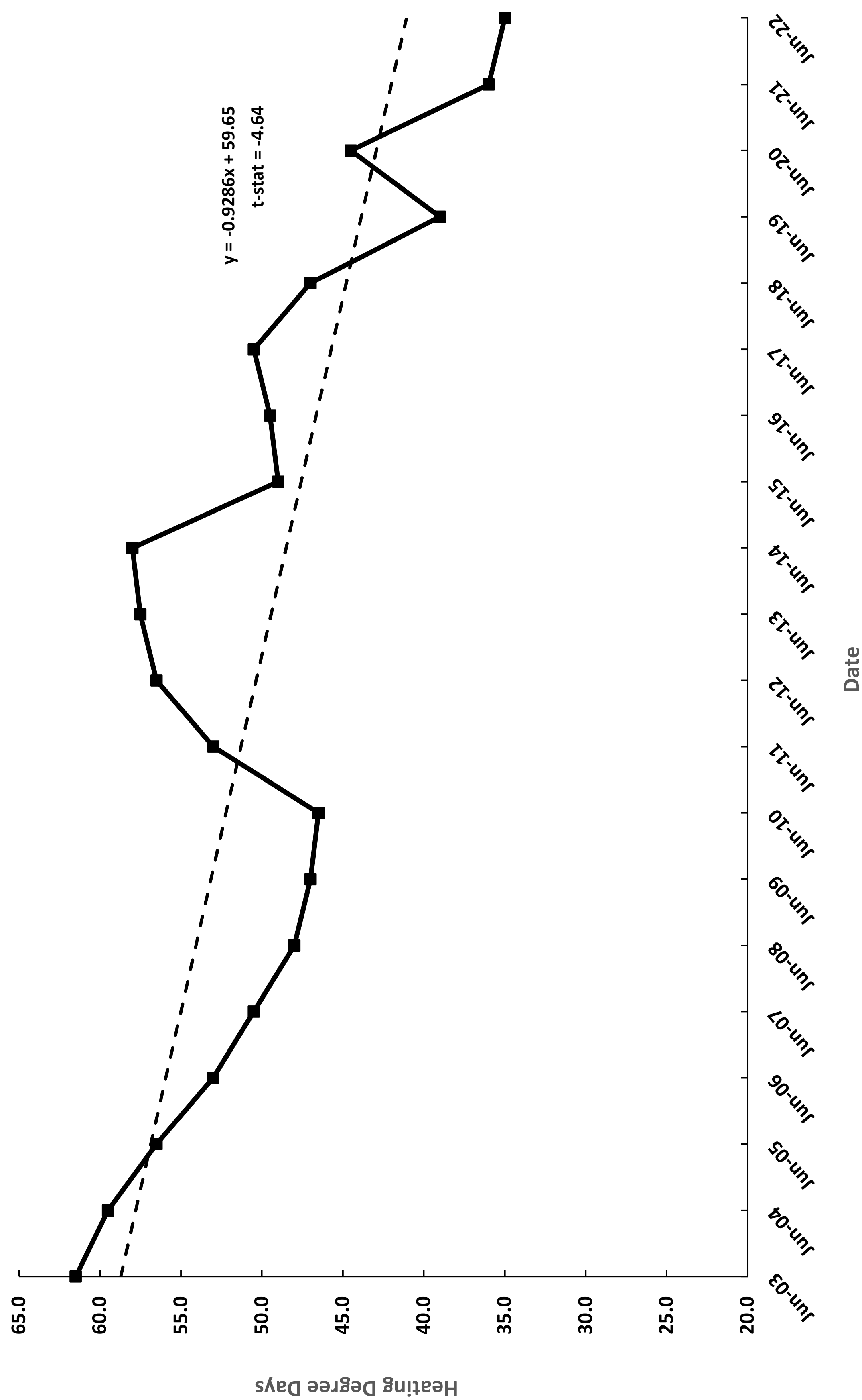

SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
OCTOBER, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
y = -2.2229x + 542.97
t-stat = -5.52
Heating Degree Days
550.0
540.0
530.0
520.0
510.0
500.0
490.0
480.0
Date
Oct-03
Oct-04
Oct-05
Oct-06
Oct-07
Oct-08
Oct-09
Oct-10
Oct-11
Oct-12
Oct-13
Oct-14
Oct-15
Oct-16
Oct-17
Oct-18
Oct-19
Oct-20
Oct-21
Oct-22


SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
NOVEMBER, 2003 - 2022
DISTRICT 26 - WINNEMUCCA
y = -2.3974x + 845.65
t-stat = -3.46
Heating Degree Days
870.0
850.0
830.0
810.0
790.0
770.0
750.0
Date
Nov-03
Nov-04
Nov-05
Nov-06
Nov-07
Nov-08
Nov-09
Nov-10
Nov-11
Nov-12
Nov-13
Nov-14
Nov-15
Nov-16
Nov-17
Nov-18
Nov-19
Nov-20
Nov-21
Nov-22

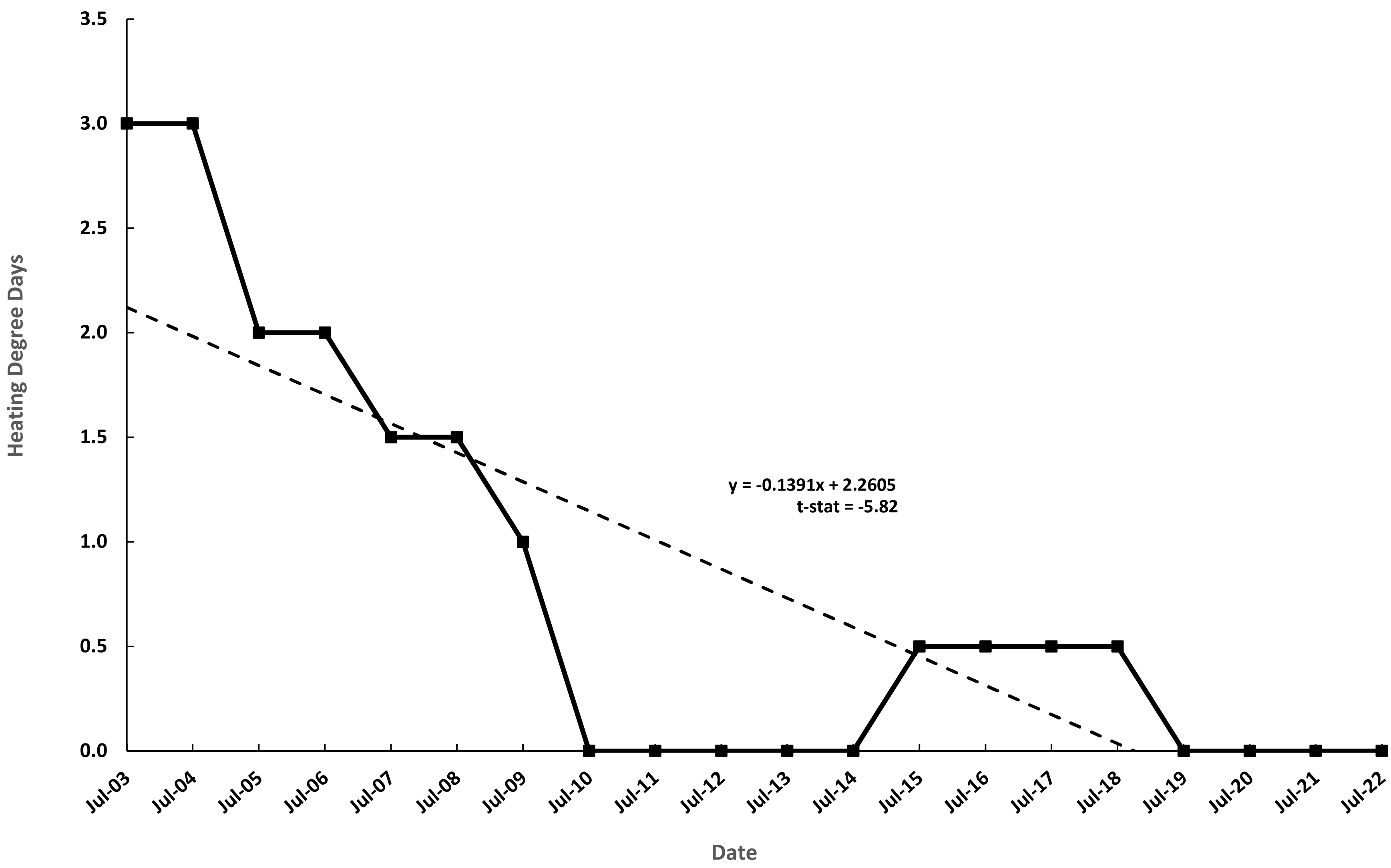
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
APRIL, 2004 - 2023
DISTRICT 27 - FERNLEY



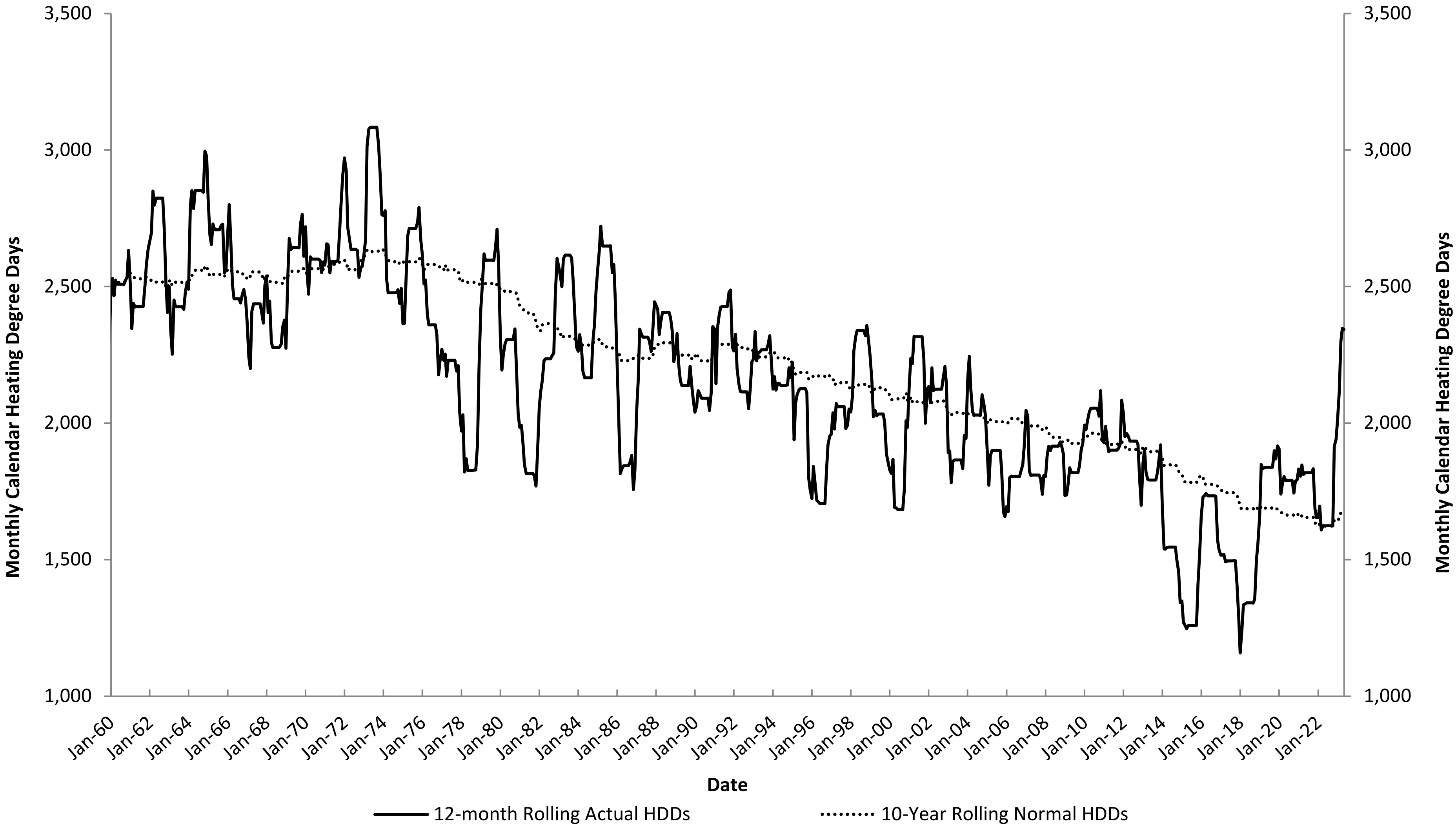
SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JUNE, 2003 - 2022
DISTRICT 27 - FERNLEY



SOUTHWEST GAS CORPORATION
10-YEAR ROLLING AVERAGE HEATING DEGREE DAYS (AHDD)
JULY, 2003 - 2022
DISTRICT 27 - FERNLEY

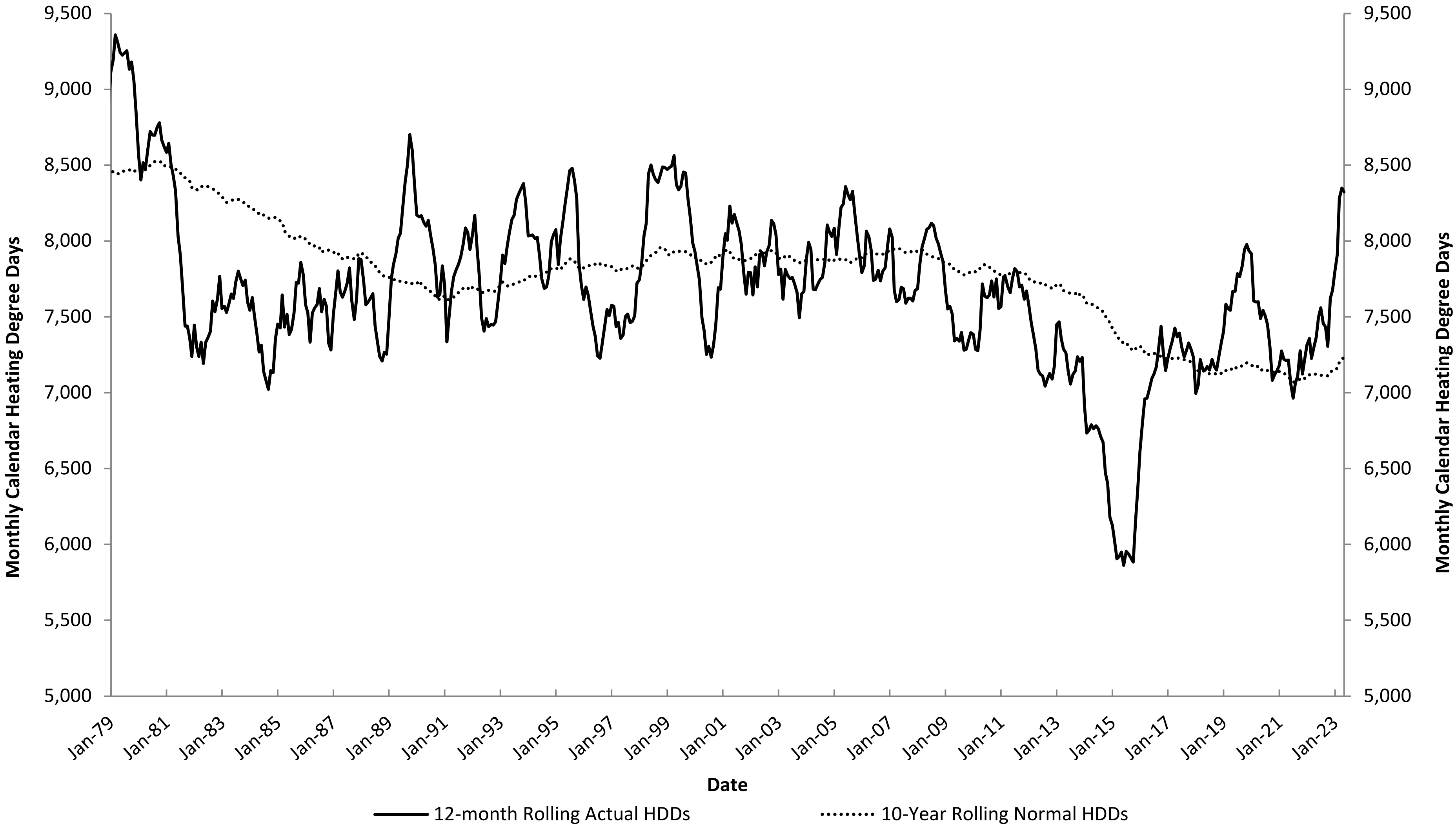


SOUTHWEST GAS CORPORATION
DISTRICT 21 - SOUTHERN NEVADA & DISTRICT 20 - MESQUITE
MONTHLY CALENDAR HEATING DEGREE DAYS
ROLLING 12-MONTH TOTAL & ROLLING 10-YEAR NORMAL
MONTHLY, JANUARY 1960 - MAY 2023



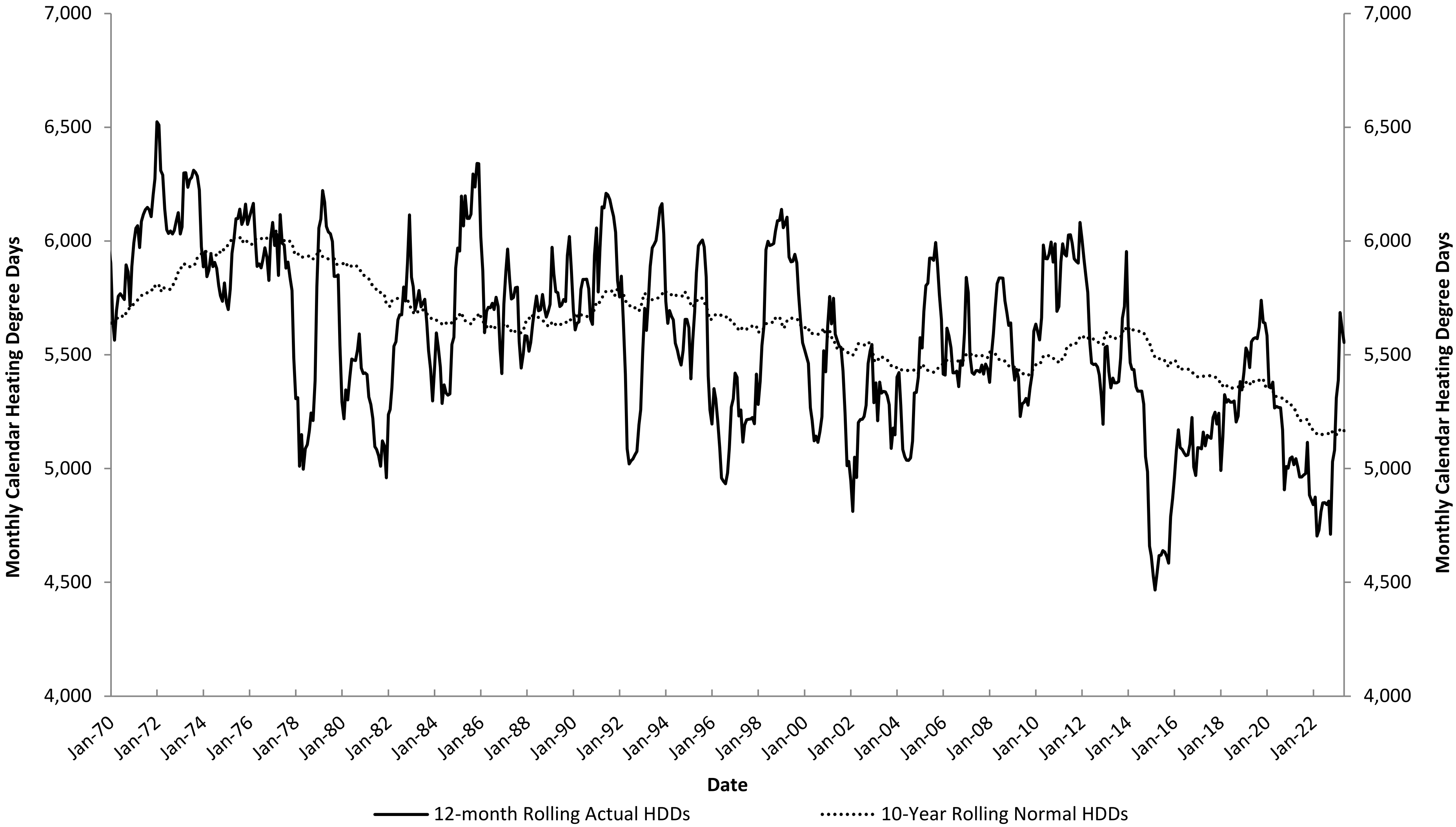
Source Date: National Oceanic and Atmospheric Administration (NOAA), Harry Reid International Airport

SOUTHWEST GAS CORPORATION
DISTRICT 23 - TAHOE
MONTHLY CALENDAR HEATING DEGREE DAYS
ROLLING 12-MONTH TOTAL & ROLLING 10-YEAR NORMAL
MONTHLY, JANUARY 1979 - MAY 2023



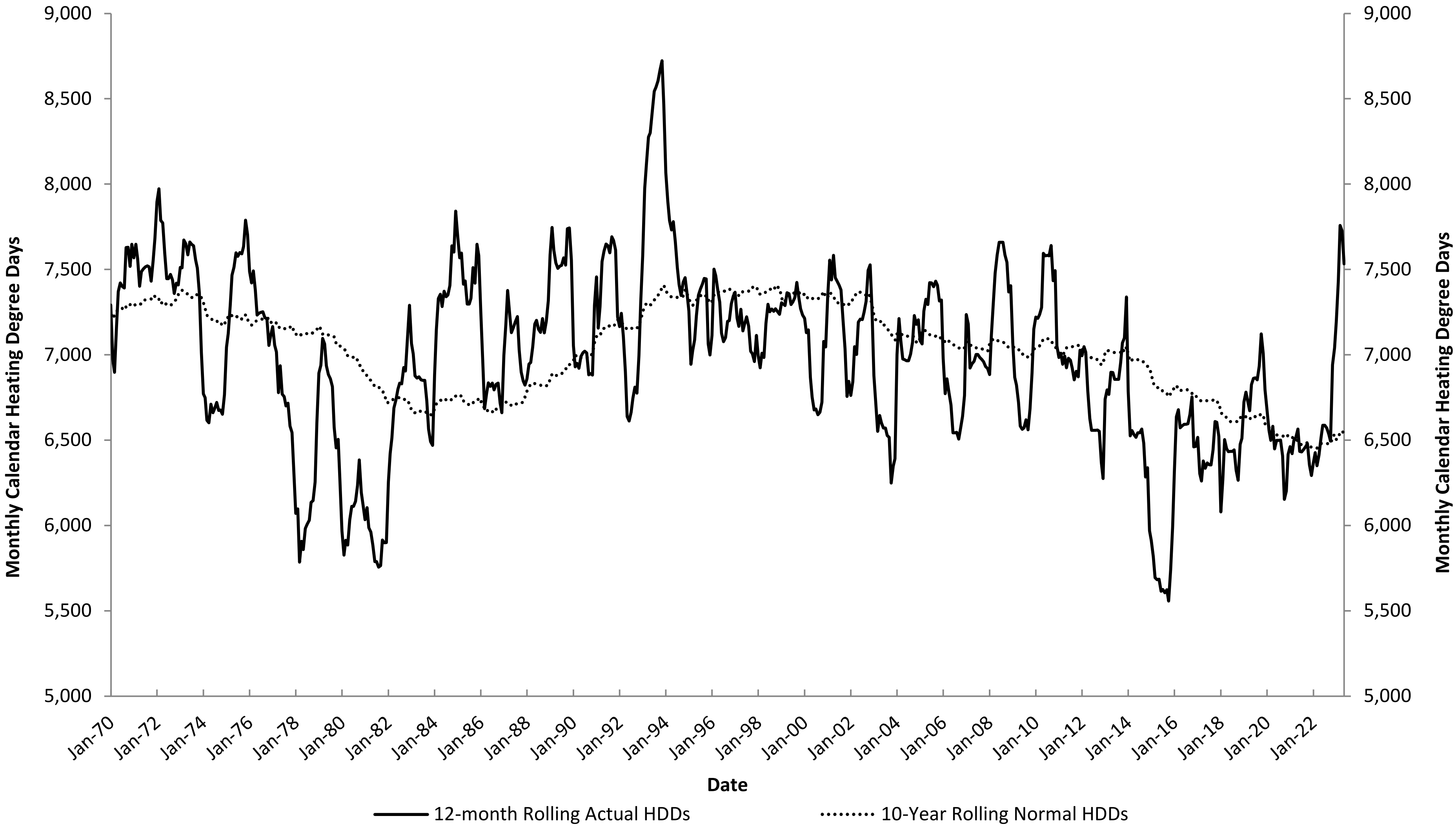
Source Date: National Oceanic and Atmospheric Administration (NOAA), South L:ake Tahoe Airport

SOUTHWEST GAS CORPORATION
DISTRICT 24 - CARSON
MONTHLY CALENDAR HEATING DEGREE DAYS
ROLLING 12-MONTH TOTAL & ROLLING 10-YEAR NORMAL
MONTHLY, JANUARY 1969 - MAY 2023

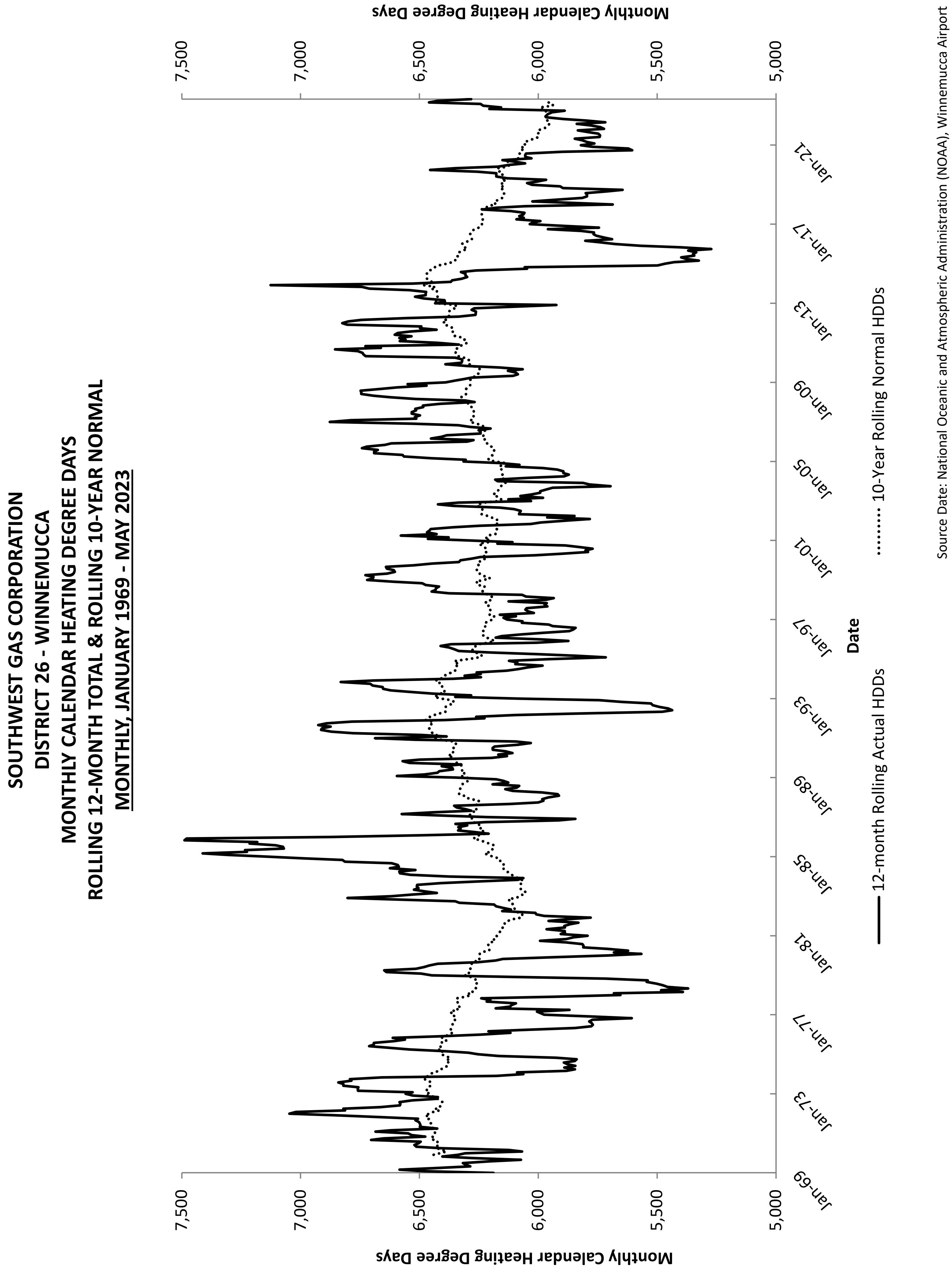


Source Date: National Oceanic and Atmospheric Administration (NOAA), Carson City Fire Department

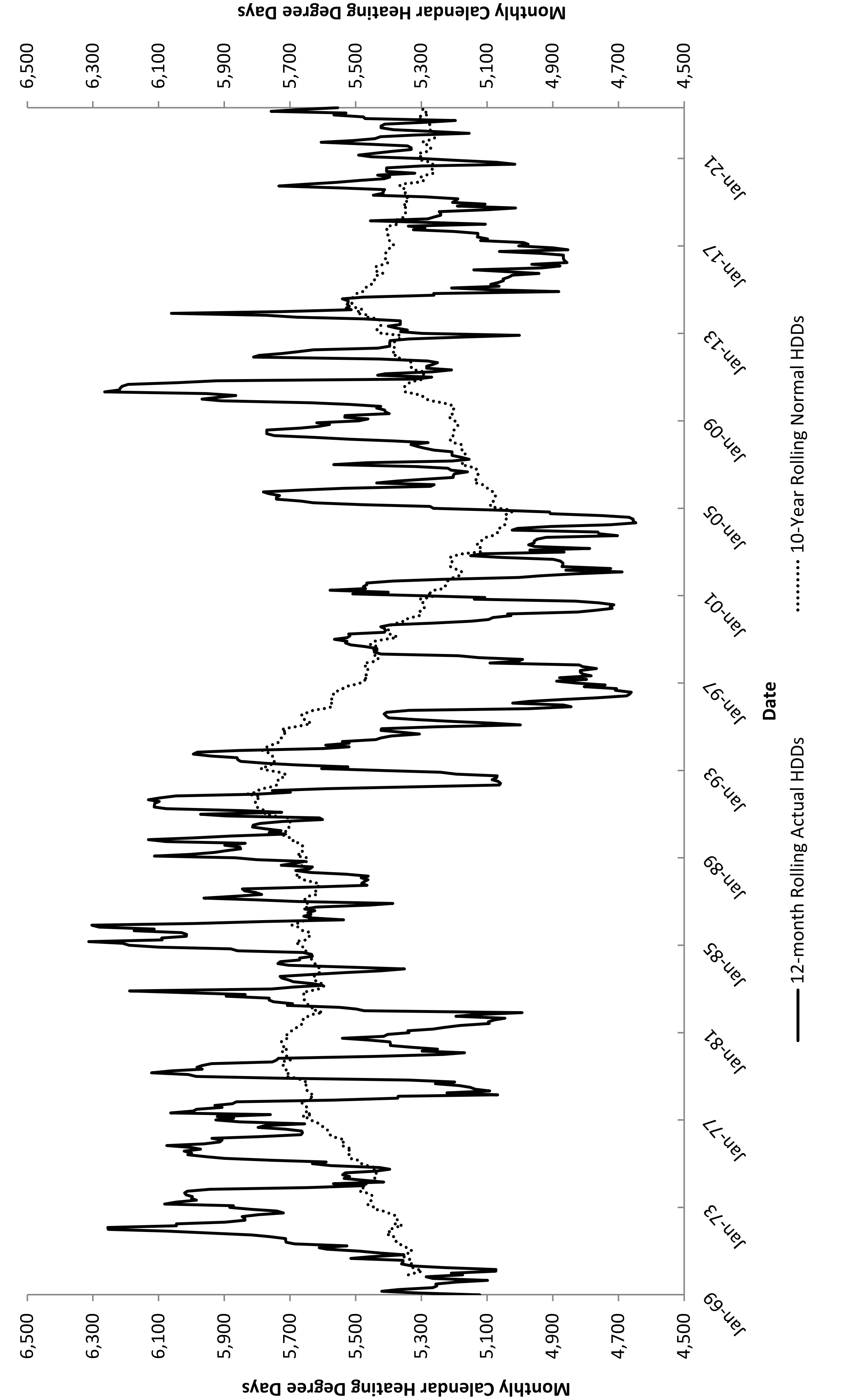
SOUTHWEST GAS CORPORATION
DISTRICT 25 - ELKO & D28 - SPRING CREEK
MONTHLY CALENDAR HEATING DEGREE DAYS
ROLLING 12-MONTH TOTAL & ROLLING 10-YEAR NORMAL
MONTHLY, JANUARY 1969 - MAY 2023



Source Date: National Oceanic and Atmospheric Administration (NOAA), Elko Regional Airport


SOUTHWEST GAS CORPORATION
DISTRICT 26 - WINNEMUCCA
MONTHLY CALENDAR HEATING DEGREE DAYS
ROLLING 12-MONTH TOTAL & ROLLING 10-YEAR NORMAL
MONTHLY, JANUARY 1969 - MAY 2023
Monthly Calendar Heating Degree Days
7,500
7,000
6,500
6,000
5,500
5,000
Jan-69
Jan-73
Jan-77
Jan-81
Jan-85
Jan-89
Jan-93
Jan-97
Jan-01
Jan-05
Jan-09
Jan-13
Jan-17
Jan-21
Date
12-month Rolling Actual HDDs
10-Year Rolling Normal HDDs
Source Date: National Oceanic and Atmospheric Administration (NOAA), Winnemucca Airport

SOUTHWEST GAS CORPORATION
DISTRICT 27 - FERNLEY
MONTHLY CALENDAR HEATING DEGREE DAYS
ROLLING 12-MONTH TOTAL & ROLLING 10-YEAR NORMAL
MONTHLY, JANUARY 1969 - MAY 2023



Source Date: National Oceanic and Atmospheric Administration (NOAA), Fallon Experiment Station

AFFIRMATION OF BRANDY LITTLE

Pursuant to NAC 703.710, Brandy Little affirms and declares the following:

1. I am over 18 years of age and am competent to testify to facts stated below which are based upon my personal knowledge.
2. That I am the person identified in the foregoing prepared testimony, including, where applicable, any exhibits.
3. That such testimony and exhibits were prepared by me or under my direction.
4. That the information appearing in my testimony and exhibits are true to the best of my knowledge and belief and that if I were asked the questions stated therein under oath, my answers would be the same.
5. Pursuant to NRS 53.045, I declare under penalty of perjury under the law of the State of Nevada that the foregoing is true and correct.

EXECUTED and DATED this 14th day of August, 2023

BRANDY LITTLE

IN THE MATTER OF

SOUTHWEST GAS CORPORATION

DOCKET NO. 23-09___

PREPARED DIRECT TESTIMONY

OF

A. BROOKS CONGDON

ON BEHALF OF

SOUTHWEST GAS CORPORATION

SEPTEMBER 1, 2023

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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Direct Testimony
of
A. Brooks Congdon

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is A. Brooks Congdon. My business address is 8350 S. Durango Drive, Las Vegas, Nevada 89113.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or Company) in the Regulation department. My title is Manager.

Q. 3 Please summarize your educational background and relevant business experience.

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I have previously provided testimony before the Public Utilities Commission of Nevada (Commission), the Arizona Corporation Commission, and the California Public Utilities Commission.

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 My prepared direct testimony supports Southwest Gas' proposed changes to its currently approved Contract Transition Adjustment Provision (or CTAP).

Q. 6 Please summarize your prepared direct testimony.

A. 6 My prepared direct testimony consists of the following key objectives:

- Provide an overview of the history and intent of the CTAP;
- Discuss the Company's proposed enhancements to the CTAP; and,
- Provide a factual basis for why the proposed enhancements are necessary and in the public interest.

II. THE HISTORY AND INTENT OF THE CTAP

Q. 7 Please briefly describe the history and intent of the CTAP and why it is a necessary tariff provision for customers and the Company.

A. 7 Southwest Gas has historically provided service to its largest customers under a contract that considered special services and/or discounted rates[1] (Contract Customers). In Docket No. 18-05031, the Company testified that Contract Customers were many times larger than customers served under its largest full-margin tariff rate Schedule No. SG-G4/NG-G4, and that new cost-of-service based rate schedules should be developed to serve the Contract Customers as their respective contracts expire. The Commission directed Southwest Gas to file two class cost of service studies (COSS) in its next Nevada general rate case.[2] One study would provide the basis for designing the Company's full-margin tariff rates and the other study would establish new rate schedules and rates applicable to Contract Customers as their special or discounted rate contracts expire.

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[1] Terms are intended to be general description / reference only.
[2] See the Commission's December 24, 2018 Order in Docket No. 18-05031 (Order) at page 274.

Pursuant to the Order, in its next general rate case (GRC) filed in Docket No. 20-02023, Southwest Gas filed two COSS and proposed new rate schedules, three in Southern Nevada and one in Northern Nevada, intended to provide an appropriate rate schedule under which the Contract Customers would be served at the expiration of their contracts.[3] The rates Southwest Gas proposed in Docket No. 20-02023 for these new schedules would have generated different base tariff general revenue (BTGR) than the contract revenues included in calculating the Company's full-margin tariff rates. As a result, as the contracts expired and the Contract Customers transition to take service under the new rate schedules, the Company's revenue from those customers would differ from what was included in the designing of full-margin tariff rates. The Company proposed the CTAP as a two-way balancing account to capture the difference between Contract Customer revenue included in the design of tariff rates in a GRC and the amount of revenue billed under the Contract Customers' full-margin tariff rate schedule until such time rates could be reset in the Company's next GRC. The symmetrical design of the CTAP allows customers and the Company to be "made-whole" for any changes in BTGR between GRCs.

Q. 8 Did the Commission approve the CTAP as proposed by Southwest Gas?

A. 8 Yes, the Commission approved the CTAP as proposed by the Company.[4]

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[3] Please note that in Docket No. 21-09001, one of the new Southern Nevada schedules was eliminated. Therefore, there are now two schedules: SG-G-5 and SG-G-6 in Southern Nevada, and one schedule, NG-G5 in Northern Nevada.

[4] See the Commission's September 25, 2020 Order in Docket No. 20-02023 at page 206.

III. PROPOSED ENHANCEMENTS TO THE CTAP

Q. 9 Is Southwest Gas requesting enhancements to the CTAP mechanism in the instant Application?

A. 9 Yes. Consistent with the original intent of the CTAP to capture changes in revenue as Contract Customers transition from special contract or discounted rates to full-margin tariff rates, Southwest Gas proposes to expand the mechanism to apply to customers served under schedules SG-G5 and SG-G6. As Southwest Gas is proposing to expand the mechanism to include existing full-margin SG-G5 and SG-G6 customers, the Company proposes to change the mechanism's name from the Contract Transition Adjustment Provision to the Customer Transition Adjustment Provision (still the CTAP). The proposed CTAP would not apply to any new SG-G5 / SG-G6 customers that initiate service between rates cases until such customers are included in the test year and the design of full-margin tariff rates in a future Company rate case. Following which, the proposed CTAP would apply to remaining Contract Customers and to SG-G5 and SG-G6 customers that were included in the rate design.

Q. 10 Is Southwest Gas requesting fundamental changes to the CTAP?

A. 10 No. The spirit of the mechanism, accounting, and calculation of the adjustment rate will remain the same.

IV. WHY ENHANCEMENTS ARE NECESSARY AND IN THE PUBLIC INTEREST

Q. 11 Please explain what has occurred since the CTAP was originally approved that necessitates the proposed changes.

A. 11 Since the approval of the CTAP and the creation of the above-referenced rate schedules in Docket No. 20-02023, one former SG-G4 customer and one former Contract Customer initiated service under SG-G6 and SG-G5, respectively.

Additionally, the Company anticipates one more current Contract Customer to initiate service under schedule SG-G6 prior to the effective date of rates in the instant proceeding.

As explained by Southwest Gas in Docket No. 18-05031, and described herein, the Contract Customers and customers now being served on schedules SG-G5 and SG-G6, are the largest customers on Southwest Gas' Nevada system. For example, the single largest Contract Customer uses almost as much gas annually as all the Company's SG-G4 customers combined. The size of customers, coupled with the rate differential between schedules SG-G5 and SG-G6, will result in very large swings in revenue if customers move from one of these schedules to another.

Q. 12 Is Southwest Gas able to provide an example of the swings in revenue that could occur if a Contract Customer were to move from service under a contract to schedule SG-G6 and then later to schedule SG-G5?

A. 12 Yes. Exhibit No._(ABC-1) shows the contract revenue included in the design of Southwest Gas' full-margin tariff rates in the instant proceeding, and margin revenue derived under the Company's proposed rates for schedule SG-G6 for the Contract Customer expected to initiate service under this schedule (Customer 1) and for the Company's largest Contract Customer (Customer 2). Exhibit No._(ABC-1) also shows margin revenue under proposed rates for schedule SG-G5 if the customers' monthly burn profile changes after initiating service on SG-G6 such that they qualify for service under that rate schedule.

Q. 13 Can you please summarize the results shown in Exhibit No._(ABC-1).

A. 13 Yes. For Customer 1, Exhibit No._(ABC-1) shows the contract revenues included in the design of Southwest Gas' full-margin tariff rates are $2,299,999 and, based on test year monthly volumes, margin revenue derived under the Company's proposed rates for schedule SG-G6 are expected to be $3,725,782. The increase in margin revenue would be recorded in the current CTAP mechanism and returned to customers. However, the current CTAP applies only to changes in Contract Customer revenue and would not apply to subsequent changes in revenue if existing SG-G5 and SG-G6 customers move from one of these schedules to another. Exhibit No._(ABC-1) shows that if Customer 1's load profile changed over time and Customer 1 qualified for service under schedule SG-G5, margin revenue could decrease by as much as $2,748,896 to $976,887. The proposed CTAP would allow Southwest Gas to recover decreases in margin revenue if an existing SG-G6 customer moved to SG-G5. Changes in revenue reflected in Exhibit No._(ABC-1) for Customer 2, the Company's largest Contract Customer, are potentially much larger.

Q. 14 If an existing SG-G5 customer moved to schedule SG-G6 would Southwest Gas' margin revenue increase?

A. 14 Yes. For a customer moving from schedule SG-G5 to SG-G6, Southwest Gas would experience an increase in margin revenue. The proposed CTAP would allow Southwest Gas to return any margin revenue windfall to customers if an existing SG-G5 customer moved to SG-G6.

Q. 15 Is it in the public interest for the Commission to approve the Company's proposed changes to the CTAP as described herein?

A. 15 Yes. Given the potential magnitude of changes in revenue that could occur if large customers move between contracted rates, SG-G6, and SG-G5, Southwest Gas believes that it is the public interest for the Commission to approve the proposed CTAP.

Q. 16 Does this conclude your prepared direct testimony?

A. 16 Yes.

SUMMARY OF QUALIFICATIONS
A. BROOKS CONGDON

From 1976 to 1980, I was employed by General Telephone of the Midwest in the Company's Columbus, Nebraska office. My primary responsibilities involved projecting growth in demand for telephone service in eastern Nebraska and western Iowa.

From 1980 to 1984, I was employed by Pacific Power and Light Company in the Company's Portland, Oregon corporate office. My primary responsibilities involved performing customer class cost of service studies and designing customer class rates for the Company's electric and water utilities.

From 1984 to 1987, I was employed by Kansas Electric Power Cooperative in the Cooperative's Topeka, Kansas office. My primary responsibilities involved coordination of intervention in wholesale power rate cases at the Federal Energy Regulatory Commission and preparation of the Cooperative's rate case activity before the Kansas Corporation Commission.

From 1987 to present, I have been employed by Southwest Gas Corporation in the Company's Las Vegas, Nevada corporate office. I began my employment as a Rate Specialist and have held positions of increasing responsibility including Manager/Pricing and Tariffs. In October 2014, I was assigned to be Manager/Energy Efficiency. In May 2018, the Company's Rates and Regulatory Analysis and Energy Efficiency departments were combined and I assumed my current position as Manager/Regulation and Energy Efficiency. My primary responsibilities have involved preparation of customer class cost of service studies, rate design and the development and administration of energy efficiency programs for the Company's three-state operating jurisdictions.

I have submitted prepared written and oral testimony before the Public Utilities Commission of Nevada, the California Public Utilities Commission and the Arizona Corporation Commission.

Prior to beginning my professional career, I received a Bachelor of Science degree in Economics from Iowa State University in 1975.

SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
REVENUE IMPACTS OF TRANSITION FROM CONTRACT RATES TO SCHEDULES SG-G6 AND SG-G5

Line No.	Description	Bill Demand and Rates	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Total	Line No.	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)		
	Customer No. 1																
1	Billing Demand / Monthly Volume	6,114,800	5,881,490	5,978,690	6,114,800	5,880,710	5,445,080	5,769,730	4,075,630	3,465,494	3,017,880	5,943,980	5,829,670	173,340	57,576,494	1	47,017,490
2	Meters		1	1	1	1	1	1	1	1	1	1	1	1	12	2	0.183390882
3	Contract Margin Included in Rate Design		$ 191,667	$ 191,667	$ 191,667	$ 191,667	$ 191,667	$ 191,667	$ 191,667	$ 191,667	$ 191,667	$ 191,667	$ 191,667	$ 191,667	$ 2,299,999	3	
4	Margin at Schedule SG-G6 Rates															4	
5	BSC	$ 1,000.00	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000		5	
6	Demand	$ 0.02220	135,766	135,766	135,766	135,766	135,766	135,766	135,766	135,766	135,766	135,766	135,766	135,766		6	
7	Commodity	$ 0.03601	211,767	215,266	220,167	211,739	196,054	207,743	146,746	124,777	108,661	214,017	209,901	6,241		7	
8	Total Schedule SG-G6 Margin		$ 348,533	$ 352,033	$ 356,933	$ 348,505	$ 332,820	$ 344,509	$ 283,512	$ 261,543	$ 245,427	$ 350,783	$ 346,667	$ 143,007	$ 3,714,271	8	
9	Amount Recovered / (Returned) to Customers [1]		$ (156,866)	$ (160,366)	$ (165,267)	$ (156,838)	$ (141,153)	$ (152,842)	$ (91,845)	$ (69,877)	$ (53,760)	$ (159,116)	$ (155,000)	$ 48,659	$ (1,414,272)	9	
10	Illustrative Schedule SG-G5 Monthly Volume															10	9,309,004
11	Monthly Volume	7,325,471	7,045,968	7,162,412	7,325,471	7,045,033	6,523,153	6,912,080	500,000	250,000	500,000	7,120,830	6,983,888	207,660	57,576,494	11	9,309,004
12	Meters		1	1	1	1	1	1	1	1	1	1	1	1	12	12	0.021710249
13	Margin at Schedule SG-G5 Rates															13	
14	BSC	$ 1,000.00	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000		14	
15	Demand	$ 0.00394	28,894	28,894	28,894	28,894	28,894	28,894	28,894	28,894	28,894	28,894	28,894	28,894		15	
16	Commodity	$ 0.01047	73,776	62,601	64,026	61,575	57,014	60,413	42,675	36,286	31,599	62,238	61,041	1,815		16	
17	Total Schedule SG-G5 Margin		$ 103,670	$ 92,495	$ 93,920	$ 91,469	$ 86,907	$ 90,307	$ 72,568	$ 66,180	$ 61,493	$ 92,131	$ 90,934	$ 31,709	$ 973,783	17	
18	Amount Recovered / (Returned) to Customers [2]		$ 244,863	$ 259,538	$ 263,013	$ 257,036	$ 245,912	$ 254,202	$ 210,943	$ 195,364	$ 183,934	$ 258,652	$ 255,733	$ 111,299	$ 2,740,488	18	
19	Customer No. 2															19	
20	Billing Demand / Monthly Volume	22,592,930	5,912,210	13,976,800	22,592,930	18,148,010	2,067,190	18,805,510	17,988,680	3,209,030	4,995,000	16,176,040	14,713,380	1,710,290	140,295,070	20	114,102,360
21	Meters		1	1	1	1	1	1	1	1	1	1	1	1	12	21	0.186697294
22	Contract Margin Included in Rate Design		$ 567,641	$ 626,279	$ 688,927	$ 656,608	$ 539,684	$ 661,388	$ 655,449	$ 547,986	$ 560,972	$ 642,270	$ 631,635	$ 537,089	$ 7,315,929	22	
23	Margin at Schedule SG-G6 Rates															23	
24	BSC	$ 1,000.00	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000		24	
25	Demand	$ 0.02220	501,628	501,628	501,628	501,628	501,628	501,628	501,628	501,628	501,628	501,628	501,628	501,628		25	
26	Commodity	$ 0.03601	212,873	215,266	220,167	211,739	196,054	207,743	146,746	124,777	108,661	214,017	209,901	6,241		26	
27	Total Schedule SG-G6 Margin		$ 715,501	$ 717,894	$ 722,795	$ 714,367	$ 698,681	$ 710,371	$ 649,374	$ 627,405	$ 611,289	$ 716,645	$ 712,529	$ 508,869	$ 8,105,720	27	
28	Amount Recovered / (Returned) to Customers [1]		$ (147,860)	$ (91,616)	$ (33,868)	$ (57,759)	$ (158,997)	$ (48,982)	$ 6,076	$ (79,419)	$ (50,316)	$ (74,375)	$ (80,894)	$ 28,220	$ (789,791)	28	
29	Illustrative Schedule SG-G5 Monthly Volume															29	23,442,710
30	Monthly Volume	27,234,723	7,126,893	16,848,380	27,234,723	21,876,579	2,491,901	22,669,165	1,500,000	250,000	1,000,000	19,499,461	17,736,293	2,061,675	140,295,070	30	23,442,710
31	Meters		1	1	1	1	1	1	1	1	1	1	1	1	12	31	0.019601544
32	Margin at Schedule SG-G5 Rates															32	
33	BSC	$ 1,000.00	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000		33	
34	Demand	$ 0.00394	107,421	107,421	107,421	107,421	107,421	107,421	107,421	107,421	107,421	107,421	107,421	107,421		34	
35	Commodity	$ 0.01047	74,623	62,601	64,026	61,575	57,014	60,413	42,675	36,286	31,599	62,238	61,041	1,815		35	
36	Total Schedule SG-G5 Margin		$ 183,045	$ 171,022	$ 172,448	$ 169,996	$ 165,435	$ 168,834	$ 151,096	$ 144,708	$ 140,021	$ 170,659	$ 169,462	$ 110,236	$ 1,916,963	36	
37	Amount Recovered / (Returned) to Customers [2]		$ 532,456	$ 546,872	$ 550,348	$ 544,370	$ 533,246	$ 541,536	$ 498,278	$ 482,698	$ 471,268	$ 545,986	$ 543,067	$ 398,633	$ 6,188,757	37	

[1] Contract revenue included in rate design minus revenue on the customer's Tariff Schedule SG-G6.
[2] Revenue on Tariff Schedule SG-G6 minus revenue on Tariff Schedule SG-G5 if the customer changes rate schedules.

AFFIRMATION OF A. BROOKS CONGDON

Pursuant to NAC 703.710, A. Brooks Congdon affirms and declares the following:

1. I am over 18 years of age and am competent to testify to facts stated below which are based upon my personal knowledge.
2. That I am the person identified in the foregoing prepared testimony, including, where applicable, any exhibits.
3. That such testimony and exhibits were prepared by me or under my direction.
4. That the information appearing in my testimony and exhibits are true to the best of my knowledge and belief and that if I were asked the questions stated therein under oath, my answers would be the same.
5. Pursuant to NRS 53.045, I declare under penalty of perjury under the law of the State of Nevada that the foregoing is true and correct.

EXECUTED and DATED this 18th day of August, 2023

A. BROOKS CONGDON

IN THE MATTER OF

SOUTHWEST GAS CORPORATION

DOCKET NO. 23-09____

PREPARED DIRECT TESTIMONY

OF

TIMOTHY S. LYONS

ON BEHALF OF

SOUTHWEST GAS CORPORATION

SEPTEMBER 1, 2023

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of
Timothy S. Lyons

BEFORE THE STATE OF NEVADA PUBLIC UTILITIES COMMISSION

Prepared Direct Testimony

of

Timothy S. Lyons

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Timothy S. Lyons. My business address is 3 Speen Street, Framingham, Massachusetts, 01701.

Q. 2 Please describe your current position.

A. 2 I am a Partner at ScottMadden, Inc. ("ScottMadden").

Q. 3 Please summarize your educational background and professional experience.

A. 3 My educational background and professional experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before a regulatory commission?

A. 4 Yes, I have previously sponsored testimony before 25 regulatory commissions, including the Public Utilities Commission of Nevada (Commission). A summary of my qualifications is included in Appendix A.

Q. 5 What is the purpose of your pre-filed direct testimony in this proceeding?

A. 5 The purpose of my pre-filed direct testimony is to sponsor Southwest Gas's (Southwest Gas or the Company) proposed rates for the Company's two Nevada rate jurisdictions: Southern Nevada and Northern Nevada. Each rate jurisdiction has its own set of statements and schedules. Furthermore, each statement and schedule discussed in this testimony is applicable to the Southern Nevada and Northern Nevada rate jurisdictions, unless otherwise indicated.

The testimony includes:

- Development of two CCOSS for each rate jurisdiction.
    - The first CCOSS (Version 1) allocates the Company's overall cost of service to each of the Company's tariff rate classes, excluding "recourse" rate classes SG-G5, SG-G6, and NG-G5.[1]
    - The second CCOSS (Version 2) is generally consistent with the first CCOSS (Version 1) except the second CCOSS (Version 2) allocates the Company's overall cost of service to each of the Company's tariff rate classes, including the recourse rate classes.
- Development of the proposed tariff rates for non-recourse rate classes is based on the results of the CCOSS (Version 1). The testimony also includes a bill comparison between the proposed and current tariff rates for the non-recourse rate classes.
- Development of the proposed tariff rates for recourse rate classes is based on the results of the CCOSS (Version 2). The proposed recourse rates represent the otherwise applicable cost of service rates for current recourse rate customers as well as customers under a contract that considers special services and/or discounted rates (Contract Customers).
- Development of the lead lag study used to support the cash working capital requirement.

[1] CCOSS (Version 1) excludes Schedules SG-G5. SG-G6, and NG-G5 since those Schedules reflect "recourse" rates that are based on the cost of serving Contract Customers. Presently, there is one customer taking service under Schedule SG-G5 and another customer taking service under Schedule SG-G6.

Q. 6 Please summarize your testimony.

A. 6 My testimony describes the results of the Company's CCOSS (Version 1) that shows the current rate design produces a disparity in class rates of return ("ROR") for the Southern and Northern Nevada rate jurisdictions, respectively, as shown in Figures 1 and 2 (below). The Figures summarize each rate class's "unit" ROR (where "unit" ROR is the class ROR as a factor of the system or overall ROR).

Figure 1: Class ROR vs. System ROR (Southern Nevada)

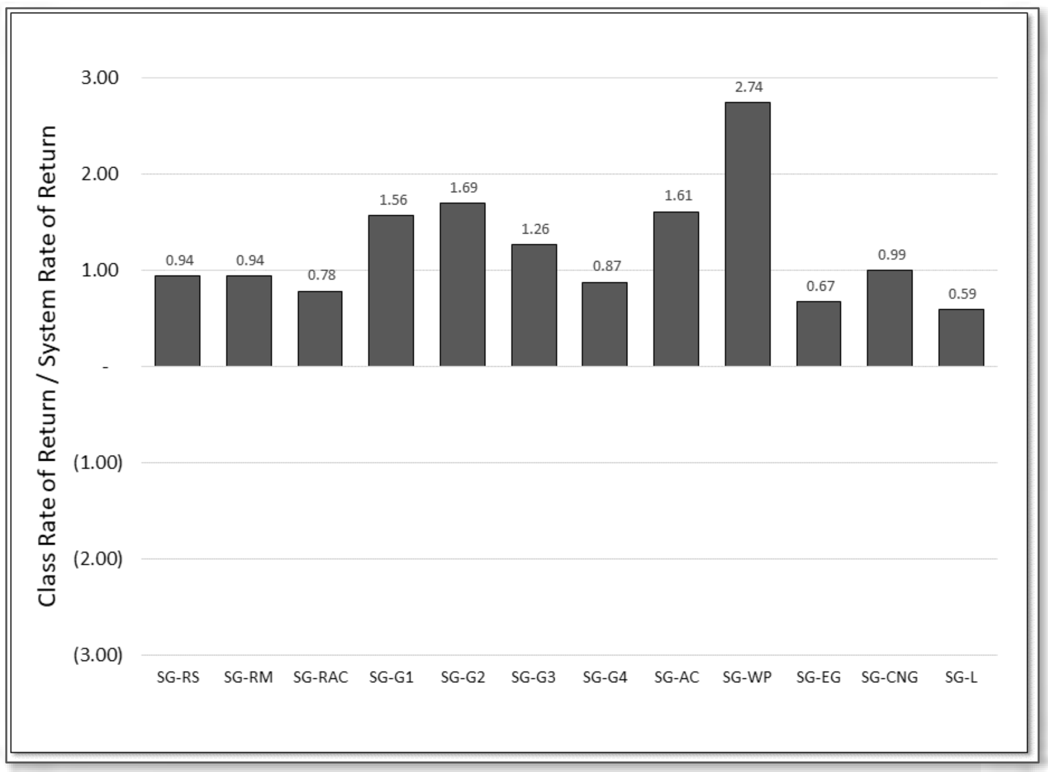

Figure 1 (Southern Nevada) shows that some rate classes yield RORs at current rates that are less than the system ROR (i.e., the unit ROR is less than 1.00), indicating the current rates recover less than their cost of service. The remaining rate classes yield RORs that are higher than the system ROR (i.e., the unit ROR

is greater than 1.00), indicating the current rates recover more than their cost of service.

Figure 2: Class ROR vs. System ROR (Northern Nevada Jurisdiction)

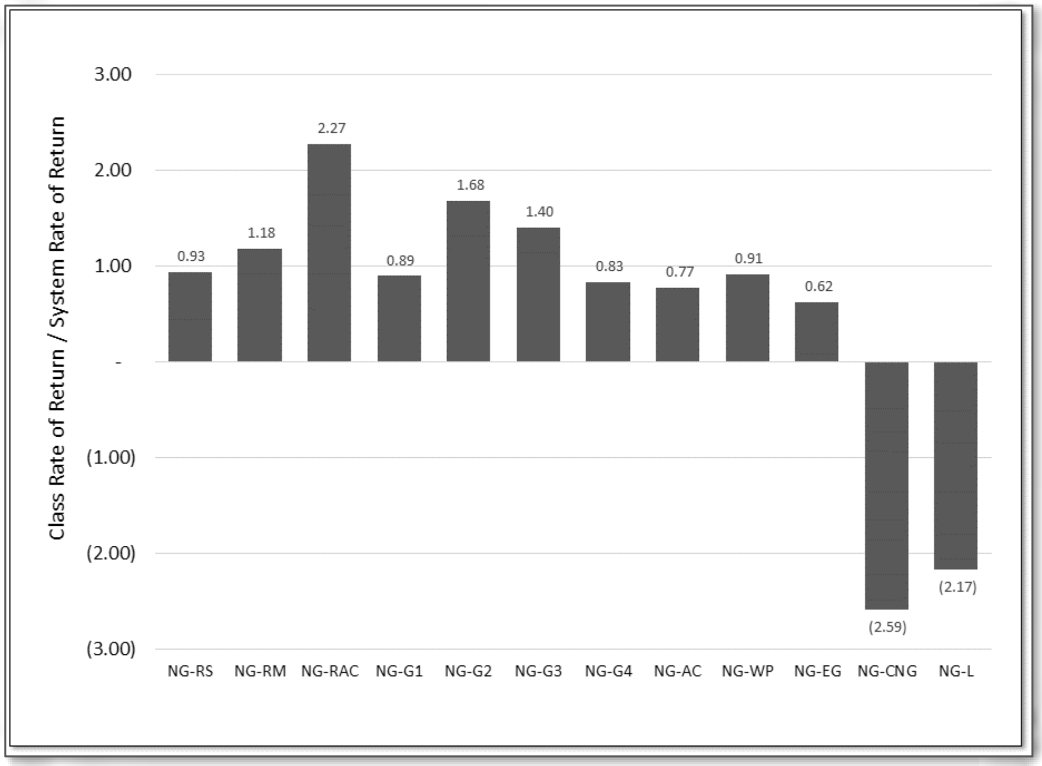

Figure 2 (Northern Nevada) also shows some rate classes yield RORs at current rates that are lower than the system ROR (i.e., the unit ROR is lower than 1.00), indicating the rates recover less than their cost of service. The remaining rate classes yield RORs that are higher than the system ROR (i.e., the unit ROR is more than 1.00), indicating the current rates recover more than their cost of service.

The CCOSS was developed by identifying the relationship between the service requirements for each rate class and their respective cost drivers. This approach is well established in industry literature. The CCOSS was developed consistent with the methodologies approved by the Commission in the

Company's most recent, fully litigated general rate case proceeding in Docket No. 20-02023.

The results of the Company's CCOSS were used to evaluate the extent to which the current rates are fair and equitable, that is, when class RORs are equal to the system ROR. The results of the CCOSS were then used to inform the proposed rates.

The Company's proposed rates reflect three important rate design principles: (a) rates should recover the overall cost of providing service; (b) rates should be fair, minimizing inequities to the maximum extent possible; and (c) rate changes should be tempered by rate continuity concerns.

The Company prepared a bill impact analysis to evaluate the impact of the proposed rate changes. The bill impact analysis compares the impacts of the proposed rate changes on customer bills for an average summer and an average winter month. The analysis also compares bills at 50.0 percent of average monthly summer and winter use and 150.0 percent of average monthly summer and winter use.

The impact of the proposed rate increase on Residential monthly bills varies depending on jurisdiction and season, as shown in Figure 3 (below).

Figure 3: Comparison of Proposed Residential Bill vs. Current Bill

Bill Impact Analysis: Single-Family Residential Gas Service	Monthly Consumption (Therms)	Month Bill ($) Proposed Rates	Month Bill ($) Current Rates	Increase / (Decrease) Dollars ($)	Increase / (Decrease) Percent (%)
Southern Nevada					
50 Percent of Average Use	10	$ 30.76	$ 28.70	$ 2.06	7.18%
Average Summer Use	19	48.73	44.80	3.93	8.77%
150 Percent of Average Use	29	68.69	62.70	5.99	9.55%
50 Percent of Average Use	30	$ 70.69	$ 64.49	$ 6.20	9.61%
Average Winter Use	60	130.58	118.18	12.40	10.49%
150 Percent of Average Use	90	190.46	171.86	18.60	10.82%
Northern Nevada					
50 Percent of Average Use	12	$ 34.87	$ 33.80	$ 1.07	3.17%
Average Summer Use	24	58.94	56.80	2.14	3.77%
150 Percent of Average Use	36	83.01	79.80	3.21	4.02%
50 Percent of Average Use	53	$ 117.11	$ 112.39	$ 4.72	4.20%
Average Winter Use	106	223.42	213.97	9.45	4.42%
150 Percent of Average Use	159	329.73	315.56	14.17	4.49%

The Figure shows the proposed single family residential rates will increase winter bills for the average Southern Nevada customer using 60 therms in a winter month by $12.40 per month, or 10.49 percent, and for an average Northern Nevada customer using 106 therms in a winter month by $9.45 per month, or 4.42 percent. The bills reflect the currently effective Tariff Energy rate.

The Company also developed a second CCOSS (Version 2) for each jurisdiction that includes the recourse rate classes. The proposed recourse rates were based on the results of the CCOSS (Version 2). The recourse rates represent otherwise applicable cost of service rates for the current recourse rate customers and Contract Customers.

II. OVERVIEW OF THE CCOSS

Q. 7 What is the purpose of a CCOSS?

A. 7 The purpose of a CCOSS is to allocate a utility's overall cost of service to each rate class in a manner that reflects its underlying cost of service. The CCOSS sponsored in this testimony was developed by identifying the relationship between the service requirements for each rate class and their respective cost drivers. This approach is well established in industry literature[2] and is consistent with the Company's approach adopted by the Commission in Docket No. 20-02023 and the Company's approach in its last general rate case filing in Docket No. 21-09001.

Q. 8 How was the CCOSS developed?

A. 8 As stated earlier, the CCOSS was developed utilizing methodologies adopted by the Commission in Docket No. 20-02023. Each rate base and expense item in the CCOSS was assigned to a rate class based on the three-step process described below. Two CCOSS studies were developed for each of the Company's two rate jurisdictions: Southern and Northern Nevada. The first CCOSS (Version 1) was used to develop non-recourse tariff rates while the second CCOSS (Version 2) was used to develop recourse tariff rates.

Q. 9 What was the approach used to develop the CCOSS?

A. 9 The approach used to develop the CCOSS consisted of a three step process: (1) functionalization, or cost assignment into functional categories, largely related to production, storage, transmission and distribution; (2) classification, or cost assignment according to whether costs are related to serving peak

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[2] *See* "Principles of Public Utility Rates" by James C. Bonbright.

demands, customer service requirements, or commodity demands; and (3) allocation, or cost assignment to rate classes consistent with the functionalization and classification steps described above.

Q. 10 What data was used to prepare the CCOSS?

A. 10 The CCOSS was based on data for the period December 1, 2022 through November 30, 2023.[3] The CCOSS includes the number of customers, usage and revenues by rate class. Usage reflects normal weather conditions. Revenues at present rates reflect the Company's current authorized margin rates. The CCOSS also includes rate base items, including intangible plant, distribution, and general plant-in-service as well as (a) additions to rate base, including cash working capital, and materials and supplies, and (b) reductions to rate base, including deferred income taxes, accumulated deferred income taxes, and customer deposits. The CCOSS also includes operations and maintenance (O&M) expenses, including distribution, customer service, customer account, sales, and administrative and general expenses as well as taxes other than income, such as payroll and property taxes, and income taxes.

Q. 11 What is Functionalization?

A. 11 Functionalization consists of separating rate base and expense items into operational components that include production, storage, transmission, and distribution.

[3] The period June 1, 2023 through November 30, 2023 represents the "Certification" period.

Q. 12 Please describe the functionalization process used to develop the CCOSS.

A. 12 The functionalization process used to develop the CCOSS followed the Federal Energy Regulatory Commission's (FERC) Uniform System of Accounts. Southwest Gas does not have production or storage facilities in its Nevada service areas but has transmission facilities in its Southern Nevada service area. Gas commodity costs, which include production and pipeline charges and related costs, are recovered through the Base Tariff Energy Rate (BTER) and are not included in the CCOSS.

Q. 13 What is Classification?

A. 13 Classification consists of separating rate base and expense items into categories based on cost drivers.

Q. 14 Please describe the classification process used to develop the CCOSS.

A. 14 The CCOSS classified costs into one of three categories:

- Customer – costs that vary with customer access to the natural gas system as well as on-going customer services, such as meter reading and billing services.
- Demand – costs that vary with customer peak demand requirements.
- Commodity – costs that vary with customer commodity requirements.

In some cases, costs were classified into only one of the three categories. The cost of meter reading, for example, was classified as customer. Meter reading costs vary with the number of customers. In other cases, costs were classified into more than one category. The cost of distribution mains, for example, was classified as both customer and demand. Distribution main costs vary with the number of customers and peak day demands.

Q. 15 Please describe the classification of distribution mains.

A. 15 Distribution mains typically represent the largest plant investment for a natural gas utility. The classification of distribution mains reflects two cost drivers. The first driver is the number of customers. Distribution mains are designed to provide customer access to the natural gas system. The second driver is peak day demand. Distribution mains are designed to meet customer demands on the design day.[4]

The classification of distribution mains in the CCOSS is consistent with the Company's approach approved by the Commission in Docket No. 20-02023, which classifies distribution mains as 50 percent customer and 50 percent demand.

Q. 16 Is there a strong statistical relationship between the miles of distribution main and customers?

A. 16 Yes. There is a strong statistical relationship between the miles of distribution main and number of customers, as shown in Figures 4 and 5 (below) for Southern and Northern Nevada, respectively.

[4] Design day demand is the highest estimated gas demand for a 24-hour period and is used as a basis for designing the capacity of the transmission and distribution system.

Figure 4: Customers and Miles of Distribution Main (Southern Nevada)

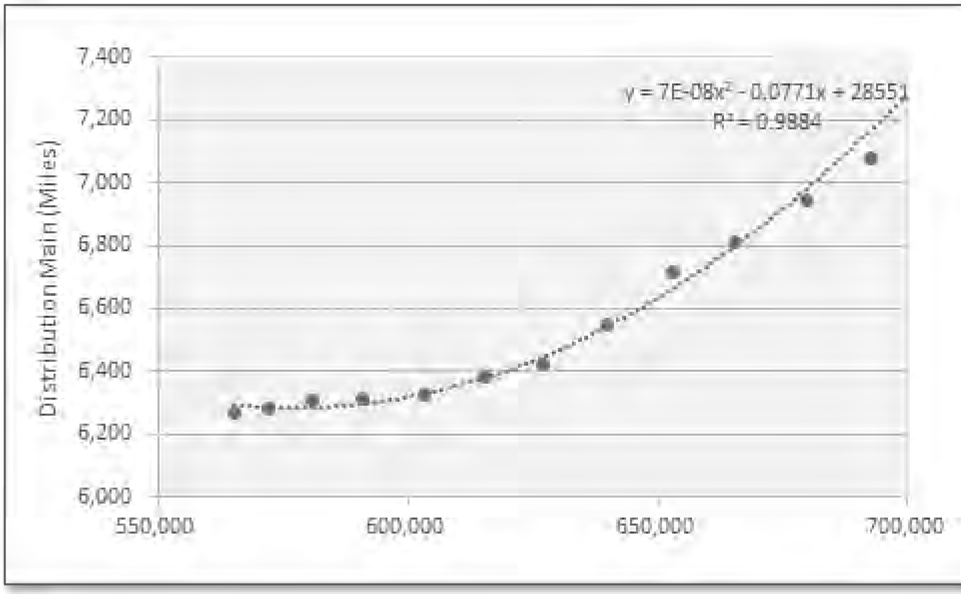


Figure 4 shows the results of a regression analysis for Southern Nevada that measures the relationship between number of customers and miles of distribution main. Regression analysis produces an r-square that measures the relationship between the independent variable (in this case number of customers) and dependent variable (in this case miles of distribution main). The regression analysis produced an r-square of 0.9884, which indicates 98.84 percent of the increase in distribution mains for Southern Nevada can be explained by increases in the number of customers.

Figure 5: Customers and Miles of Distribution Main (Northern Nevada)

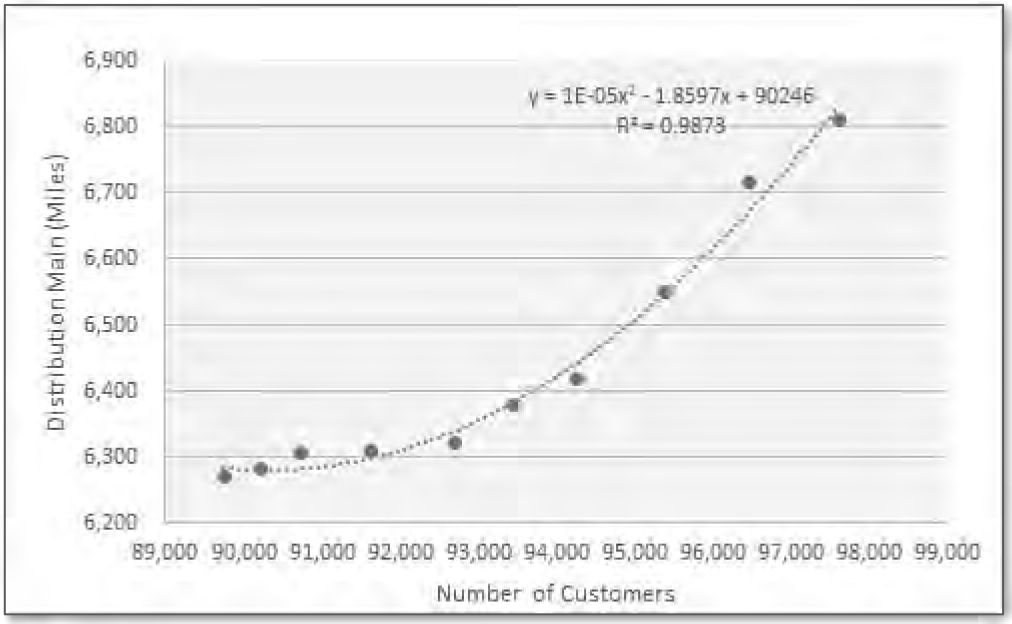


Figure 4 shows the results of a regression analysis for Southern Nevada that measures the relationship between number of customers and miles of distribution main. Figure 5 shows an r-square of 0.9873, which indicates 98.73 percent of the increase in distribution mains for Northern Nevada can be explained by increases in the number of customers.

Q. 17 Did the Company evaluate the reasonableness of its approach in classifying distribution mains as 50 percent customer and 50 percent demand?

A. 17 Yes. The Company first evaluated the relationship between number of customers and miles of distribution main, as discussed above.

In addition, for comparison purposes, the Company performed two additional analyses that are recognized approaches to classify distribution mains. Both methods are recognized by the National Association of Regulated Utility Commissions ("NARUC"). NARUC states, "One argument for inclusion of distribution related items in the customer cost classification is the 'zero or minimize size main theory.' This theory assumes that there is a zero or minimum size main necessary to connect the customer to the system and thus affords the customer an opportunity to take service as he so desires.

Under the minimum size main theory, all distribution mains are priced out at the historical unit cost of the smallest main installed in the system and assigned as customer costs. The remaining book cost of distribution mains is assigned to demand. The zero-inch main method would allocate the cost of a theoretical main of zero-inch diameter to the customer function, and allocate the remaining costs associated with mains to demand"[5]

Q. 18 What is the zero-inch or zero-intercept method?

A. 18 The zero-inch or zero-intercept method represents the cost of connecting customers to the distribution system with a hypothetical "zero-size" main. The method is based on a regression analysis that examines the relationship between distribution main sizes and their average costs. The regression analysis produces an intercept that represents the average cost of a theoretical zero-inch distribution main, or a distribution main that serves no demand. The zero-inch main costs are classified as customer, while costs exceeding the zero-inch main cost are classified as demand.

[5] NARUC Gas Distribution Rate Design Manual. Pg. 22-23

Q. 19 How was the estimated cost of a zero-inch main determined?

A. 19 The estimated cost of a zero-inch main was based on a regression analysis of distribution main sizes and their average costs. The regression analysis produced an intercept that represented the average cost ($ per foot) of a theoretical zero-inch distribution main. Multiplying the average cost of a zero-inch main by the actual number of feet in the system yielded a theoretical cost of a system comprised of zero-inch mains. The customer portion of distribution mains was calculated as the ratio of the cost of a zero-inch main to the total cost of the mains system.

Q. 20 What were the results of the zero-inch method?

A. 20 The results of the zero-inch method show the customer portion of the mains investment is 37.63 percent and 39.82 percent, respectively, for Southern and Northern Nevada, as shown in Figures 6 and 7 (below).

Figure 6: Results of Zero-Inch Analysis (Southern Nevada)

Southwest Gas Southern Nevada Zero-Intercept Analysis		
Total Quantity (Plastic)		34,647,463
Zero-Intercept Unit (Plastic)	$	19.60
Total Quantity (Steel)		1,996,156
Zero-Intercept Unit (Steel)	$	48.42
Zero-Intercept System	$	775,821,878
Total System Costs	$	2,061,516,758
Customer-Related		**37.63%**

Figure 6 shows for Southern Nevada the estimated cost of a zero-inch plastic and steel main was $19.60 per foot and $48.42 per foot, respectively.

Multiplying the estimated cost of a zero-inch main by the actual number of feet in the system yielded a theoretical cost of a system comprised of zero-inch mains of $775.8 million. The customer portion of distribution mains of 37.63 percent was calculated as the ratio of the cost of zero-inch mains of $775.8 million to the total cost of the mains system of $2.1 billion. The demand portion of the total cost of the mains system was 63.37 percent.

Figure 7: Results of Zero-Inch Analysis (Northern Nevada)

Southwest Gas Northern Nevada Zero-Intercept Analysis		
Total Quantity (Plastic)		9,318,731
Zero-Intercept Unit (Plastic)	$	10.80
Total Quantity (Steel)		1,757,505
Zero-Intercept Unit (Steel)	$	13.33
Zero-Intercept System	$	124,090,489
Total System Costs	$	311,633,424
Customer-Related		39.82%

Figure 7 shows for NNV the estimated cost of a zero-inch plastic and steel main was $10.80 per foot and $13.33 per foot, respectively. Multiplying the estimated cost of a zero-inch main by the actual number of feet in the system yielded a theoretical cost of a system comprised of zero-inch mains of $124.1 million. The customer portion of distribution mains of 39.82 percent was calculated as the ratio of the cost of zero-inch mains of $124.1 million to the total cost of the mains of $311.6 million. The demand portion of the mains investment was 60.18 percent.

Q. 21 How was the estimated cost of a minimum size main determined?

A. 21 The estimated cost of a minimum size main was based on a two-inch plastic main, which is the smallest main commonly installed by the Company. Multiplying the estimated cost of two-inch plastic main by the actual number of feet in the system yielded the theoretical cost of a system comprised of two-inch mains. The customer portion of distribution mains was calculated as the ratio of the cost of a two-inch mains system to the cost of the total mains system.

Q. 22 What were the results of the minimum size main method?

A. 22 The results of the minimum size main method show the customer portion of the mains investment is 66.49 percent and 73.88 percent, respectively, for Southern and Northern Nevada, as shown in Figures 8 and 9 (below).

Figure 8: Results of Minimum Size Main Method (Southern Nevada)

Southwest Gas Southern Nevada Minimum System Analysis		
Total Quantity		36,744,610
Min-System Unit Costs	$	37.92
Min-System Costs	$	1,393,517,144
Total System Costs	$	2,095,985,043
Customer-Related		66.49%

Figure 8 shows for Southern Nevada the estimated cost of a minimum size main is $1.4 billion, which is based on the estimated cost of a two-inch plastic main and the actual number of feet in the system. The customer portion of distribution mains of 66.49 percent was calculated as the ratio of the cost of minimum size main of $1.4 billion to the total cost of the mains of $2.1 billion. The demand portion of the mains investment was 33.51 percent.

Figure 9: Results of Zero-Inch Analysis (Northern Nevada)

Southwest Gas Northern Nevada Minimum System Analysis		
Total Quantity		11,076,243
Min-System Unit Costs	$	20.79
Min-System Costs	$	230,242,316
Total System Costs	$	311,637,212
Customer-Related		**73.88%**

Figure 9 shows for Northern Nevada the estimated cost of a minimum size main is $230.2 million and is based on the estimated cost of a two-inch plastic main and the actual number of feet in the system. The customer portion of distribution mains of 73.88 percent was calculated as the ratio of the cost of minimize size main of $230.2 million to the total cost of the mains of $311.6 million. The demand portion of the mains investment was 26.12 percent.

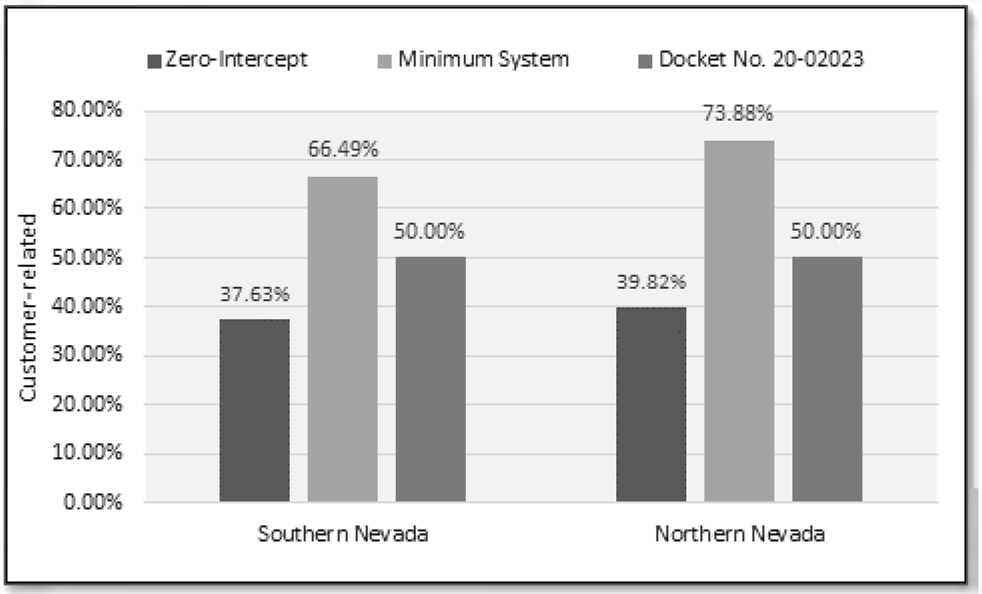
Q. 23 What is the Company's recommendation regarding the classification of distribution main?

A. 23 The Company recommends classifying distribution mains in this proceeding as 50.00 percent customer and 50.00 percent demand (50/50). First, the 50/50 approach is consistent with the approach approved by the Commission in the Company's most recent, fully litigated rate case proceeding, and is consistent with the approach the Company has used for many years.[6] Second, the 50/50 approach is within the range of results utilizing the zero-inch and minimum size system methods, as shown in Figure 10 (below). As discussed earlier, the zero-

[6] The Company also utilized the 50/50 approach in its most recent general rate case filing in Docket No. 21-09001.

inch and minimum size system methods are recognized in the industry as approaches for classifying distribution main. This result is consistent with paragraph 490 of the Commission's September 25, 2020 Order in Docket 20-02023 where the Commission determined that a 50/50 approach reflects how the Company incurs costs while following an industry recognized method.

Figure 10: Summary of Distribution Mains Classification Methods



Q. 24 Please discuss the classification of other rate base items.

A. 24 Other rate base items were similarly classified based on their underlying cost drivers. For example, meter cost, meter installation, service cost, and regulator investments were classified as customer since they provide customer access to the natural gas system. Rate base items not directly associated with one of the classification categories, such as general plant, were classified through a composite classifier based on the related costs.

. . .

. . .

Q. 25 Please discuss classification of operations and maintenance (O&M) expenses.

A. 25 O&M expenses were classified similar to their respective plant items. For example, Maintenance of Services (Account 892) was allocated based on the allocation of Services plant (Account 380).

O&M expense items not directly associated with one of the classification categories, such as administrative and general expenses, were classified through a composite classifier based on related costs.

Q. 26 What is Allocation?

A. 26 Allocation consists of assigning rate base and expense items to individual rate classes based on allocators that reflect their underlying cost of service.

Q. 27 Please describe the allocation process used to develop the CCOSS.

A. 27 Costs were allocated to each rate class based on the costs incurred to serve that rate class. In short, cost allocation follows cost causation. This is an established industry approach and is consistent with the Company's approach in Docket No. 20-02023, the Company's most recent, fully litigated rate case proceeding. This approach requires development of cost allocators that reflect the design of the natural gas system.

The CCOSS in this filing was developed based on three types of allocators:

1. Class determinants – class characteristics, such as number of customers, usage, and peak demands by rate class.
2. Special studies – detailed analysis of specific plant or expense items, such as meters and services.
3. Internal – composite of how other costs are allocated.

Q. 28 Please describe the process used to develop the demand allocator.

A. 28 The demand allocator is based on peak month throughput.[7] The allocator reflects each rate class's responsibility to peak month demands. The approach is consistent with the method approved by the Commission in the Company's most recently litigated general rate case proceeding (Docket No. 20-02023) as well as the approach utilized in its most recent general rate case filed in Docket No. 21-09001.

Q. 29 Please describe the process used to develop the special studies allocators.

A. 29 There were three special studies developed to allocate meter investments, meter installations, service investments, regulators, and industrial customer investments. The allocators were developed separately for each of the Company's rate jurisdictions.

- <u>Meters and Meter Installation investments</u> were allocated to each rate class based on the average installed cost of a meter in each rate class.
- <u>Service investments</u> were allocated to each rate class based on the average installed cost of a service line in each rate class.
- <u>Industrial customer investments</u> were allocated to the large industrial rate classes since the investments are used to serve those customers.

Q. 30 Please describe the process to allocate rate base items to each rate class.

A. 30 The allocation of rate base to each rate class is summarized in the filed Statement N schedules. Plant investment by individual FERC account was

[7] The peak month for Southern Nevada in the CCOSS (Version 1) and CCOSS (Version 2) was, respectively, January and December. The peak month for Northern Nevada in the CCOSS (Version 1) and CCOSS (Version 2) was January.

allocated to each rate class based on an allocator that most closely reflects the underlying cost driver. Additions and deductions to net plant investment were allocated to each rate class based on an allocator that most closely reflects the underlying cost driver to form rate base.

In general, the Company's allocation methodologies were consistent with those adopted by the Commission in Docket No. 20-02023 and what the Company utilized in its last general rate case filing in Docket No. 21-09001.

Q. 31 Please describe allocation of O&M expenses to the customer classes.

A. 31 The allocation of O&M expenses to each rate class is summarized in the filed Statement N schedules. As discussed earlier, the special studies were used in some cases to allocate certain costs to each rate class.

In general, the Company's allocation methodologies were consistent with those adopted by the Commission in Docket No. 20-02023., including allocation of Other Gas Supply Expenses (FERC Account 813) and Distribution System Load Dispatching Expenses (FERC Account 871) based on rate class throughput.[8]

III. RESULTS OF THE CCOSS (VERSION 1)

Q. 32 Please summarize the results of the Company's CCOSS (Version 1).

A. 32 The results of CCOSS (Version 1) are shown in Figures 1 and 2 (above). The Figures compared the calculated ROR for each rate class based on current rates to the system or overall ROR.

[8] Order in Docket No. 20-02023, paragraph 501 and paragraph 510.

Q. 33 What conclusions can be reached when a rate class ROR is higher or lower than the system ROR?

A. 33 If a rate class produces a ROR that is lower than the system ROR, then the revenues recovered from the rate class are less than the cost of service. Conversely, if a rate class produces a ROR that is higher than the system ROR, then the revenues recovered from the rate class are more than the cost of service. As discussed below, the CCOSS (Version 1) results were used to inform the proposed rate design for each rate class.

IV. DEVELOPMENT OF THE RATE DESIGN

Q. 34 Please provide an overview of the Company's rates.

A. 34 Customers are presently served under their applicable rate classes based on the type of service and load characteristics.[9] The Company's current rate structure consists of delivery charges that recover delivery costs, and gas cost charges that recover purchased gas costs and several surcharges. The delivery charges include a monthly Basic Service Charge and commodity charge per Therm. The General Service-4, 5, and 6 schedules also include a demand charge that recovers the delivery cost of service.

Q. 35 Please describe the principles used to guide the proposed rate design.

A. 35 The proposed rate design was guided by several principles common throughout the industry, including: (a) rates should recover the overall cost of providing

[9] Excluding Contract Customers.

service; (b) rates should be fair, minimizing inequities to the maximum extent possible; and (c) rate changes should be tempered by rate continuity concerns.[10]

Because these principles can conflict, the rate design process also includes a level of judgment to balance these principles.

Q. 36 How were the principles applied to the proposed rate design?

A. 36 First, rates were designed to recover the overall cost of service. This was done by developing customer and usage charges based on test year bills and usage. In addition, rates were designed to be fair and equitable. This was done by setting revenue targets that reflect each rate class's cost of service subject to rate continuity considerations. As discussed earlier, the results of the CCOSS show that some rate classes produce less than the overall ROR. The goal of the proposed rate design was to eliminate that deficiency, subject to rate continuity considerations.

Q. 37 What is the total revenue requirement that you used as a starting point for the rate design?

A. 37 The total revenue requirement used as a starting point for the rate design is described in the prepared direct testimony of Company witness Randi L. Cunningham.

Q. 38 Please describe the process used to set the revenue targets for each rate class.

A. 38 The proposed revenue targets for each rate class were based on the results of the CCOSS, adjusted to reflect a 10.0 percent cap on cost allocation changes

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[10] See Bonbright, James, Danielsen, Albert, and Kamerschen, David. "Principles of Public Utility Rates." Public Utilities Reports, Inc. pp. 377-407 (2nd Ed. 1988).

to address rate continuity consideration. The 10.0 percent cap is consistent with the cap used in the Company's most recent rate case as well.

Q. 39 Please describe the proposed rate design for each rate class.

A. 39 The proposed rate design for each rate class is provided in the filed Statement J-1 schedules. The proposed Residential rate design is described below.

Basic Service Charge

The Company proposes to maintain the current residential basic service charge. The current single-family basic service charge in both Southern and Northern Nevada is $10.80 per month. The current multifamily basic service charges for Southern and Northern Nevada are $9.00 per month, and $10.80 per month, respectively.

Commodity Charges

The Company proposes a residential commodity charge that recovers delivery costs not recovered through the Basic Service Charge. The Company proposes a commodity charge for delivery service of $0.65714 per therm for single family residential customers and $0.68436 per therm for multi-family residential customers in Southern Nevada. In Northern Nevada, the Company proposes a commodity charge for delivery service of $0.44516 per therm for single family residential customers and $0.44851 per therm for multi-family residential customers.

Q. 40 What rate structure is the Company proposing for the general service customers?

A. 40 The Company proposes to retain its existing rate structure for the general service customers. The three General Service rate classes (G1, G2 and G3) have a two-part rate structure, consisting of a monthly Basic Service Charge and a single commodity charge. The remaining General Service rate classes (G4, G5, and G6) have a three-part rate structure, consisting of a monthly Basic Service Charge, a single commodity charge calculated to recover 50 percent of the class revenue requirement[11], and a demand charge based on the customers' highest monthly gas demand in the past 12 months.

Q. 41 Which schedules evaluate the impact of the proposed rate design on customers?

A. 41 Statement O schedules evaluate the impact of the proposed rate design on customers. The schedules compare average customer bills at the present and proposed base rates. The impact of the proposed base rate increases on residential monthly bills varies depending on jurisdiction and season, as shown in Figure 3 (above).

Q. 42 Has Southwest Gas included schedules showing the proposed revenue changes by rate schedule?

A. 42 Yes. Statement J schedules show the proposed revenue changes by rate schedule.

V. DEVELOPMENT OF THE CCOSS (VERSION 2)

Q. 43 Please describe the overall development of the CCOSS (Version 2).

A. 43 The CCOSS (Version 2) is generally consistent with the CCOSS (Version 1) except CCOSS (Version 1) allocated the Company's overall cost of service to only the Company's non-recourse rates while the CCOSS (Version 2) allocated the Company's overall cost of service to the Company's non-recourse and

[11] See paragraph 23 of the March 22, 2022 Order in Docket No. 21-09001 accepting the parties' Stipulation.

recourse rates. The CCOSS (Version 2) followed the same three-step process as the CCOSS (Version 1) for both the Southern Nevada and Northern Nevada rate jurisdictions.

Q. 44 Please describe the CCOSS (Version 2) for the Southern Nevada rate jurisdiction.

A. 44 The CCOSS (Version 2) for the Southern Nevada rate jurisdiction included five Contract Customers, one existing GS-G5 customer and one existing GS-G6 customer. The CCOSS (Version 2) was developed based on the methodologies adopted by the Commission in Docket No. 20-02023. Specifically, the CCOSS (Version 2) includes allocation of system distribution costs, consistent with the Commission's Order in Docket No. 20-02023.[12]

Q. 45 Please describe the development of the CCOSS (Version 2) for Northern Nevada rate jurisdiction.

A. 45 The CCOSS (Version 2) for the Northern Nevada rate jurisdiction included one Contract Customer.[13] The CCOSS (Version 2) was developed based on the methodologies adopted by the Commission in Docket No. 20-02023. Specifically, the CCOSS (Version 2) includes allocation of system distribution costs, consistent with the Commission's Order in Docket No. 20-02023.

Q. 46 Please describe the overall results of the Company's CCOSS (Version 2).

A. 46 Summaries of the allocation of rate base, expenses, and the resulting overall cost of service to the contract customers and the existing SG-5 and SG-6

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[12] Id. at paragraphs 562 through 575.

[13] In Docket No. 20-02023, the Company also included five Direct Connect customers to the Northern Nevada CCOSS (Version 2). The Company discontinued service to these customers in compliance with the Commission Order in Docket 20-02023, paragraph 464.

customers are shown in Exhibit No. __(TSL-1) to my direct testimony, Sheets 1 and 2 for Southern Nevada and Northern Nevada respectively.

VI. DEVELOPMENT OF PROPOSED RECOURSE RATES

Q. 47 Please describe development of the proposed recourse rates.

A. 47 The overall approach to develop the recourse rates was consistent with the methodologies adopted by the Commission in Docket No. 20-02023 and includes recovering 50 percent of the class revenue requirement in the commodity charge.[14] Exhibit No. ___(TSL-2) and Exhibit No. __(TSL-3) provide a calculation of the proposed recourse rates. In addition, the Company prepared minimum and maximum rates for the recourse rate schedules in this filing, in compliance with Commission directive in Special Contract proceeding (Docket No. 19-02024) discussed earlier.

Q. 48 Please describe development of the proposed minimum and maximum rates for recourse rates SG-G5, SG-G6 and NG-G5.

A. 48 The proposed minimum rates for recourse rates SG-G5, SG-G6 and NG-G5 were based on the results of the CCOSS (Version 2) and reflect 50 percent of the proposed demand and commodity charges for those schedules as shown in Figure 13 (below).

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[14] See paragraph 23 of the Order in Docket No. 21-09001.

Figure 13: Minimum Rates for SG-G5, SG-G6 and NG-G5

Minimum and Maximum Rates ($ per Therm)		Minimum Rates		Maximum Rates
Southern Nevada				
SG-G5				
Basic Service Charge	$	1,000.00	$	1,000.00
Transportation Charge		500.00		500.00
Demand Charge	$	0.00198	$	0.00396
Commodity Charge		0.00525		0.01050
SG-G6				
Basic Service Charge	$	1,000.00	$	1,000.00
Transportation Charge		500.00		500.00
Demand Charge	$	0.01114	$	0.02227
Commodity Charge		0.01806		0.03612
Northern Nevada				
NG-G5				
Basic Service Charge	$	1,000.00	$	1,000.00
Transportation Charge		500.00		500.00
Demand Charge	$	0.01011	$	0.02022
Commodity Charge		0.01252		0.02504

The Figure shows for Southern Nevada, for example, the SG-G5 minimum demand and commodity charges are, respectively, $0.00198 per therm and $0.00525 per therm.

VII. IMPACT ON CUSTOMER RATES OF INCORPORATING A WARMING TREND

Q. 49 Please describe the impact on customer rates of incorporating a warming trend in the weather normalization adjustment, consistent with Southwest Gas' compliance with the Commission's Order in Docket No. 21-09001.[15]

A. 49 Southwest Gas witness Brandy Little's prepared direct testimony describing how a warming weather trend would impact the Company's weather normalization adjustment. The testimony shows utilizing a warming weather trend would result in lower customer volumes than the Company's current 10-year normal weather adjustment. Lower customer volumes, all other things the same, would result in higher per therm rates to recover the Company's revenue requirements.

Q. 50 Does a warming weather trend used in the weather normalization adjustment provide a more reasonable basis to establish rates than the Company's current 10-year normal weather adjustment?

A. **50** No. From a ratemaking perspective, a weather normalization method that best reflects weather during the effective period of the Company's new rates should be utilized to establish those rates. For the Company's Southern Nevada service territory, the Company's current 10-year normal weather adjustment better reflects weather during the effective period of the new rates than a weather normalization adjustment that reflects a warming weather trend.

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[15] "In its next general rate case, Southwest Gas Corporation shall include the following weather normalization information: (a) A proposed method to incorporate the warming trend into the weather normalization process and support the proposal with an analysis containing at least 20 years of historical data, (b) A weather normalization adjustment to the transportation volumes if the transportation service customer is in a similar category as a weather-normalized general sales service category, (c) A weather normalization adjustment to the commercial A/C schedule, and (d) A weather normalization adjustment to the transportation small electric generation service schedule and the contracts for special services transportation electric generation service schedule." Order in Docket No. 21-09001, paragraph 7.

Q. 51 What is Southwest Gas' recommendation to the Commission regarding whether the warming weather trend should be utilized in its weather normalization process?

A. **51** For the reasons set forth above—specifically, to utilize a normal weather adjustment method that best reflects weather during the effective period of the rates—Southwest Gas supports continuation of the current 10-year normal weather adjustment process.

VIII. LEAD-LAG STUDY

Q. 52 Please describe the development of the lead lag study.

A. **52** The lead-lag study compares differences between the Company's revenue lag and expense leads. The revenue lag measures the number of days from the time natural gas service is provided to customers to the time payment is received from customers. The expense leads measure the number of days from the time goods and services used to provide natural gas service are provided to the Company to the time payments are made by the Company for those goods and services. The lag and leads are measured in days for individual expenses, converted to "dollar-days" that reflect a weighting by expense amount, and then summed across all expenses. Schedule G-5 provides the results of the Company's lead-lag study for the test year.

Q. 53 Does this conclude your prepared direct testimony?

A. **53** Yes, it does.

Summary of Qualifications

Tim Lyons is a partner with ScottMadden with more than 30 years of experience in the energy industry. Tim has held senior positions at several gas utilities and energy consulting firms. His experience includes rates and regulatory support, sales and marketing, customer service and strategy development. Prior to joining ScottMadden, Tim served as Vice President of Sales and Marketing for Vermont Gas. He has also served as Vice President of Marketing and Regulatory Affairs for Providence Gas Company, Director of Rates at Boston Gas Company, and Project Director at Quantec, LLC, an energy consulting firm.

Tim has sponsored testimony and evidence before 25 state regulatory commissions and 3 Canadian regulatory boards. Tim holds a B.A. from St. Anselm College, an M.A. in Economics from The Pennsylvania State University, and an M.B.A. from Babson College.

Areas of Specialization

- Regulation and Rates
- Retail Energy
- Utilities
- Natural Gas

Capabilities

- Regulatory Strategy and Rate Case Support
- Strategic and Business Planning
- Capital Project Planning
- Process Improvements

Articles and Speeches

- "Country Strong: Vermont Gas shares its comprehensive effort to expand natural gas service into rural communities." ***American Gas Association***, June 2011 (with Don Gilbert).
- "Talking Safety With Vermont Gas." ***American Gas Association***, February 2009 (with Dave Attig).
- "Consumers Say 'Act Now' To Stabilize Prices." ***Power & Gas Marketing***, September/ October 2001 (with Jim DeMetro and Gerry Yurkevicz).
- "Rate Reclassification: Who Buys What and When." ***Public Utilities Fortnightly***, October 15, 1991 (with John Martin).

Sponsor	Date	Docket No.	Subject
Regulatory Commission of Alaska			
Cook Inlet Natural Gas Storage Alaska, LLC	7/21	Docket No. U-21-058	Sponsored testimony supporting the lead-lag study/cash working capital requirement for a general rate case proceeding.
ENSTAR Natural Gas Company	06/16	Docket No. U-16-066	Adopted and sponsored testimony supporting a lead-lag study for a general rate case proceeding.
Arizona Corporation Commission			
Southwest Gas Corporation	12/21	Docket No. G-01551A-21-0368	Sponsored testimony supporting class cost of service, rate design and bill impact analysis for a general rate case proceeding.
Arkansas Public Service Commission			
Liberty Utilities (The Empire District Electric Company)	2/23	Docket No. 22-085-U	Sponsored testimony supporting the class cost of service, rate design, bill impact studies, and revenue decoupling for a general rate case proceeding.
Liberty Utilities (Pine Bluff Water)	10/18	Docket No. 18-027-U	Sponsored testimony supporting the cost of service, rate design and bill impact studies for a general rate case proceeding.
California Public Utilities Commission			
Bear Valley Electric Service, Inc.	10/22	Application No. 22-08-010	Sponsored testimony supporting marginal cost study, rate design and bill impact analysis for a general rate case proceeding.
Liberty Utilities (CalPeco Electric)	5/21	Application No. 21-05-017	Sponsored testimony supporting the lead-lag study/cash working capital, marginal cost study, rate design and bill impact analysis for a general rate case proceeding.
Southwest Gas Corporation (Southern California, Northern California, and South Lake Tahoe jurisdictions)	8/19	Application No. 19-08-015	Sponsored testimony on behalf of three separate rate jurisdictions supporting revenue requirements, lead-lag/ cash working capital, and class cost of service, rate design and bill impact analysis for a general rate case proceeding.
Connecticut Public Utilities Regulatory Authority			
Yankee Gas Company	07/14	Docket No. 13-06-02	Sponsored report and testimony supporting the review and evaluation of gas expansion policies, procedures and analysis.
Delaware Public Service Commission			
Artesian Water Company	04/23	Docket No. 23-0601	Sponsored testimony supporting the cost of service, rate design and bill impact studies for a general rate case proceeding.
Illinois Commerce Commission			
Ameren Illinois Company d/b/a Ameren Illinois	1/23	Docket No. 22-0487	Sponsored testimony supporting a Multi-Year Integrated Grid Plan (Grid Plan). Prepared research and analysis evaluating the reasonableness of the Grid Plan through comparison to how other electric utilities have responded to the changing energy landscape.
Liberty Utilities (Midstates Natural Gas)	07/16	Docket No. 16-0401	Sponsored testimony supporting the cost of service, rate design and bill impact studies for a general rate case proceeding. The testimony

Sponsor	Date	Docket No.	Subject
			includes proposal for new commercial classes and a decoupling mechanism.
Iowa Utilities Board			
Liberty Utilities (Midstates Natural Gas)	07/16	Docket No. RPU-2016-0003	Sponsored testimony supporting the cost of service, rate design and bill impact studies for a general rate case proceeding. The testimony includes proposal for new commercial classes.
Kansas Corporation Commission			
The Empire District Electric Company	12/18	Docket No. 19-EPDE-223-RTS	Sponsored testimony supporting cost of service, rate design, bill impact and lead-lag studies for a general rate case proceeding.
Kentucky Public Service Commission			
Bluegrass Water Utility (Central States Water Company)	02/23	Case No. 2022-00432	Sponsored testimony supporting the rate design and bill impact studies for a general rate case proceeding.
Maine Public Utilities Commission			
Northern Utilities, Inc. d/b/a Unitil	05/23	Docket No. 2023-00051	Sponsored testimony supporting the cost of service, rate design and bill impact studies for a general rate case proceeding.
Maine Water Company	03/21	Docket No. 2021-00053	Sponsored testimony supporting a proposed rate smoothing mechanism.
Northern Utilities, Inc. d/b/a Unitil	06/19	Docket No. 2019-00092	Sponsored testimony supporting a proposed capital investment cost recovery mechanism.
Northern Utilities, Inc. d/b/a Unitil	06/15	Docket No. 2015-00146	Sponsored testimony supporting the proposed gas expansion program, including a zone area surcharge.
Maryland Public Service Commission			
The Potomac Edison Company (FirstEnergy)	03/23	Case No. 9695	Sponsored testimony supporting the class cost of service, rate design, bill impact and lead-lag studies for a general rate case proceeding.
Sandpiper Energy, a Chesapeake Utilities company	12/15	Case No. 9410	Sponsored testimony supporting the cost of service, rate design and bill impact studies for a general rate case proceeding. The testimony includes proposal for new residential and commercial classes.
Massachusetts Department of Public Utilities			
Berkshire Gas Company, Eversource Energy, Liberty Utilities, National Grid, and Unitil	03/22	Docket No. DPU 20-80	Sponsored report that summarizes research, findings, and recommendations for regulatory mechanisms, methodologies, and policies that support Massachusetts's achievement of its net zero climate goal by 2050. The regulatory designs were informed by the results of quantitative and qualitative analysis of decarbonization pathways to achieve the Commonwealth's climate goals.
Liberty Utilities (New England Gas Company)	08/20	Docket No. DPU 20-92	Sponsored the Long-Range Forecast and Supply Plan filing for the five-year forecast period 2020/2021 through 2024/2025.

Sponsor	Date	Docket No.	Subject
Eversource Energy, National Grid, and Unitil	02/20	Docket No. DPU 19-55	Sponsored report that summarizes research and evaluation of funding approaches for infrastructure modifications that interconnect Distributed Generation (DG) projects.
Liberty Utilities (New England Gas Company)	07/18	Docket No. DPU 18-68	Sponsored the Long-Range Forecast and Supply Plan filing for the five-year forecast period 2018/2019 through 2022/2023.
Liberty Utilities (New England Gas Company)	07/16	Docket No. DPU 16-109	Sponsored the Long-Range Forecast and Supply Plan filing for the five-year forecast period 2016/2017 through 2020/2021.
Boston Gas	10/93	Docket No. DPU 92-230	Sponsored testimony describing the Company's position regarding rate treatment of vehicular natural gas investments and expenses.
Boston Gas	03/90	Docket No. DPU 90-55	Sponsored testimony supporting the weather and other cost of service adjustments, rate design and customer bill impact studies for a general rate case proceeding.
Boston Gas	03/88	Docket No. DPU 88-67-II	Sponsored testimony supporting the rate reclassification of commercial and industrial customers for a rate design proceeding.
Michigan Public Service Commission			
Lansing Board of Water & Light and Michigan State University	04/23	Docket No. U-21308	Sponsored testimony evaluating Consumer Energy's class cost of service and rate design proposals.
Lansing Board of Water & Light and Michigan State University	04/20	Docket No. U-20650	Sponsored testimony evaluating Consumer Energy's class cost of service and rate design proposals.
Lansing Board of Water & Light and Michigan State University	04/19	Docket No. U-20322	Sponsored testimony evaluating Consumer Energy's class cost of service and rate design proposals.
Midland Cogeneration Ventures, LLC	09/18	Docket No. U-18010	Sponsored testimony evaluating Consumer Energy's class cost of service and rate design proposals.
Minnesota Public Utilities Commission			
Northern States Power Company (XcelEnergy)	10/21	Docket No. E002/GR-21-630	Sponsored testimony supporting a Return on Equity (ROE)adjustment mechanism that would allow the Company to symmetrically adjust its ROE to reflect significant changesin financial market conditions.
Missouri Public Service Commission			
Confluence Rivers Utility Operating Company	12/22	Case No. WR-2023-0006/ SR-2023-0007	Sponsored testimony supporting the rate design and bill impact studies for a general rate case proceeding.
The Empire District Gas Company	08/21	Docket No. GR-2021-0320	Sponsored testimony supporting the class cost of service, rate design, bill impact and lead-lag studies for a general rate case proceeding.
The Empire District Electric Company	05/21	Docket No. ER-2021-0312	Sponsored testimony supporting the class cost of service, rate design, bill impact and lead-lag studies for a general rate case proceeding.

Sponsor	Date	Docket No.	Subject
Spire Missouri, Inc.	12/20	Docket No. GR-2021-0108	Sponsored testimony supporting class cost of service, rate design, and lead-lag study proposals for a general rate case proceeding. The testimony also included support for a proposed revenue adjustment mechanism.
The Empire District Electric Company	08/19	Docket No. ER-2019-0374	Sponsored testimony supporting the class cost of service, rate design, bill impact and lead-lag studies for a general rate case proceeding. The testimony also included proposals for a weather normalization mechanism.
Liberty Utilities (Midstates Natural Gas)	09/17	Docket No. GR-2018-0013	Sponsored testimony supporting the class cost of service, rate design, bill impact and lead-lag studies for a general rate case proceeding. The testimony also included proposals for a revenue decoupling/ weather normalization mechanism as well as tracker accounts for certain O&M expenses and capital costs.
Missouri Gas Energy	04/17	Docket No. GR-2017-0216	Sponsored testimony supporting the class cost of service, rate design, bill impact and Lead/Lag studies for a general rate case proceeding. The testimony included support for a decoupling mechanism.
Laclede Gas Company	04/17	Docket No. GR-2017-0215	Sponsored testimony supporting the class cost of service, rate design, bill impact and Lead/Lag studies for a general rate case proceeding. The testimony included support for a decoupling mechanism.
Nevada Public Utilities Commission			
Southwest Gas Corporation	09/21	Docket No. 21-09001	Sponsored testimony supporting the class cost of service,rate design, bill impact and Lead/Lag studies for a general rate case proceeding.
Southwest Gas Corporation	02/20	Docket No. 20-02023	Sponsored testimony supporting the class cost of service, rate design, bill impact and Lead/Lag studies for a general rate case proceeding.
New Hampshire Public Utilities Commission			
Unitil (Northern Utilities, Inc.)	8/21	Docket No. DG 21-104	Sponsored testimony supporting a revenue decoupling mechanism.
Unitil Energy Systems, Inc.	4/21	Docket No. DE 21-030	Sponsored testimony supporting a revenue decoupling mechanism.
Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities	11/17	Docket No. DG 17-198	Sponsored testimony supporting a levelized cost analysis for approval of firm supply and transportation agreements.
Liberty Utilities d/b/a Granite State Electric Company	04/16	Docket No. DE 16-383	Adopted testimony and sponsored Lead/Lag study for a general rate case proceeding.
New Jersey Board of Public Utilities			
Jersey Central Power and Light Company (FirstEnergy)	03/23	Docket No. ER23030144	Sponsored testimony supporting the class cost of service and Lead/Lag studies for a general rate case proceeding.

Sponsor	Date	Docket No.	Subject
South Jersey Gas Company	04/22	Docket No. GR22040253	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Elizabethtown Gas Company	12/21	Docket No. GR21121254	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
South Jersey Gas Company	03/20	Docket No. GR20030243	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Elizabethtown Gas Company	04/19	Docket No. GR19040486	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Pivotal Utility Holdings, Inc. d/b/a Elizabethtown Gas Company	08/16	Docket No. GR16090826	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Corporation Commission of Oklahoma			
The Empire District Electric Company	02/21	Cause No. PUD 202100163	Sponsored testimony supporting the class cost of service, rate design, bill impact and Lead/Lag studies for a general rate case proceeding. The proposed rate design included a three-year phase-in of the proposed rate increase.
The Empire District Electric Company	03/19	Cause No. PUD 201800133	Sponsored testimony supporting the class cost of service, rate design, bill impact and Lead/Lag studies for a general rate case proceeding.
The Empire District Electric Company	04/17	Cause No. PUD 201600468	Adopted direct testimony and sponsored rebuttal testimony supporting the revenue requirements for a general rate case proceeding. The testimony included proposals for alternative ratemaking mechanisms.
Rhode Island Public Utilities Commission			
Providence Gas Company	08/01 09/00 08/96	Docket No. 1673	Sponsored testimony supporting the changes in cost of gas adjustment factor related to projected under-recovery of gas costs; Filed testimony and witness for pilot hedging program to mitigate price risks to customers; Filed testimony and witness for changes in cost of gas adjustment factor related to extension of rate plan.
Providence Gas Company	08/00	Docket No. 2581	Sponsored testimony supporting the extension of a rate plan that began in 1997 and included certain modifications, including a weather normalization clause.
Providence Gas Company	03/00	Docket No. 3100	Sponsored testimony supporting the de-tariff and deregulation of appliance repair service, enabling the Company to have needed pricing flexibility.
Providence Gas Company	06/97	Docket No. 2581	Sponsored testimony supporting a rate plan that fixed all billing rates for three-year period; included funding for critical infrastructure investments in accelerated replacement of mains and services, digitized records system, and economic development projects.

Sponsor	Date	Docket No.	Subject
Providence Gas Company	04/97	Docket No. 2552	Sponsored testimony supporting the rate design, customer bill impact studies and retail access tariffs for commercial and industrial customers, including redesign of cost of gas adjustment clause, for a rate design proceeding.
Providence Gas Company	02/96	Docket No. 2374	Sponsored testimony supporting the rate design, customer bill impact studies and retail access tariffs for largest commercial and industrial customers for a rate design proceeding.
Providence Gas Company	01/96	Docket No. 2076	Sponsored testimony supporting the rate reclassification of customers into new rate classes, rate design (including introduction of demand charges), and customer bill impact studies for a rate design proceeding.
Providence Gas Company	11/92	Docket No. 2025	Sponsored testimony supporting the Integrated Resource Plan filing, including a performance-based incentive mechanism.
Railroad Commission of Texas			
Texas Gas Service Company – West Texas, North Texas, and Borger/ Skellytown Service Areas	06/22	Case No. 00009896	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Texas Gas Service Company – Central Texas and Gulf Coast Service Areas	12/19	GUD No. 10928	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
CenterPoint Energy – Beaumont/ East Texas Division	11/19	GUD No. 10920	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Texas Gas Service Company – Borger/ Skellytown Service Area	08/18	GUD No. 10766	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Texas Gas Service Company – North Texas Service Area	06/18	GUD No. 10739	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
CenterPoint Energy – South Texas Division	11/17	GUD No. 10669	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Texas Gas Service Company – Rio Grande Valley Service Area	06/17	GUD No. 10656	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Atmos Pipeline – Texas	01/17	GUD No. 10580	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
CenterPoint Energy – Texas Gulf Division	11/16	GUD No. 10567	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Public Utility Commission of Texas			
CenterPoint Energy Houston Electric, LLC	04/19	Docket No. 49421	Sponsored testimony supporting the Lead/Lag study for a general rate case proceeding.
Vermont Public Utilities Commission			

Sponsor	Date	Docket No.	Subject
Vermont Gas Systems	12/12	Docket No. 7970	Sponsored testimony describing the market served by $90 million natural gas expansion project to Addison County, VT. Also described the terms and economic benefits of a special contract with International Paper.
Vermont Gas Systems	02/11	Docket No. 7712	Sponsored testimony supporting the market evaluation and analysis for a system expansion and reliability regulatory fund.
Virginia State Corporation Commission			
American Electric Power - Appalachian Power Company	3/23	Case No. PUR-2023-00002	Sponsored testimony supporting the Lead/Lag study for the 2023 triennial review of base rates, terms, and conditions.
Rappahannock Electric Cooperative	10/22	Case No. PUR-2022-00160	Sponsored report and studies related to revenue requirements, class cost of service, rate design, and bill impact analysis for a streamlined application to increase base rates.
American Electric Power - Appalachian Power Company	3/20	Case No. PUR-2020-00015	Sponsored testimony supporting the Lead/Lag study for the 2020 triennial review of base rates, terms, and conditions.
West Virginia Public Service Commission			
Monongahela Power Company and The Potomac Edison Company (FirstEnergy)	06/23	Case No. 23-0460-E-42T	Sponsored testimony supporting the class cost of service, rate design, bill impact and lead-lag studies for a general rate case proceeding.
Nova Scotia Utility and Review Board			
Nova Scotia Power	01/22	Matter No. M10431	Sponsored evidence supporting the cash working capital requirement and lead/Lag study for a general rate case proceeding.
Ontario Energy Board			
Ontario Energy Association	01/21	Docket No. EB-2020-0133	Sponsored evidence regarding policies and ratemaking treatment related to COVID-19 costs in U.S. and Canadian regulatory jurisdictions. The evidence was used to support Ontario Energy Association's response to Staff's proposals
Commission of Canada Energy Regulator			
Trans-Northern Pipelines, Inc.	06/23	Docket No. RH-001-2023	Sponsored evidence related to application for approval of incentive tolls.

SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
CUSTOMER CLASS MARGIN REVENUE ALLOCATION-RECOURSE
TWELVE MONTHS ENDED MAY 31, 2023 (TEST YEAR)

Line No.	Description		General-5	Line No.
	(a)		(b)	
1	Allocated Margin	$	1,294,976	1
2	Present Margin		1,033,075	2
3	Allocated Change in Revenue		261,901	3
4	Maximum Increase - System Average plus 10% Increase Cap		142,088	4
5	Revenue Requirement Capped Schedules (Ln 2 + Ln 4)		1,175,163	5
6	Increase Amount Exceeding 10% Cap (Ln 3 - Ln 4)		119,813	6
7	Proposed Revenue Requirement Non-Capped Schedules		n/a	7
8	Proposed Revenue Including capped rate schedules		1,175,163	8

SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
SUMMARY OF REVENUES AT PROPOSED RATES BY PROPOSED RATE SCHEDULES-RECOURSE
TWELVE MONTHS ENDED MAY 31, 2023 (TEST YEAR)

Line No.	Description	Reference	Schedule Number	Billing Determinants: Number of Bills	Billing Determinants: Sales (Therms)	Proposed Margin Rates [1]: Basic Service Charge	Proposed Margin Rates [1]: Delivery Charge	Margin at Proposed Rates: Basic Service Charge	Margin at Proposed Rates: Delivery Charge	Margin at Proposed Rates: Total Margin	Revenue at Proposed Rates: Gas Cost [2]	Revenue at Proposed Rates: Total Revenue	Line No.
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h) (d)*(f)	(i) (e)*(g)	(j) (h)+(i)	(k)	(l) (j)+(k)	
1	General Gas Service - 5		NG-G5										1
2	Basic Service Charge per Month												2
3	Sales Customers	Sch J-1, Sh 14		0		$ 1,000.00		$ 0		$ 0	$ 0	$ 0	3
4	Transportation Customers	WP Sch J-1, Sh 42		12		1,000.00		12,000		12,000	0	12,000	4
5	Transportation Service Charge	WP Sch J-1, Sh 42		12		500.00		6,000		6,000	0	6,000	5
6	Demand Charge												6
7	Sales Customers	WP Sch J-1, Sh 44			0		$ 0.02022		0	0	0	0	7
8	Transportation Customers	WP Sch J-1, Sh 44			28,162,800		0.02022		569,452	569,452	0	569,452	8
9	All Usage												9
10	Sales Customers	Sch J-1, Sh 14			0		$ 0.02504		0	0	0	0	10
11	Transportation Customers	WP Sch J-1, Sh 42			23,468,740		0.02504		587,657	587,657	0	587,657	11
12	Total General Gas Service - 5			12	23,468,740			$ 18,000	$ 1,157,109	$ 1,175,109	$ 0	$ 1,175,109	12

SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
CUSTOMER CLASS MARGIN REVENUE ALLOCATION-RECOURSE
TWELVE MONTHS ENDED MAY 31, 2023 (TEST YEAR)

Line No.	Description	General Gas Service - 5	General Gas Service - 6	Line No.
	(a)	(b)	(c)	
1	Allocated Margin	$ 10,603,175	$ 28,259,347	1
2	Present Margin	2,282,939	17,319,563	2
3	Allocated Change in Revenue	8,320,236	10,939,784	3
4	Maximum Increase - System Average plus 10% Increase Cap	373,548	2,833,930	4
5	Revenue Requirement Capped Schedules (Ln 2 + Ln 4)	2,656,487	20,153,493	5
6	Increase Amount Exceeding 10% Cap (Ln 3 - Ln 4)	7,946,688	8,105,854	6
7	Proposed Revenue Requirement Non-Capped Schedules	n/a	n/a	7
8	Proposed Revenue Including capped rate schedules	2,656,487	20,153,493	8

SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
SUMMARY OF REVENUES AT PROPOSED RATES BY PROPOSED RATE SCHEDULES-RECOURSE
TWELVE MONTHS ENDED MAY 31, 2023 (TEST YEAR)

				Billing Determinants		Proposed Margin Rates [1]		Margin at Proposed Rates			Revenue at Proposed Rates		
Line No.	Description	Reference	Schedule Number	Number of Bills	Sales (Therms)	Basic Service Charge	Delivery Charge	Basic Service Charge	Delivery Charge	Total Margin	Gas Cost [2]	Total Revenue	Line No.
	(a)	(b)	(b)	(c)	(d)	(e)	(f)	(g) (c)*(e)	(h) (d)*(f)	(i) (g)+(h)	(j)	(k) (i)+(j)	
1	General Gas Service - 5		SG-G5										1
2	Basic Service Charge per Month												2
3	Sales Customers	Sch J-1, Sh 14		0		$ 1,000.00		$ 0		$ 0	$ 0	$ 0	3
4	Transportation Customers	WP J-1, Sh 64 & 69		36		1,000.00		36,000		36,000	0	36,000	4
5	Transportation Service Charge	WP J-1, Sh 64		36		500.00		18,000		18,000	0	18,000	5
6	Demand Charges												6
7	Sales Customers	WP J-1, Sh 66-67			0		$ 0.00396		0	0	0	0	7
8	Transportation Customers	WP J-1, Sh 67 & 69			322,038,300		$ 0.00396		1,274,244	1,274,244	0	1,274,244	8
9	Commodity Charge per Therm:												9
10	Sales Customers	Sch J-1, Sh 14			0		$ 0.01050		0	0	0	0	10
11	Transportation Customers	WP J-1, Sh 64 & 69			126,468,819		$ 0.01050		1,328,244	1,328,244	0	1,328,244	11
12	Total General Gas Service - 5			36	126,468,819			$ 54,000	$ 2,602,488	$ 2,656,488	$ 0	$ 2,656,488	12
13	General Gas Service - 6		SG-G6										13
14	Basic Service Charge per Month												14
15	Sales Customers	Sch J-1, Sh 14		0		$ 1,000.00		$ 0		$ 0	$ 0	$ 0	15
16	Transportation Customers	WP J-1, Sh 64 & 69		60		1,000.00		60,000		60,000	0	60,000	16
17	Transportation Service Charge	WP J-1, Sh 64		48		500.00		24,000		24,000	0	24,000	17
18	Demand Charges												18
19	Sales Customers	WP J-1, Sh 66-67			0		$ 0.02227		0	0	0	0	19
20	Transportation Customers	WP J-1, Sh 67 & 69			448,687,920		$ 0.02227		9,992,747	9,992,747	0	9,992,747	20
21	Commodity Charge per Therm:												21
22	Sales Customers	Sch J-1, Sh 14			0		$ 0.03612		0	0	0	0	22
23	Transportation Customers	WP J-1, Sh 64 & 69			279,016,978		$ 0.03612		10,076,747	10,076,747	0	10,076,747	23
24	Total General Gas Service - 6			60	279,016,978			$ 84,000	$ 20,069,494	$ 20,153,494	$ 0	$ 20,153,494	24

SOUTHWEST GAS CORPORATION
NORTHERN NEVADA
CLASS COST OF SERVICE STUDY SUMMARY AT SYSTEM RATE OF RETURN - RECOURSE
TWELVE MONTHS ENDED MAY 31, 2023 (TEST YEAR)

Line No.	Description	Allocation Factor	General-5	Line No.
	(a)	(b)	(c)	
1	Rate Base			1
2	Total Direct Net Plant	Various	$ 5,781,306	2
3	Total Common Allocable Net Plant	1.1	253,260	3
4	Cash Working Capital	1.1	(21,960)	4
5	Materials & Supplies	1.1	382,974	5
6	Other Debits and Credits	4	135,650	6
7	Customer Advances	8	(76)	7
8	Deferred Taxes	1.1	(873,253)	8
9	Total Rate Base		$ 5,657,902	9
10	Revenue			10
11	Net Operating Margin	Direct	$ 1,294,976	11
12	Negotiated Contracts Margin	Net Op Mrg	0	12
13	Contract Revenue Adjustment	Net Op Mrg	0	13
14	Other Revenue - Labor	Net Op Mrg	5	14
15	Other Revenue - Parts & Material	Net Op Mrg	0	15
16	Other Revenue - Rental Income	Net Op Mrg	0	16
17	Late Charges	12	0	17
18	Service Establishment Charges	9	0	18
19	Reconnect / Reread Charges	9	0	19
20	Other Revenue - Field Collection Fee	Net Op Mrg	0	20
21	Other Revenue - Returned Items	13	0	21
22	Total Revenue		$ 1,294,981	22
23	Operating Deductions			23
24	Operations & Maintenance Exps	Various	$ (310,951)	24
25	Incremental Uncollectible Exps	4	(1)	25
26	Regulatory Amortization	Depr Exp	(5,013)	26
27	Mill Tax		3,533	27
28	Modified Business Tax		(1,953)	28
29	Administrative & General Exps	O&M	(167,772)	29
30	Depreciation Expenses	1.1	(264,453)	30
31	Taxes Other than Income	1.1	(74,472)	31
32	Total Operating Deductions		$ (821,083)	32
33	State Income Tax			33
34	Taxable Income before Interest Expense		$ 473,898	34
35	Interest Expenses	1.1	(124,043)	35
36	State Taxable Income		$ 349,855	36
37	State Income Tax	0.00%	$ 0	37
38	South Georgia State	1.1	0	38
39	Total State Income Tax		$ 0	39
40	Taxable Income			40
41	Taxable Income before Interest Exp	Various	$ 473,898	41
42	Interest Expenses	1.1	(124,043)	42
43	Schedule M Adjustments	1.1	(984,977)	43
44	Taxable Income		$ (635,123)	44
45	Federal Income Tax			
46	Federal Income Tax	21.00%	$ (133,376)	46
47	Investment Tax Credit (I.T.C.)	1.1	0	47
48	Federal Deferred Provision	1.1	195,767	48
49	South Georgia Amortization - Fed	1.1	0	49
50	Total Federal Income Tax		$ 62,392	50
51	Net Income		$ 411,506	51
52	Rate of Return on Rate Base		7.27%	52

SOUTHWEST GAS CORPORATION
SOUTHERN NEVADA
CLASS COST OF SERVICE STUDY SUMMARY AT SYSTEM RATE OF RETURN - RECOURSE
TWELVE MONTHS ENDED MAY 31, 2023 (TEST YEAR)

Line No.	Description	Allocation Factor	General Gas Service - 5	General Gas Service - 6	Line No.
	(a)	(b)	(c)	(d)	
1	Rate Base				1
2	Total Direct Net Plant		$ 65,701,971	$ 176,200,043	2
3	Total Common Systems Allocable Net Plant		1,735,100	4,653,203	3
4	Cash Working Capital	11.2	257,859	691,528	4
5	Materials & Supplies	1.1	574,783	1,541,458	5
6	Customer Advances	8.0	(298)	(497)	6
7	Deferred Taxes	1.1	(8,751,758)	(23,470,530)	7
8	Other Debits and Credits	1.1	999,001	2,679,128	8
9	Total Rate Base		$ 60,516,658	$ 162,294,333	9
10	Margin				10
11	Net Operating Margin	Direct	$ 10,603,175	$ 28,259,347	11
12	Negotiated Contract and Pabco Margin	Net Op Marg	0	0	12
13	Contract Revenue Adjustment		0	0	13
14	Other Revenue - Labor	Net Op Marg	12	31	14
15	Other Revenue - Parts & Material	Net Op Marg	3	8	15
16	Other Revenue - Rental Income	Net Op Marg	0	0	16
17	Late Charges	12.0	0	0	17
18	Service Establishment Charges	9.0	0	0	18
19	Reconnect / Reread Charges	9.0	0	0	19
20	Other Revenue	Net Op Marg	0	23	20
21	Other Revenue - Returned Item Fee	13.0	0	6	21
22	Total Revenue		$ 10,603,190	$ 28,259,415	22
23	Operating Deductions				23
24	Operations & Maintenance Expenses		$ (1,579,617)	$ (4,074,450)	24
25	Incremental Uncollectible Expenses	4.0	(4)	(7)	25
26	Administrative & General Expenses	O&M	(907,996)	(2,342,076)	26
27	Depreciation Expenses		(2,566,628)	(6,883,694)	27
28	Regulatory Amortization	1.1	(47,654)	(127,798)	28
29	Mill Tax	Net Op Marg	(15,890)	(120,547)	29
30	Modified Business Tax	1.1	4,498	12,062	30
31	Taxes other than Income	1.1	(347,810)	(932,761)	31
32	Total Operating Deductions		$ (5,461,101)	$ (14,469,271)	32
33	State Income Tax				33
34	Taxable Income before Interest Expense		$ 5,142,089	$ 13,790,144	34
35	Interest Expenses	1.1	(1,316,875)	(3,531,606)	35
36	State Taxable Income		$ 3,825,214	$ 10,258,538	36
37	State Income Tax	0.00%	$ 0	$	37
38	South Georgia State	1.1	0		38
39	Total State Income Tax		$ 0	$	39
40	Taxable Income				40
41	Taxable Income before Interest Expense		$ 5,142,089	$ 13,790,144	41
42	Interest Expenses		(1,316,875)	(3,531,606)	42
43	Schedule M Adjustments		(6,385,559)	(17,124,841)	43
44	Taxable Income		$ (2,560,345)	$ (6,866,303)	44
45	Federal Income Tax				45
46	Federal Income Tax	21.00%	$ (537,673)	$ (1,441,924)	46
47	Investment Tax Credit (I.T.C.)	1.1	0	0	47
48	Federal Deferred Provision / ARAM	1.1	1,283,203	3,441,304	48
49	South Georgia Federal	1.1	0	0	49
50	Total Federal Income Tax		$ 745,531	$ 1,999,380	50
51	Regulatory Amortization CP National	1.1	$ 0	$ 0	51
52	Net Income		$ 4,396,558	$ 11,790,764	52
53	Rate of Return on Rate Base		7.27%	7.27%	53

AFFIRMATION OF TIMOTHY S. LYONS

Pursuant to NAC 703.710, Timothy S. Lyons affirms and declares the following:

1. I am over 18 years of age and am competent to testify to facts stated below which are based upon my personal knowledge.
2. That I am the person identified in the foregoing prepared testimony, including, where applicable, any exhibits.
3. That such testimony and exhibits were prepared by me or under my direction.
4. That the information appearing in my testimony and exhibits are true to the best of my knowledge and belief and that if I were asked the questions stated therein under oath, my answers would be the same.
5. Pursuant to NRS 53.045, I declare under penalty of perjury under the law of the State of Nevada that the foregoing is true and correct.

EXECUTED and DATED this 29th day of August, 2023

____
TIMOTHY S. LYONS

IN THE MATTER OF
SOUTHWEST GAS CORPORATION
DOCKET NO. 23-09___

PREPARED DIRECT TESTIMONY
RANDI L. CUNNINGHAM

ON BEHALF OF
SOUTHWEST GAS CORPORATION

SEPTEMBER 1, 2023

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of
Randi L. Cunningham

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Southwest Gas Corporation
Docket No. 23-09___

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Direct Testimony
of
Randi L. Cunningham

I. INTRODUCTION

Q. 1 Please state your name and business address.

A. 1 My name is Randi L. Cunningham. My business address is 8360 S. Durango Drive, Las Vegas, Nevada 89113.

Q. 2 By whom and in what capacity are you employed?

A. 2 I am employed by Southwest Gas Corporation (Southwest Gas or Company) in the Regulation department. My title is Director/Regulation.

Q. 3 Please summarize your educational background and relevant business experience.

A. 3 My educational background and relevant business experience are summarized in Appendix A to this testimony.

Q. 4 Have you previously testified before any regulatory commission?

A. 4 Yes. I have previously testified before the Public Utilities Commission of Nevada (Commission), the Arizona Corporation Commission, the California Public Utilities Commission, and the Federal Energy Regulatory Commission.

Q. 5 What is the purpose of your prepared direct testimony in this proceeding?

A. 5 I sponsor the Company's overall revenue requirement and deficiency calculation. I sponsor various statements, schedules, and adjustments as described below. In addition, I am serving as the witness for the Company's' compliance with the directives to: 1) file a ledger of adjusted expenses the Company is seeking recovery for food and beverage, travel, lodging, incidentals, real estate and entertainment, and 2) file a schedule which delineates every Board of Directors (BOD) charge included for recovery as required by the Order in Docket No. 21-09001.

Q. 6 Do other witnesses sponsor testimony regarding Southwest Gas' revenue requirement?

A. 6 Yes. Company witnesses Amy L. Timperley, Christopher M. Brown, Celine Louise R. Apo, Richard W. Crane, Dylan W. D'Ascendis, Byron C. Williams, and Timothy Lyons sponsor testimony for various statements, schedules and adjustments supporting the Company's revenue requirement.

Q. 7 Please summarize your prepared direct testimony.

A. 7 My prepared direct testimony consists of the following key items:

- The Statements I am sponsoring including Statements H, I, N, and P;
- A summary of the results of operations for the Company's Southern Nevada rate jurisdiction (Southern Nevada) and Northern Nevada rate jurisdiction (Northern Nevada), including the determination of revenue deficiencies;
- Cost Responsibility and Allocation (excluding the Company's class cost of service study);
- The Company's compliance with various directives set forth in the Commission's Order in Docket no. 21-09001;
- Test year adjustments as set forth in Schedules H-3, H-5, H-12, and H-19;
- Certification Period Adjustments, as set forth in Schedule HC-2;
- Statement P, Ratemaking and Accounting Changes;
- AGA Dues; and

- The benefits of the Company's UI Planner application.

Q. 8 How are the rate jurisdictions treated in the statements, schedules and workpapers?

A. 8 Differences in adjustments or amounts are separately identified for each rate jurisdiction. In addition, each rate jurisdiction has its own set of statements, schedules and workpapers supporting the revenue requirement applicable to each rate jurisdiction. Each statement or schedule discussed in this testimony is applicable to both Southern Nevada and Northern Nevada unless otherwise indicated.

II. STATEMENTS

Q. 9 Which statements are you sponsoring?

A. 9 I am sponsoring Statements H and I along with select H schedules as noted above, N (with the exception of schedule N-2), and P.

Q. 10 Are these statements required per the Commission's regulations?

A. 10 Yes. Nevada Administrative Code (NAC) 703.2265 sets forth filing requirements for utilities with annual gross operating revenues of $250,000 or more, which includes the filing of Statements H, I, N and P with a general rate case application.

Q. 11 Has the Company provided Statement H consistent with NAC 703.2345?

A. 11 Yes. Consistent with the requirements of NAC 703.2345, Statement H presents a summary of the overall results of operations, including the amounts recorded on the Company's books and records as of May 31, 2023, test year and certification adjustments developed from the supporting schedules and statements, and the requested rate of return and the application of the requested rate of return to the overall rate base.

Q. 12 Has the Company provided Statement N consistent with NAC 703.2441?

A. 12 Yes. Consistent with the requirements of NAC 703.2441, Statement N shows the allocation of both rate base components and components of the results of operations between or among departments, jurisdictions or regulated and nonregulated operations.

Q. 13 Has the Company provided Statement P consistent with NAC 703.2451?

A. 13 Yes. Consistent with the requirements of NAC 703.2451, Statement P discloses, as applicable, any changes in presentation for rate making and any change in accounting methods, procedures and allocations implemented since the Company's last general rate case (GRC) and identifies expenses previously considered and disallowed in a GRC by the Commission, including new facts and policy considerations offered for each item proposed.

III. SUMMARY OF RESULTS OF OPERATIONS

Q. 14 Please explain Statement H, Sheet 1, Summary of the Overall Results of Operations.

A. 14 Statement H, Sheet 1 provides a comprehensive overview of the Company’s results of operations and overall rate of return for the test year ended May 31, 2023 and projected at the end of the certification period ending November 30, 2023. It also presents the Company’s proposed revenue requirement and margin deficiency. The following table provides a summary of adjusted test year results for Statement H:

ADJUSTED TEST YEAR RESULTS		
Description	Southern Nevada	Northern Nevada
Net Operating Income	$86.3M	$10.5M
Rate Base	$1.71B	$195.6M
Overall Rate of Return (ROR)	5.05%	5.36%

The following table provides a summary of projected results at the end of the certification period for Statement H, and includes the Company's resulting margin deficiency:

CERTIFICATION PERIOD RESULTS		
Description	Southern Nevada	Northern Nevada
Net Operating Income	$79.8M	$8.7M
Rate Base	$1.75B	$213.2M
Overall ROR	4.56%	4.06%
Margin Deficiency[1]	$61M	$8.8M

The Company has not proposed any expected changes in circumstances (ECIC) adjustments in this Application. The Company's requested overall rate of return (ROR) is 7.27 percent in Southern Nevada and 7.27 percent in Northern Nevada. Company witness Dylan W. D'Ascendis provides testimony supporting the requested ROR as presented in Statement F.

Q. 15 Please explain Statement H, Sheets 2 through 6.

A. 15 Sheets 2 through 4 summarize the adjustments to the recorded results for the test year. Sheet 5 summarizes the adjustments expected to occur during the certification period. Sheet 6 shows the calculation of the Gross Revenue

[1] The term "margin" refers to the billed revenue Southwest Gas receives, less the cost of gas. Since Southwest Gas has a separate quarterly deferred energy account adjustment mechanism to ensure the Company recovers its actual cost of gas, revenues and gas cost associated with the cost of gas are excluded from this Application.

Conversion Factor used to calculate the requested increase in operating margin. The requested increase is required to generate net income sufficient to produce the ROR requested in this application.

Q. 16 Please describe the purpose in having within test year expense adjustments.

A. 16 Actual incurred expenses within the test year may not accurately represent operating expenses necessary to operate the utility when rates from this proceeding are effective. Therefore, some operating expenses must be annualized, normalized, or otherwise adjusted to reflect expected levels of these expenses on a going forward basis.

Q. 17 Please describe the adjustments to the amounts recorded during the test year.

A. 17 The Company proposes twenty-five adjustments to test year recorded data in Northern Nevada and twenty-four adjustments in Southern Nevada. One adjustment has separate Southern and Northern Nevada components and one adjustment is specific to Northern Nevada. Twenty-three of the twenty-five proposed adjustments are in compliance with prior Commission decisions or consistent with adjustments that the Company made in its most recent GRC, (Docket No. 21-09001). In some instances, as noted in the description of each adjustment, the Company is presenting evidence from a Company witness in support of the merits of its proposed methodology or ratemaking position.

Q. 18 Please describe the adjustments to the amounts recorded during the certification period.

A. 18 The Company proposes eight certification adjustments, all of which are common to both rate jurisdictions. All eight of these proposed adjustments are in compliance with prior Commission decisions or consistent with adjustments that the Company made in its most recent GRC (Docket No. 21-09001). In some instances, as noted in the description of each adjustment, the Company is presenting evidence from a Company witness in support of the merits of its proposed methodology or ratemaking position.

Q. 19 What is Southwest Gas' proposed increase in each rate jurisdiction as a percentage of revenue at present rates?

A. 19 The proposed Southern Nevada increase of $61 million represents a 6.61% percent increase in revenue. The proposed Northern Nevada increase of $8.8 represents a 4.01% percent increase in revenue.

IV. COST RESPONSIBILITY AND ALLOCATIONS

Q. 20 Briefly describe how costs associated with Southwest Gas' natural gas operations are treated in this application.

A. 20 Operating costs are incurred and capital investments are generally made at the Southern Nevada or Northern Nevada division levels and at the corporate level. Operating costs are also incurred at the Southwest Gas Holdings, Inc. (HoldCo) level. Costs incurred at the division level are generally charged directly to a specific rate jurisdiction. There are two exceptions. When Southern Nevada performs work for SGTC, the labor and related expenses are initially charged to Southern Nevada responsibility center 4108. Each month the transactions are aggregated at the account number and cost element level and reversed out of Southwest Gas using responsibility center 4109, with the debit to the SGTC intercompany account[2]. The other exception is when costs benefit the entirety of the northern Nevada/northern California geographical area (excluding GBGTC).

[2] The monthly reclass of SGTC O&M charges is done in Journal 818.

Those costs are charged to receiving district (RD) 0022. Each month those costs are aggregated, and an allocation is made to the Northern California and South Lake Tahoe ratemaking jurisdictions based on the weighted 4-Factor allocations for just those jurisdictions.[3] The allocation factors are updated annually. The Northern Nevada portion remains in RD 0022.

Costs at the corporate level may be charged to one or more rate jurisdictions if the cost/activity was incurred on its behalf (i.e., "corporate direct" costs). In instances where corporate costs are beneficial to all of the Company's rate jurisdictions, or where the effort of tracking the jurisdictional allocation of the costs is not practical, such costs are allocated to all rate jurisdictions (i.e., "common" or "system allocable" costs). The costs charged at the HoldCo level in FERC Account 930.2 are allocated to Southwest Gas and the other Companies under HoldCo on a monthly basis based on relative equity or investment in each company.[4] The allocation factors are updated annually or as needed. The HoldCo costs allocated to Southwest Gas are considered system allocable costs.

Q. 21 Please describe the annualization made to the Company's HoldCo allocation percentage to Southwest Gas.

A. 21 During the test year, HoldCo sold Mountain West Pipelines Holding Company, after which Southwest Gas' allocation percentage increased from 78 percent to 89 percent effective February and March 2023, and to 90.5 percent effective starting April 2023. By the time rates from this proceeding are effective, the Company anticipates that the separation of Centuri from HoldCo will be completed, with Southwest Gas being the only entity under the HoldCo umbrella. Therefore, the

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[3] The monthly allocation of RD 0022 O&M charges is done in Journal 687.
[4] The monthly allocation of Holding Company 930.2 charges is done in Journal 730.

Company will receive a 100 percent allocation of HoldCo charges to FERC account 930.2 at that point and going forward. The ratemaking impact of the change in allocation percentage has on requested allocated HoldCo expenses will be discussed below in the cost of service analysis section.

Q. 22 What types of costs are considered system allocable costs?

A. 22 System allocable costs consist primarily of corporate A&G expenses incurred at the Southwest Gas level and the amount allocated from HoldCo, the costs associated with intangible plant (computer software and licenses), and general plant used to support the corporate administrative staff. It also includes corporate charges to O&M accounts, where such costs are beneficial to all of the Company's rate jurisdictions, or where the effort of tracking the jurisdictional allocation of the costs is not practical These O&M costs are aggregated and allocated to each state ratemaking jurisdiction in the general ledger on a monthly basis[5] – FERC accounts 901-910 are allocated with Factor IV, average number of customers, while the remaining FERC O&M accounts are allocated using the 4-Factor, which is described below.

Q. 23 How does the Company allocate system allocable costs to Great Basin Gas Transmission Company ("GBGTC") and Southwest Gas Transmission Company ("SGTC")?

A. 23 System allocable A&G expenses (except Account 924, Property Insurance) are first allocated to GBGTC and SGTC using the Modified Massachusetts Formula ("MMF"), a Federal Energy Regulatory Commission-authorized methodology used by Southwest Gas. The MMF is calculated on Statement N, Sheet 10. Property

[5] The corporate O&M allocation journal is Journal 686.

insurance is allocated using an insurable property factor (WP Schedule H-10, Adjustment No. 10, Sheets 1-2). GBGTC is also charged a rental fee for its use of system allocable intangible and general plant. System allocable costs that are allocated and charged to GBGTC are transferred to and recorded on GBGTC's books monthly, and to SGTC's books annually. Consequently, system allocable A&G expenses shown on Southwest Gas' books are net of the allocations to GBGTC and SGTC. For this rate application, the MMF, and the insurable property factor were recalculated using end of test year data. The resulting pro forma adjustment is presented in Adjustment No. 10, which is discussed in further detail in the testimony of Company witness Christopher M. Brown.

Q. 24 After system allocable costs are allocated to GBGTC and SGTC, how are the remaining costs allocated to Southwest Gas' retail rate jurisdictions?

A. 24 Property insurance costs are allocated to each retail rate jurisdiction using the same insurable property factor discussed previously, and the remaining system allocable costs are allocated using the 4-Factor methodology described below.

Q. 25 Please explain the 4-Factor methodology utilized by Southwest Gas.

A. 25 The 4-Factor methodology is based on the average of four equally weighted components: (a) direct operating expense; (b) average gross plant; (c) direct operating labor; and (d) average number of customers. The 4-Factor methodology has been accepted and approved by each of the Company's state regulatory commissions. Statement N, Sheet 8 provides the development of the 4-Factor percentages as of the end of the test year.

Q. 26 Please describe Statement N.

A. 26 Statement N provides an overall summary of revenues, expenses and rate base of the Company's ratemaking areas and jurisdictions. It also provides the calculations of the various allocation methodologies used for utility and non-utility operations, and the balance sheets and income statements for each of the Company's subsidiaries. New schedules were provided in Statement N in this rate case to provide the test year HoldCo allocation percentages (Southern Nevada and Northern Nevada) and the District 0022 allocation percentages (Northern Nevada only). Statement N Sheets 20 through 26 of shows an itemized listing of allocated HoldCo charges requested for recovery.

Q. 27 Please explain the new Statement N schedules for HoldCo.

A. 27 This schedule shows an itemized listing of each transaction incurred at the HoldCo level and charged to FERC account 930.2. It also shows an itemized list of costs that were charged to Southwest Gas incorrectly and should have been charged at the HoldCo level in FERC account 930.2. FERC account 930.2 charged to HoldCo generally consist of costs related to the BOD, financing, securities and stock exchange costs, investor relations, bank fees and other general corporate costs appropriately charged to the Holding Company.

Q. 28 What is the impact of the accounting correction on Statement N, Sheets 25-26 to reclassify the transactions that were incorrectly recorded to Southwest Gas to the Holding Company in FERC account 930.2?

A. 28 There is no net dollar impact resulting from this adjustment since HoldCo will be allocating 100 percent of charges to FERC account 930.2 to Southwest Gas, and the costs were removed from Southwest Gas in Adjustment No. 5.

Q. 29 Please describe Schedule N-1.

A. 29 Schedule N-1 shows the labor and labor-related loadings or benefits that are charged to regulated and non-regulated operations of any Company employees who have directly charged labor to any non-regulated entity during the test year.

V. COMPLIANCE ITEMS

Q. 30 Are you providing testimony supporting the Company's fulfillment of the directive in ordering paragraph 11 of the Commission's Order in Docket No. 21-09001 to file a ledger of adjusted expenses for food and beverage, travel, lodging, incidentals, real estate, and entertainment?

A. 30 Yes. The ledgers that show the amounts requested for recovery for the aforementioned expenses are included in a separate volume to this application.

Q. 31 Are you providing testimony supporting the Company's fulfillment of the directive in ordering paragraph 12 of the Commission's Order in Docket No. 21-09001 to file a schedule delineating every BOD charge included for recovery, including reference to the schedule that each BOD charge is itemized on and the amount requested for recovery in Southern Nevada and Northern Nevada revenue requirements, respectively, with corresponding allocation factors?

A. 31 Yes. The compliance schedule is included in the instant filing in Confidential Exhibit No. _(RLC-1). The adjustments to recorded BOD expenses and the annualization of the HoldCo allocation percentage are described below in the cost of service analysis section.

VI. WITHIN TEST YEAR ADJUSTMENTS

Q. 32 Please identify the within test year adjustments you are supporting.

A. 32 I am supporting the within test year adjustments in Schedules H-3, H-5, H-12, and H-19. The remaining within test year adjustments are supported by other Company witnesses, as follows: Schedules H-1 and H-2 are supported by Timothy S. Lyons; Schedules H-4, H-7, H-8, H-13, H-14, H-16, H-18 and H-21 are supported by Celine Louise R. Apo; Schedules H-6, H-9, H-10, H-15, H-23 and H-

24 are supported by Christopher M. Brown; Schedules H-20 and H-22 are supported by Richard W. Crane; and Schedule H-17 is supported by Byron C. Williams.

Q. 33 Please explain Schedule H-3, Labor and Benefits Adjustment.

A. 33 Adjustment No. 3 annualizes the labor and related labor loadings of Southern Nevada, Northern Nevada and Corporate employees employed by the Company at the test year ended May 31, 2023. The table below provides a comparison of the number of employees in each of these three areas at the end of the test year in the instant docket and at the end of the test year in the Company's most recent general rate case (GRC).[6]

	Twelve Months Ended May 31, 2021	Twelve Months Ended May 31, 2023
Southern Nevada	328	340
Northern Nevada [1]	154	168
Corporate [2]	840	870

[1] For Northern Nevada division, employees are allocated to Northern Nevada rate jurisdiction based on how labor was recorded during the test year.
[2] Corporate employees are allocated to System Allocable and Corporate direct based on how labor was recorded during the test year.

The labor and labor loading annualization adjustment includes two components. On Schedule H-3, Sheet 1, a salary annualization is made for all Southern Nevada, Northern Nevada, and Corporate employees with salaries in effect at the end of the last pay period beginning prior to May 31, 2023. Second, labor loadings are annualized at the end of the test period and those costs are applied to the employees on Southwest Gas' payroll at the end of the test period.

[6] Docket No. 21-09001

Schedule H-3, Sheet 2, annualizes the non-service-related pension costs based on a three-year average and allocates the amount, first using the MMF to allocate to the Company's federal ratemaking jurisdictions, then the 4-Factor allocation to the Company's state ratemaking jurisdictions, including Southern Nevada and Northern Nevada. The overall impact of Adjustment No. 3 is a decrease to operating expenses of $690,949 and $389,567 for Northern Nevada and Southern Nevada, respectively.

Q. 34 Please describe the labor loading process.

A. 34 Service-related post-retirement benefit costs, other benefits and payroll taxes are accumulated at the corporate level. These costs are then distributed among the various rate jurisdictions through a labor loading process. The labor loading rate is adjusted at the beginning of each year, based on budgeted pensions, benefits, paid time off, payroll taxes, and expected employee levels. The labor loading process applies the labor loading rate to each labor dollar, assigning an appropriate amount of pensions, benefits, paid time off, and payroll taxes to each account to which labor has been charged.

Q. 35 How were labor loadings for Southern Nevada, Northern Nevada, and Corporate employees annualized or normalized in this proceeding?

A. 35 Southwest Gas used the actuarial study accrual amounts for the three most recent calendar years, which are also used by the Company to accrue the related expenses, as the basis for normalizing the service-related costs for pension, post-employment benefits other than pension (PBOP), and supplemental executive retirement plan (SERP)[7] (collectively post-retirement benefits) based on a three-

[7] Consistent with the Commission's Decision in Docket No. 20-02023, the Company is only seeking recovery of the restorative SERP benefit and is not requesting recovery of the cost in excess of this amount.

year average. The use of a three-year average for the Company's post-employment benefits expense is consistent with the methodology adopted by the Commission in the Company's most recent GRC filing. Consistent with prior Commission decisions, the Company removed certain items recorded in the Miscellaneous Benefits subaccount from the cost of service, such as costs related to service awards, retirement gifts and parties, and employee recognition. Also, adjustments were made to remove out of period charges as necessary from the test year, and to bring in test year charges recorded out of period. In addition, payroll taxes, employee investment plan (401(k)) match, and indirect time were annualized to reflect the impact of annualizing payroll and overtime. For the remaining costs in Account 926, recorded test year costs were used as the basis for the annualization. These adjustments are consistent with prior Commission decisions.

There were two methods used to allocate labor loading costs to Southern Nevada and Northern Nevada. First, the three-year average (2021, 2022, and 2023) service-related cost of post-employment benefits, along with executive deferred compensation and 401(k), were allocated based on each rate jurisdiction's labor cost as a percentage of total Company labor. Second, for the remaining benefits, a cost per employee was calculated based on the adjusted costs divided by the total number of Company employees at the end of the test year. The cost per employee was multiplied by the number of Southern Nevada and Northern Nevada jurisdictional employees at the end of the test year to determine the amount allocated to each rate jurisdiction for ratemaking purposes. Company witness Frederica Harvey supports the Company's compensation and benefits programs and the prudency of the related expenses.

Q. 36 How did the Company normalize service-related post-employment benefit costs in this application?

A. 36 As discussed above, Company normalized service-related post-retirement benefit costs consistent with prior Commission directives and Company cases by utilizing a three-year average of the three most recent calendar years (2021-2023) of expense, as supported by the Company's actuarial studies provided by Aon. Company witness Lisa McRae supports the derivation of the Company's pension expense.

Q. 37 Once the annualized labor and labor loadings were calculated, how was the adjustment determined?

A. 37 The annualized labor and labor loadings were assigned to each account based on the historical test year relationships. For example, during the test year, approximately 63 percent of Southern Nevada and 76 percent of Northern Nevada direct labor and loadings were charged to O&M accounts. Therefore, 63 percent of the annualized Southern Nevada and 76 percent of the annualized Northern Nevada direct labor and loadings were assigned to O&M accounts. The difference between the annualized labor and loadings assigned to the O&M accounts and the recorded labor and loadings is the adjustment for that account. Since 63 percent of the annualized Southern Nevada and 76 percent of the annualized Northern Nevada direct labor and loadings were assigned to O&M, the remaining 37 percent and 24 percent, respectively, were assigned to capital and deferred accounts, and do not impact the annualized labor and labor loadings requested in this application. A similar assignment was performed for corporate staff annualized labor and loadings to determine the adjustment required.

Q. 38 Please describe the cost of service analysis the Company has historically performed when preparing a general rate case application.

A. 38 When preparing its general rate case applications, the Company reviews thousands of transactions in various categories to determine whether, while valid business expenses, they are appropriate to include in the Company's proposed cost of service for consideration in establishing rates. The Company obtains the transactions from several sources including: 1) its accounts payable system, 2) journal entries in its general ledger, and 3) employee expense report system. The transactions are generally grouped into the following eight categories: 1) Donation/Civic Activity, 2) Employee Events, 3) Employee Recognition, 4) Other Employee Welfare, 5) Sponsorships, Ads, Promos, 6) Non-Utility Expense, 7) Non-Recurring Expense, and 8) Retirement Gifts/Meals. There are additional categories that could increase or decrease the cost of service, which are generally grouped into three categories: 1) Out of Period Expenses, 2) Expense Annualizations, and 3) Accounting Corrections.

Q. 39 What is the purpose of the cost of service analysis?

A. 39 The purpose of the cost of service analysis is to review recorded business expenses to ensure they have been recorded to the correct account and rate jurisdiction, as well as to identify any expenses that should not be considered when establishing the Company's proposed cost of service. This process is also used to identify out of period expenses, non-recurring expenses that may require adjustment, and expenses that may require annualization (or normalization).

Q. 40 Did the Company perform a cost of service analysis when preparing its application in the instant docket?

A. 40 Yes. Consistent with the prefiling review and analysis described above, the

Company conducted a cost of service analysis when preparing its application in the instant docket. The Regulation team also performed a review of work orders that were placed in service since the end of the certification period in the Company's last GRC through the end of the test year to identify any work orders that may not be appropriate for inclusion in the Company's proposed rate base.

Q. 41 Did the Company implement any enhanced processes as part of its GRC prefiling review?

A. 41 Yes. In addition to the Company's usual prefiling review, the Regulation team has pursued additional process enhancements with the goal of further increasing transparency and improving the review process. To that end, the Regulation team enlisted the assistance of the Company's Information Services department to identify and carry out technological enhancement initiatives to make the cost vetting process more efficient and accurate. The two departments collaborated, and continue to collaborate, to define what is needed from the business side, and to agree on solutions that could be implemented. For example, the Company worked with its expense report vendor to enhance the data provided to Southwest Gas by including an image ID for all receipts, along with the ability to associate a receipt with the accounting string(s) they are associated with on reports with expense report data. The previous capability permitted Southwest Gas to only download the receipts associated with entire expense reports. This capability was made available from the vendor starting with April 2023 receipts, and a dashboard that Regulation could use to query this data was put into production in late-August 2023. Regulation has started to test this dashboard.

Regulation continues to work with Internal Audit on updating and refining the "Meals" detailed reports and the "All P-Card transaction" reports it uses to review costs. In addition, Regulation provided updates for the scripts that are run against recorded expenses (both P-card transactions and vouched invoices) to flag expenses that may match the criteria of expenses the Company is not requesting recovery for in the instant application. The Company included any adjustments necessary in an effort to ensure the allocated expenses included in the Company's proposed cost of service were appropriate for consideration when establishing rates. Non-recoverable expenses were identified and are included in the Company's Cost of Service Adjustment reflected in Schedule H-5 in both Northern Nevada and Southern Nevada as summarized below.

The Company provided numerous communications and internal training sessions surrounding proper documenting and recording of costs since the last rate case. The Company will continue to do so on an ongoing basis. The Company enhanced its process of reviewing invoices and expense reports. It will continue to fine tune its communication and training based on findings during this ongoing review.

Q. 42 Please explain Schedule H-5, Cost of Service Analysis.

A. 42 This adjustment was made after an extensive review of test year expenses, as explained above. The purpose of the review and adjustment is to identify and include only those expenditures appropriate to recover as part of its cost of service to Nevada customers. This adjustment also adjusts the cost of service for any costs identified as out of period, non-recurring, or otherwise needing an accounting correction, and adjusted costs allocated from HoldCo to reflect an annualization of the allocation percentage. The impact of this adjustment is a reduction to operating expenses of approximately $544,000 in Southern Nevada and $66,000 in Northern Nevada.

Q. 43 Is the Company proposing to recover 100 percent of Board of Directors' compensation and related expenses?

A. 43 No. The Company removed the portion of BOD compensation related to interest earned on deferred compensation as discussed further below, and, after a comprehensive review, removed a number of other costs from consideration in the instant docket. During the test year, the BOD held several additional board meetings for various non-utility-related topics. The Company is not requesting recovery for the costs associated with those meetings. The Company removed costs related to the Mountain West sale, the Centuri spin, and other strategic transaction review costs. In addition, and as a result of the cost of service analysis discussed above, the Company removed costs it does not seek to recover in the instant docket. Other than the aforementioned costs, the Company is proposing to recover 100 percent of the remaining test year BOD compensation and related expenses allocable to Southwest Gas.

Q. 44 Please explain the annualization of the allocation of HoldCo costs to Southwest Gas

A. 44 At the beginning of the test year, HoldCo allocated FERC Account 930.2 costs to three entities: Southwest Gas Corporation (78 percent), Centuri Group ("Centuri") (11 percent), and Mountain West Holdings (11 percent). During the test year, Mountain West Holdings was sold, which increased Southwest Gas' allocation percentage to 89 percent, which was in effect for February and March 2023. Soon after the Mountain West Sale, the allocation percentage was updated, and Southwest Gas' allocation percentage was updated to 90.5 percent, which was effective starting in April 2023. The Holding Company is planning to spin Centuri, and it is anticipated that the spin will be completed by the time rates from this proceeding are effective. As such, Southwest will get a 100 percent allocation of HoldCo 930.2 costs as the only entity under HoldCo, and the Company is annualizing the allocation factor accordingly. The portion of Adjustment No. 5 increases operating expenses by $48,584 in Northern Nevada and $256,668 in Southern Nevada.

Q. 45 Are the BOD costs the Company seeks to recover in the instant docket reasonable?

A. 45 Yes. Company witness Frederica Harvey further discusses the reasonableness of the BOD compensation in her prepared direct testimony. Furthermore, a competent and engaged Board of Directors is necessary to its operations. The Company believes the Commission should find the amounts the Company seeks to recover for BOD compensation and related expenses prudently incurred and recoverable. The total BOD compensation and related expenses requested for recovery after the removal of certain expenses is $3,638,505. After allocation to Nevada, the jurisdictional amounts included in the Company's request are $986,899 in Southern Nevada and $186,810 in Northern Nevada.

Q. 46 Please explain Schedule H-12, Board of Directors – Interest Earned on Deferred Compensation.

A. 46 Consistent with prior Commission directives, the purpose of this adjustment is to remove interest earned on past and current BOD deferred compensation. This adjustment reduces operating expense in Southern Nevada and Northern Nevada by $166,146 and $30,699, respectively.

Q. 47 Please explain Schedule H-19, Variable Compensation Normalization.

A. 47 The Company is proposing to recover a normalized level of variable compensation with the exception of the non-utility amount identified below. Please refer to the prepared direct testimony of Company witness Frederica Harvey for evidence supporting the reasonableness of these compensation programs.

Q. 48 Please explain how the Company normalized variable compensation.

A. 48 The Company's normalization methodology for variable compensation is consistent with the methodology the Commission authorized in prior rate cases. The Company normalized the Long-Term Incentive compensation (Performance Share Plan and the Restricted Stock Plan) based on a three-year average of recorded expenses. The Company normalized the Management Incentive Plan (MIP) based on a three-year average of awarded percent of target on the test year salaries of eligible participants. Finally, the Company removed the amount related to the non-utility measure applicable to certain executives within these plans.

Q. 49 Was a discretionary bonus paid during the test year considered in the normalization of variable compensation?

A. 49 No. The 2022 awarded percent of target included in this rate case is for the awarded MIP only and does not take the discretionary bonus into consideration when calculating the normalized amount of MIP requested in this rate case.

Q. 50 What was the impact of this adjustment?

A. 50 This adjustment increases test year recorded system allocable expenses by $1,149,912, of which $311,899 was allocated to Southern Nevada and $59,039 was allocated to Northern Nevada.

VII. CERTIFICATION PERIOD ADJUSTMENTS

Q. 51 Are you sponsoring any adjustments within the certification period ending November 30, 2023?

A. 51 Yes. I am sponsoring Adjustment No. C2 which is contained in Schedule H-C2. This adjustment reflects the impact of a general wage increase on operating expense that was effective during the certification period. The test year number of employees was used in the certification period labor and labor loading adjustment. The general wage increase that was effective during the certification period was applied only to test year employees. The general wage increase also impacts wages subject to FICA and other payroll taxes, as well as the Company 401(k) match. Company witness Frederica Harvey supports the prudency of the general wage increase. After allocation, the labor and labor loading annualization adjustment at certification is estimated to increase operating expense by $1,962,319 in Southern Nevada and $460,704 in Northern Nevada. All Certification adjustments will be certified in Statement I.

VIII. STATEMENT P – RATEMAKING AND ACCOUNTING CHANGES

Q. 52 Please describe Statement P.

A. 52 Statement P provides a narrative description of changes in methodology and presentation of ratemaking items, as well as any changes in accounting methods, procedures, and allocations adopted by the Company since the test year in its most recent GRC.

The Company is presenting Statement P in three sections. The first section (Section 1) describes various ratemaking changes that require disclosure and their impact on the cost of service and rate base. This section encompasses adjustments being proposed for the first time, and adjustments or positions that are different from those proposed or accepted in prior rate cases. Any revenue requirement impact is also disclosed. The second section (Section 2) addresses categories of expense or rate base considered and disallowed in the past. Any revenue requirement impact is also disclosed. The third section (Section 3) addresses major changes in presentation that do not have a revenue requirement impact.

Board of Directors' Compensation and Related Expenses, Compensation, Directors and Officers (D&O) Liability Insurance, and the Excavation Damage O&M were included in the Company's Statement P in its most recent general rate case filing in Docket No. 21-09001. The Commission-approved Stipulation in Docket No. 21-09001 does not specifically address the aforementioned adjustments. Consequently, the Company is presenting those same items again herewith in this Statement P.

Q. 53 Please explain why the Company has not adjusted expenses for BOD compensation and related expenses.

A. 53 The Company is proposing to recover 100 percent of the adjusted BOD compensation and related expenses allocable to Southwest Gas as discussed in the cost of service analysis above, as well as 100 percent of Director and Officer (D&O) liability insurance premiums allocable to Southwest Gas. These proposals are reasonable and should be accepted by the Commission because a competent and engaged BOD is necessary and beneficial to Company operations, and, ultimately, its customers.

Q. 54 Are the Company's proposals to recover the costs 100 percent of adjusted BOD compensation and supporting expenses and D&O insurance premiums in this proceeding consistent with the Commission's findings and conclusions in the Company's last fully-litigated GRC?

A. 54 No. The Commission, in its Order in Docket No. 20-02023, found that 50 percent of the BOD compensation, supporting expenses, and D&O insurance premiums should be disallowed for ratemaking purposes.

Q. 55 Did the Commission's Order in Docket No. 20-02023 find that the expenses in question were imprudently incurred?

A. 55 No. The Commission did not find that BOD compensation, a base level of supporting expenses, or D&O insurance premiums were imprudent or otherwise unnecessary to run an investor-owned utility.

The Commission should consider the negative policy implications of adopting this "shared benefit" standard as opposed to the standard Southwest Gas recommends: recovery of all prudently incurred expenses. The prudency standard flows directly from the underlying regulatory compact that exists between Southwest Gas and the State of Nevada. The Company must recover its prudently incurred cost of service otherwise the Company is unfairly prevented from the opportunity to recover its authorized fair rate of return. A "shared benefit" standard is ill-defined, easily devolves into retrospective analyses, and fundamentally obscures the nature of the regulatory compact, which is not a relationship between ratepayers and shareholders, but, rather, a relationship between the utility and governmental entity with ultimate ratepayers in mind. The relationship ensures the utility will serve all customers in a given geographical region under regulatory oversight in exchange for exclusivity, recovery of all prudently incurred costs, and an opportunity at a fair rate of return on the utility's investment which translates into just and reasonable rates.

Q. 56 Please explain why the Company has not adjusted expenses for third-party damages that have been billed but not yet collected, as described in Section 2 of Schedule P.

A. 56 The Company utilizes accrual accounting methodology when accounting for billable third-party damages. When a billable third-party damage occurs, the Company generates an invoice to the party from which it seeks reimbursement. The accounting entry made at that time is a debit to accounts receivable and a credit to expense. When payment is received, the accounting entry is a debit to cash and credit to accounts receivable. Thus, the credit (reduction) to expense occurs in the same time period as the damage itself, ensuring compliance with the matching principle of accounting. Given that the credit to expense occurs at the time the invoice is created, an adjustment to reduce expense for billed but not yet collected invoices would inappropriately reduce expense twice for each billable third-party damage and violate the matching principle of accounting.

IX. AGA DUES

Q. 57 Please explain why the Company has not adjusted expenses for the lobbying portion of American Gas Association dues.

A. 57 Consistent with prior Commission directives, Southwest Gas is not requesting to recover the portion of American Gas Association (AGA) dues attributed to lobbying activities in the cost of service. In this case, of the total invoice of $720,064 before allocation to Nevada, the portion of AGA dues attributable to lobbying (3.4 percent, or $24,482) was charged to FERC Account 426.5 when the invoice was processed. Accordingly, this amount has already been excluded from the Company's cost of service and no adjustment is necessary.

Q. 58 Has the Company provided additional testimony regarding the customer benefits of the Company's AGA membership?

A. 58 Yes. For testimony describing the benefits that the Company's AGA membership provides from a pipeline safety, operational best practices, and innovative solutions for the safe and reliable delivery of natural gas, please see the prepared direct testimony of Company witness Jerome T. Schmitz. I provide additional testimony below of the benefits that the Company's AGA membership provides.

Q. 59 What are some of the additional benefits that the Company's AGA membership provides, in addition to those related to pipeline safety, operational best practices, and innovative solutions for the safe and reliable delivery of natural gas?

A. 59 The AGA provides many resources benefiting its individual members. The AGA serves as a leader of research and programs for the natural gas industry. The AGA's ability to concentrate its efforts solely on the natural gas industry allows individual gas utilities, such as Southwest Gas, to focus on regional service and business issues while remaining abreast of industry developments through its AGA membership. Southwest Gas can then implement the programs or research developed by the AGA as appropriate to help maximize its business efficiencies. The benefits of the AGA's research and programs include but are not limited to sustainability, physical and cyber infrastructure security, occupational safety, natural gas supply trends, and newly identified business processes.

Moreover, when a utility experiences a problem unique to the natural gas sector, the AGA serves as an intermediary for the exchange of approaches and solutions through direct information exchanges. Other informational exchanges include newsletters, magazines, workshops, and seminars on topics specific to the natural gas sector. AGA also compiles industry statistics that member utilities can use for benchmarking and other purposes. The customers of Southwest Gas benefit from the Company's membership in AGA because AGA can leverage the resources of member utilities nationwide and provide these services to AGA members at a lower cost than if each utility undertook the same efforts individually. The Commission should allow the Company to recover the non-lobbying portion of AGA dues allocated to Nevada because AGA membership directly enhances Southwest Gas' ability to provide safe, economic, efficient, and reliable operation and service to Nevada ratepayers.

X. UI PLANNER APPLICATION

Q. 60 Since you are responsible for the Regulatory and Revenue modules of UI Planner, can you further discuss the benefits the Company and its customers will realize from its investment in UI Planner?

A. 60 Yes. Company witness Raied N. Stanley provided an overview of the Strategic Financial and Regulatory Planning Project (SFRP) including procurement of UI Planner. Mr. Stanley's testimony provided overarching benefits, the Company's prudency in procuring UI Planner, and the reasonable costs incurred. I will discuss the anticipated benefits to be realized from the implementation of the Regulatory and Revenue modules of UI Planner from an end-user perspective.

Q. 61 What are some of the business needs that the implementation of the UI Planner Regulatory and Revenue models will help address?

A. 61 There has been an increasing need to modernize the company's Regulatory processes and capabilities, which have become more complex and are pushing the limits of Microsoft Excel. A modernized system is needed to manage general rate case filings, rate recovery mechanisms, and increased demands for timely information from regulators and management. UI Planner should be able to enable a more data-driven approach to analyzing and optimizing the business, as well as streamline the process to file rate cases and calculate the deferrals, revenue requirement, surcharges and related reporting requirements associated with the Company's various infrastructure and other tracker mechanisms.

Q. 62 What are some of the benefits that will be seen after the full implementation of UI Planner?

A. 62 There are many benefits that are expected to be realized through the full implementation of UI Planner, including but not limited to:

- Improved version control and transparency. UI has robust security that allows for definitions of who can access what in the system and has the functionality to lock models down so they cannot be changed.
- The ability to drill down to the source(s) of the numbers that are reported from the system.
- The functionality to create pre-defined reports that dynamically update when new account numbers or other chart of account items are added, eliminating blown links and time-intensive model updates that can happen in Excel.
- Large volumes of data are imported from various systems, including Oracle and PowerPlan, on a monthly basis. This allows the Regulation team to have enhanced focus on value-added analysis, rather than data entry.

- The ability to run different scenarios quickly with varying assumptions, providing timely answers to complex “what-if” questions.
- Enhance monitoring of the cost of service and analyzing causes of changes.
- Respond to financial data-related discovery with speed and accuracy.
- The ability to create Excel working models, which can be provided to meet filing requirements or in response to discovery requests.

<u>XI. CONCLUSION</u>

Q. 63 Does this conclude your prepared direct testimony?

A. 63 Yes.

SUMMARY OF QUALIFICATIONS
RANDI L. CUNNINGHAM

I graduated from the University of Washington in Seattle, Washington with a Bachelor of Arts in Business Administration, Accounting. My areas of concentration were accounting and finance. I graduated from the University of Nevada, Las Vegas with a Masters in Business Administration (MBA), with Beta Gamma Sigma honors. I am a Certified Management Accountant (CMA) and have the Certified in Strategy and Competitive Analysis (CSCA) credential, and a member of the Institute of Management Accountants.

One year before completing my bachelor's degree, I accepted employment at Washington Mutual Savings Bank in Seattle, Washington as an Asset/Liability Management intern. Upon graduation in 1993, I accepted a full-time position as a Financial Analyst Trainee in the Financial Forecasting Department. In 1994, I was promoted to Financial Analyst I. My responsibilities included assisting in the budget and forecasting process and performing various financial analyses.

In February 1995, I accepted a position as a Budget Analyst in the Budget and Forecasting Department at PriMerit Bank in Las Vegas, Nevada, which was a subsidiary of Southwest Gas at the time. In April 1996, I transferred to Southwest Gas as a Corporate Accountant I in the Accounting Control Department. In January 1998, I was promoted to Analyst I/Accounting. In February 1998, I transferred to the Revenue Requirements department as an Analyst. In January 2001 I was promoted to Specialist, in July 2003 I was promoted to Senior Specialist, in May 2007 I was promoted to Supervisor, and in April 2009 I was promoted to Manager. Subsequent to a reorganization in October 2014, I worked in the Regulation and Energy Efficiency department as a Regulatory Professional. In February 2021 I was promoted to Sr. Regulatory Professional, and in June 2022 I was promoted to my current position, in which I am responsible for the following: developing and ensuring compliance with regulatory cost accounting standards; leading the effort to build and implement the Regulatory and Revenue modules of the UI Planner application; providing mentorship to junior colleagues, reviewing and critiquing complex and technical analyses; and serving as a subject matter expert on all Company regulatory matters.

I have attended numerous training and technical conferences related to utility ratemaking, regulatory, and accounting issues.

I served as instructor for the Cost of Service Problem course at “The Basics” conference presented by the Center for Public Utilities at New Mexico State University and the National Association of Regulatory Utility Commissioners from 2003 to 2014.

Docket No. 23-09___

General Rate Case

Confidential Exhibit No._(RLC-1)

CONFIDENTIAL

SOUTHWEST GAS CORPORATION

Docket No. 23-09___

Confidential Exhibit No._(RLC-1)

Southwest Gas is providing this information pursuant to the protective agreements executed with Staff and BCP in the above-referenced docket.

AFFIRMATION OF RANDI L. CUNNINGHAM

Pursuant to NAC 703.710, Randi L. Cunningham affirms and declares the following:

1. I am over 18 years of age and am competent to testify to facts stated below which are based upon my personal knowledge.
2. That I am the person identified in the foregoing prepared testimony, including, where applicable, any exhibits.
3. That such testimony and exhibits were prepared by me or under my direction.
4. That the information appearing in my testimony and exhibits are true to the best of my knowledge and belief and that if I were asked the questions stated therein under oath, my answers would be the same.
5. Pursuant to NRS 53.045, I declare under penalty of perjury under the law of the State of Nevada that the foregoing is true and correct.

EXECUTED and DATED this 23 day of August, 2023

RANDI L. CUNNINGHAM