Groundwater Report

Spring 2013

San Joaquin County
Flood Control and Water Conservation District

San Joaquin County
Flood Control and Water Conservation District

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Copies of the Spring 2013 Groundwater Report may be purchased for $30 and 36”X48” Contour Maps for $25 each from:

San Joaquin County Department of Public Works
P.O. Box 1810
Stockton, California 95201
Make checks payable to: San Joaquin County Department of Public Works

Acknowledgements

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This Groundwater Report is a product of the commitment that the San Joaquin County Flood Control and Water Conservation District together with many other interested agencies made to sustain and enhance the groundwater resources of the Eastern San Joaquin Basin. The District extends thanks to…

California Water Service

City of Lathrop

City of Lodi

City of Manteca

City of Stockton Municipal Utilities Department

East Bay Municipal Utility District

Libby-Owens-Ford, Lathrop

Morada Area Association

Newark Sierra Paperboard Company

Pacific Gas and Electric Company

San Joaquin County Department of Public Works

State of California, Department of Water Resources, Central District

Stockton East Water District

United States Bureau of Reclamation

United States Geological Survey

Most of all, we would like to thank all of the individual well owners, who give us access to their wells and in some cases some of their time.

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San Joaquin County Flood Control and Water Conservation District
Spring 2013 Groundwater Report

Introduction

Since the fall of 1971, the San Joaquin County Flood Control and Water Conservation District has monitored groundwater levels and groundwater quality and has published the data in the Semi-annual Groundwater Report. This report utilizes data from federal, state and local government agencies as well as non-governmental sources.

Water level data is collected on a semi-annual basis, during the months of April and October, to observe groundwater levels before and after peak groundwater pumping conditions. Over 550 wells, of which 270 are measured by County staff, are included in the Monitoring Program. The exact number of wells varies from year to year, depending on circumstances such as destructions, new well construction, well accessibility, and well condition.

Purpose

The purpose of the Semi-annual Groundwater Report is to provide information on groundwater conditions in San Joaquin County and to publish the results of the groundwater monitoring program which consists of the following:

1. Monitor groundwater quality along a North-South line from the north of the City of Stockton to the City of Lathrop.
2. Measure groundwater levels on a County-wide basis.

In general, water quality data is more meaningful after peak production which usually occurs during the summer months. Therefore, groundwater quality data will be published only in the fall report. The groundwater depth and elevation data will be published both in the spring and fall.

Saline intrusion from the west is a continuing concern affecting the quality of groundwater in the Basin. Groundwater quality analysis is completed on an annual basis, from approximately 18 municipal and domestic supply wells (exact number varies from year to year) located in proximity to the saline front.

Procedure

Groundwater quality sampling is conducted on an annual basis during the month of October, along with the Fall Measurements. Approximately 18 wells are currently sampled. The exact number of wells may vary depending on well access and other conditions. Replicate groundwater samples (two) are analyzed for Chloride (Cl^-) using the Thomas Scientific 675 pH/ISE meter in conjunction with the ISE Cl^- Combination Electrode, and analyzed for Electrical Conductivity (EC) using DiST 3 by Hanna Instruments. Total Dissolved Solids (TDS) are calculated using the formula: TDS = 0.64 X EC (umhos). Data is then stored in a database for accessibility and reporting requirements.

Water Level Measurements are performed with the use of either a steel chain or sounder. Data is then immediately recorded in field books and then stored in a database for accessibility and reporting requirements.

Section 1– Annual Rainfall Distribution

Summary of Annual Rainfall Distribution

The groundwater basin in San Joaquin County responds to changes in annual precipitation. There are four total annual precipitation graphs and four monthly precipitation graphs included in this report (Figures 1-1 through 1-8). These graphs reflect three areas located across San Joaquin County and one area in Calaveras County. The station located at the Stockton Fire Station No. 4 as well as the station located in Tracy, has pertinent beginning in 1940. Lodi station has data from 1949 to 2013. The Camp Pardee station has data available from 1949 to 2013.

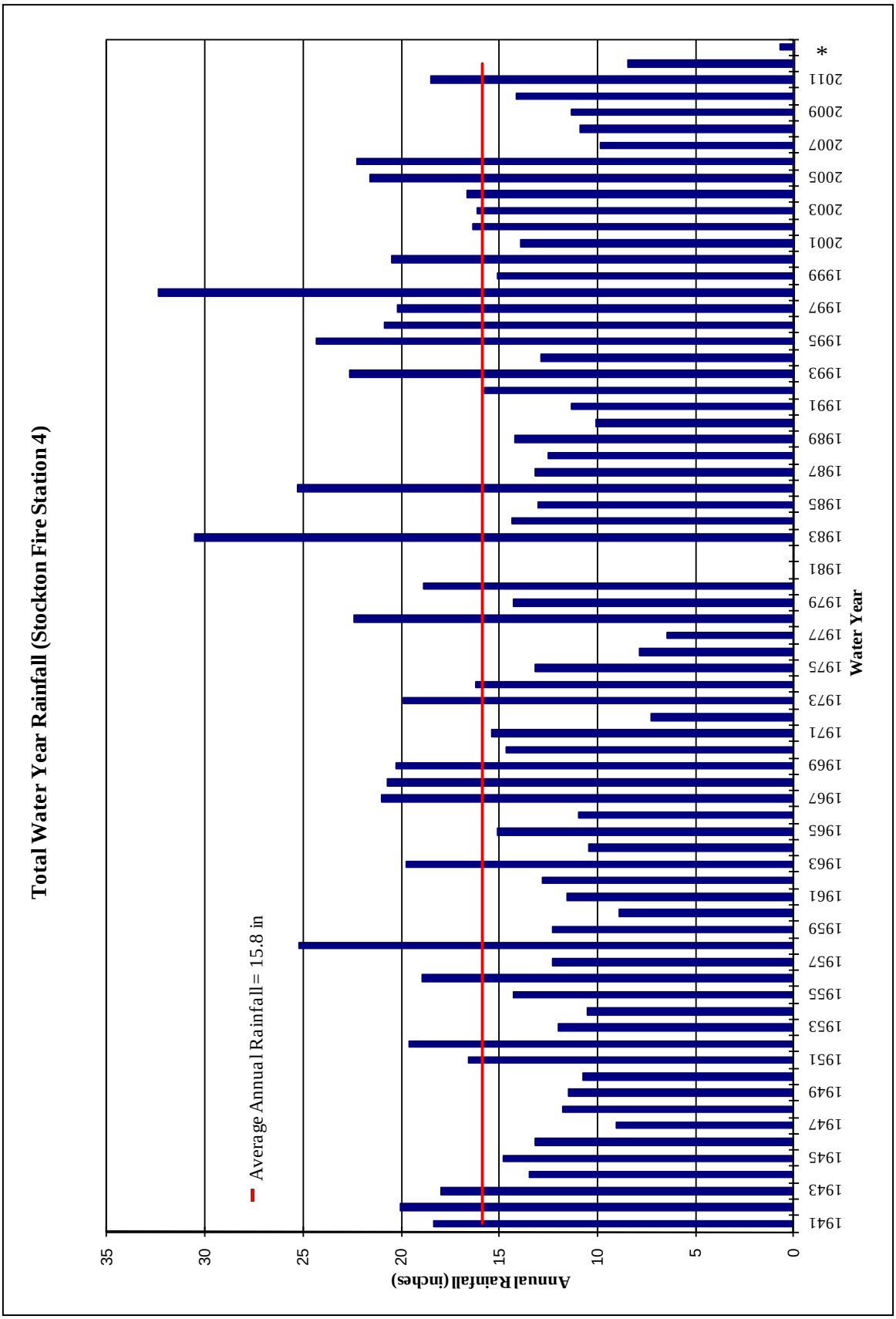


Figure 1-1 Total Annual Rainfall (Stockton Fire Station 4)

* Data for 2012-2013 Water Year is missing. Total in graph does not reflect actual precipitation totals.

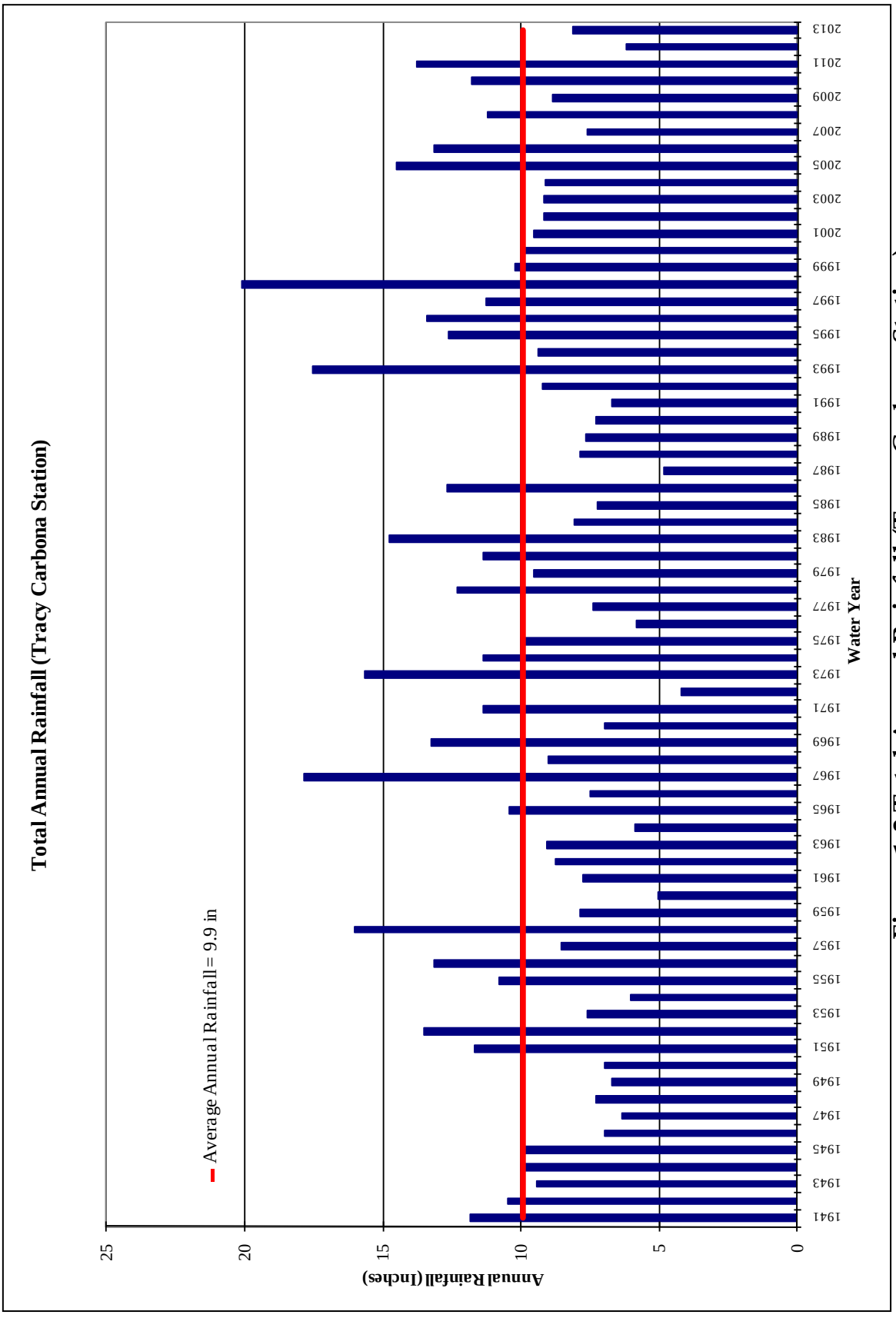


Figure 1-2 Total Annual Rainfall (Tracy Carbona Station)

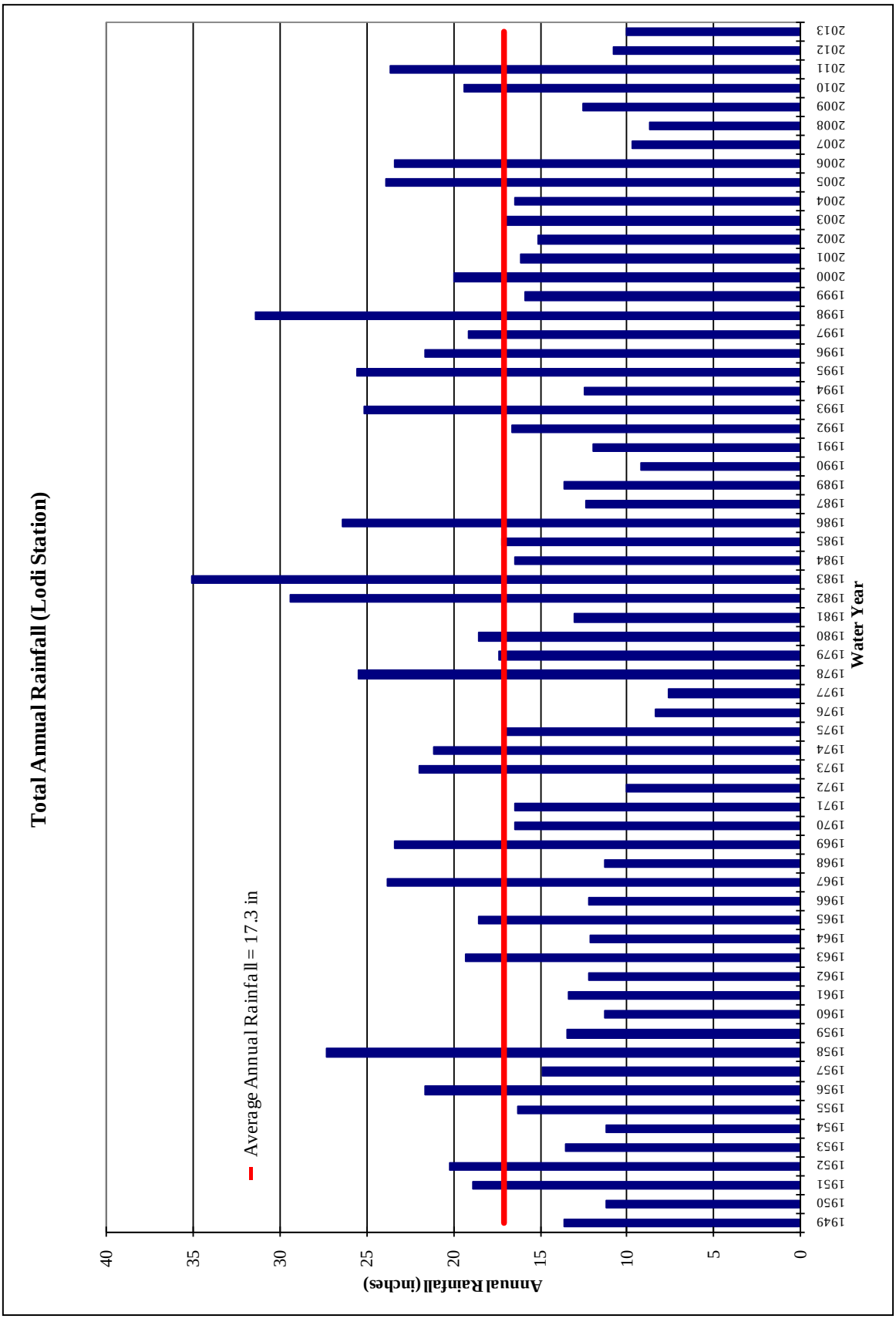


Figure 1-3 Total Annual Rainfall (Lodi Station)

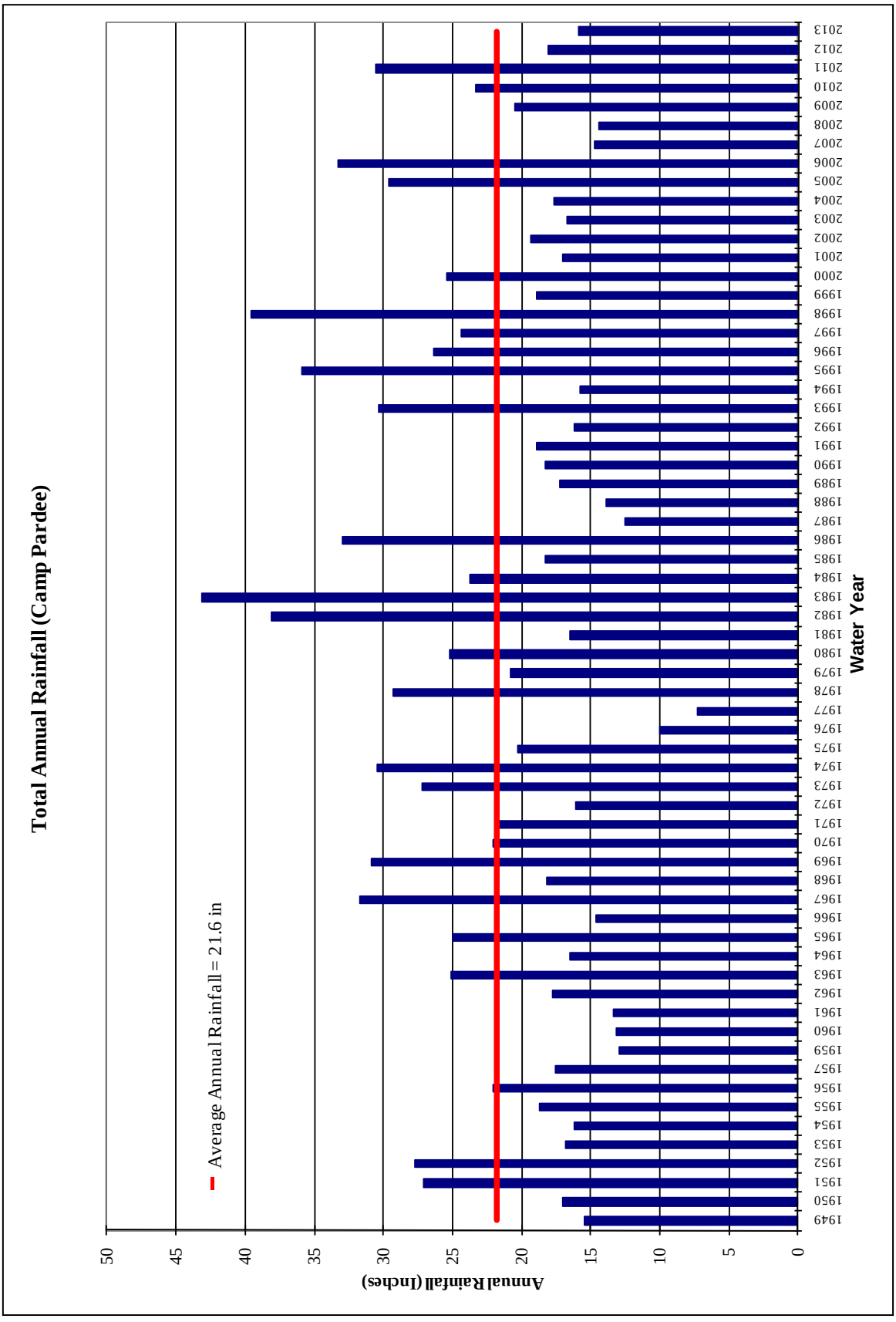
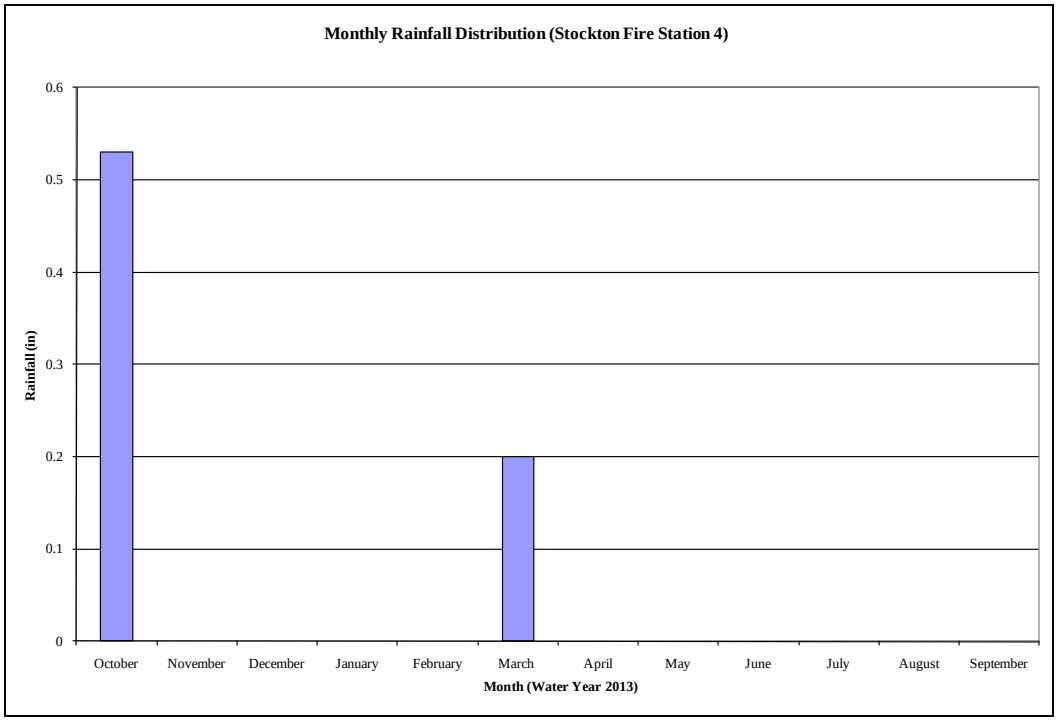


Figure 1-4 Total Annual Rainfall (Camp Pardee)

Monthly Rainfall Distribution



* Data for 2012-2013 Water Year is missing. Total in graph does not reflect actual precipitation totals.

Figure 1-5 Monthly Rainfall Distribution (Stockton Fire Station 4)

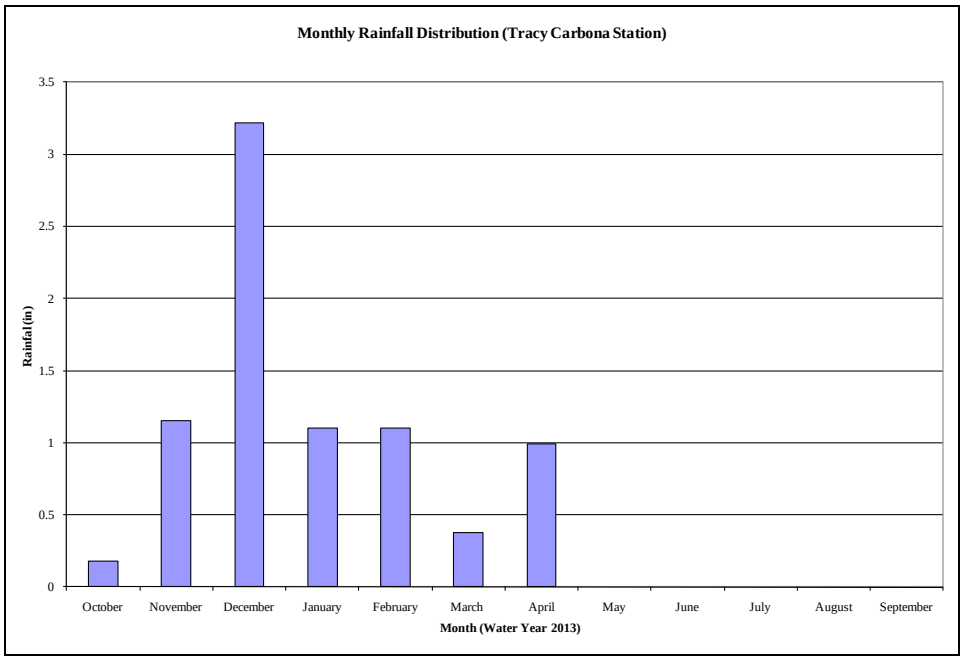


Figure 1-6 Monthly Rainfall Distribution (Tracy Carbona Station)

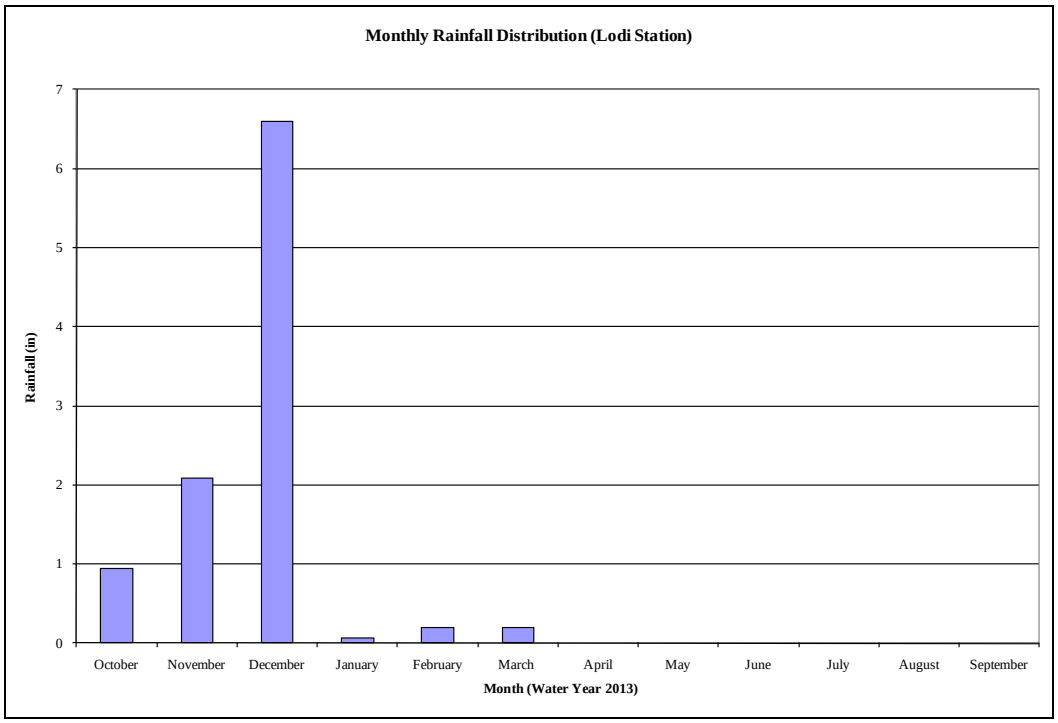


Figure 1-7 Monthly Rainfall Distribution (Lodi Station)

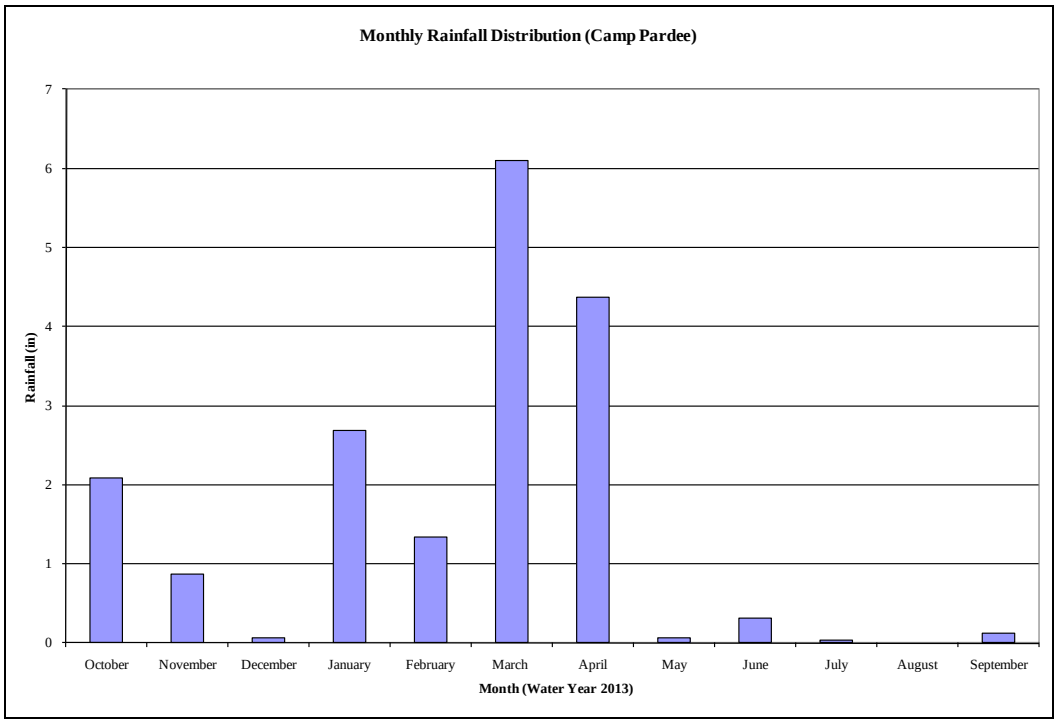


Figure 1-8 Monthly Rainfall Distribution (Camp Pardee)

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Section 2 – Groundwater Elevation Monitoring

Summary of Groundwater Elevations

The information contained in the Spring 2013 Groundwater Report is summarized as follows

GROUNDWATER LEVELS

Central San Joaquin Water Conservation District (CSJWCD) – Seventy wells are monitored in CSJWCD. Fifty-three wells were able to be compared. Fifty show decreases in groundwater levels. Three wells show an increase in groundwater levels.

North San Joaquin Water Conservation District (NSJWCD) – One-hundred thirty-one wells are monitored in NSJWCD. One-hundred nine wells were able to be compared. Forty-six wells decreased in groundwater levels. Sixty-two wells increased in groundwater levels. One wells experienced no change in groundwater level.

Oakdale Irrigation District (OID) – Six wells are monitored in the OID area. Four wells were able to be compared. Four wells shows a decrease in groundwater levels.

Stockton East Water District (SEWD) – One-hundred eleven wells are monitored in SEWD. Eighty-one wells were able to be compared. Fifty-eight wells decreased in groundwater levels. Twenty-two wells show increases in groundwater levels. One well experienced no change in groundwater level.

South San Joaquin Irrigation District (SSJID) – Fifty-three wells are monitored in the SSJID area. Forty-one wells were able to be compared. Thirty-three wells show decreases in groundwater levels. Seven wells show increases in groundwater levels. One well experienced no change in groundwater level.

Woodbridge Irrigation District (WID) – Forty-one wells are monitored in the WID. Thirty-six wells were able to be compared. Twenty-three wells decreased in groundwater levels. Eleven wells show increases in groundwater levels. No change was observed in two wells.

Southwest County Areas – Thirty-one wells are monitored across the Southwest are of the County. Twenty-seven wells were able to be compared. Nineteen wells descended in groundwater levels. Seven wells increased in groundwater levels. No change was observed in one well.

Table 2-1 Comparison of CSJWCD Water Levels

StateWellID	Spring 2013	Spring 2012	Change
01N07E11L001	-35.30	-31.50	-3.80
01N07E11M001	-36.70	-31.30	-5.40
01N07E13J002	-52.50	-44.50	-8.00
01N07E14J002	-43.10	-34.60	-8.50
01N07E14L001	-36.71	-36.61	-0.10
01N07E15M002	*	-26.10	*
01N07E24A001	*	-35.60	*
01N07E24R001	-40.50	-38.50	-2.00
01N07E26H003	*	-30.20	*
01N07E32A001	*	18.71	*
01N08E02B001	-36.24	-33.34	-2.90
01N08E02J001	-38.33	-31.03	-7.30
01N08E07M001	-49.60	-45.10	-4.50
01N08E09L001	-43.66	-44.56	0.90
01N08E11L001	*	-38.00	*
01N08E13J001	-28.20	-20.60	-7.60
01N08E15J001	-35.93	-31.73	-4.20
01N08E16G001	-40.20	-33.90	-6.30
01N08E16H002	-39.20	-32.30	-6.90
01N08E16P001	-35.75	-31.55	-4.20
01N08E18A002	-40.50	-35.00	-5.50
01N08E22J001	-34.50	-30.70	-3.80
01N08E26A002	-23.80	-19.20	-4.60
01N08E27R002	-27.60	-24.20	-3.40
01N08E28K001	-32.63	-25.73	-6.90
01N08E29M002	*	*	*
01N08E35F001	-25.90	-18.40	-7.50
01N08E35R002	-20.00	-22.00	2.00
01N08E36F001	-17.50	-13.10	-4.40
01N09E01C001	14.90	15.40	-0.50
01N09E05J001	*	-8.60	*
01N09E06N001	-34.50	-26.50	-8.00
01N09E13D001	8.50	18.60	-10.10
01N09E15B002	*	6.40	*
01N09E17D001	-21.00	-16.20	-4.80
01N09E17M001	-18.00	-15.90	-2.10
01N09E19C001	-24.00	-20.00	-4.00

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

StateWellID	Spring 2013	Spring 2012	Change
01N09E21J001	*	*	*
01N09E22G002	0.60	4.40	-3.80
01N09E26A001	12.37	18.57	-6.20
01N09E29R001	-4.00	-0.50	-3.50
01N09E30C005	*	-8.70	*
01N09E31J001	-4.45	-1.15	-3.30
01N09E35K001	14.28	6.28	8.00
01N09E36P001	*	*	*
01S07E01J001	-30.60	-19.80	-10.80
01S07E02J001	-26.00	-22.70	-3.30
01S07E10A001	-10.50	-7.90	-2.60
01S07E12H001	*	*	*
01S07E13J001	*	-3.40	------
01S08E04R001	-21.70	-19.50	-2.20
01S08E05A001	-23.90	*	*
01S08E05R001	*	-22.20	*
01S08E06D001	-31.10	-21.80	-9.30
01S08E09Q001	-13.90	-11.90	-2.00
01S08E11F001	-18.10	-10.00	-8.10
01S08E12B001	-9.00	-4.20	-4.80
01S08E14B001	-4.20	-3.70	-0.50
01S08E15A001	*	-9.60	*
01S08E15P001	-8.00	-3.60	-4.40
01S08E20B001	-8.20	-3.20	-5.00
01S08E23A001	*	*	*
01S08E27A001	7.25	9.65	-2.40
01S09E02R001	32.30	35.30	-3.00
01S09E05H002	4.50	8.00	-3.50
01S09E07A001	-2.60	2.70	-5.30
01S09E07N001	0.10	6.70	-6.60
01S09E09R001	15.70	20.30	-4.60
01S09E18R003	11.00	16.40	-5.40
01S09E19Q002	15.60	20.00	-4.40

Total Number of Wells	**70**
Total Number of Comparable Wells	**53**
Number of Wells with Decrease	**50**
Number of Wells with Increase	**3**
Number of Wells with No Change	**0**
Range of Change	**-10.80 to 8.0**
Average Change	**-4.37**

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

Table 2-2 Comparison of NSJWCD Water Levels

StateWellID	Spring 2013	Spring 2012	Change
03N06E04C001	-0.24	1.16	-1.40
03N06E24M003	-29.62	-26.82	-2.80
03N06E25C001	-30.45	-30.80	0.35
03N06E25H015	-36.67	-35.10	-1.57
03N07E02G003	-23.14	-18.24	-4.90
03N07E03R001	-21.80	-22.80	1.00
03N07E05D005	20.67	18.70	1.97
03N07E08B012	-15.55	-16.20	0.65
03N07E08E002	-23.00	-20.60	-2.40
03N07E09C001	-25.70	-20.20	-5.50
03N07E10L004	-27.41	-28.50	1.09
03N07E12P001	-39.15	-33.05	-6.10
03N07E15C004	-32.00	-29.50	-2.50
03N07E17A006	-27.06	-27.60	0.54
03N07E17D004	-25.40	-23.70	-1.70
03N07E17K002	-34.50	-31.70	-2.80
03N07E18D012	-27.50	-25.00	-2.50
03N07E18M002	-30.23	-31.10	0.87
03N07E19J004	-42.50	-38.00	-4.50
03N07E20C012	-32.74	-33.50	0.76
03N07E21L003	-39.20	-35.00	-4.20
03N07E22C011	-37.00	-37.50	0.50
03N07E23C002	*	-35.50	*
03N07E23K011	-41.54	-42.00	0.46
03N07E25G001	*	*	*
03N07E26G012	-43.27	-44.30	1.03
03N07E32Q012	-40.65	-41.30	0.65
03N07E33G002	-46.50	-43.20	-3.30
03N08E04Q001	-33.57	-33.60	0.03
03N08E05K011	-33.57	-33.40	-0.17
03N08E07D002	-37.46	-32.26	-5.20
03N08E07J001	-32.30	*	*
03N08E17B001	-38.77	-39.90	1.13
03N08E17Q011	-41.67	-42.60	0.93
03N08E19C001	*	*	*
03N08E19M003	-42.17	-43.00	0.83
03N08E22A001	-44.00	-41.60	-2.40

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

StateWellID	Spring 2013	Spring 2012	Change
03N09E05D001	*	*	*
04N06E02R011	-17.51	-18.10	0.59
04N06E03A012	1.50	-5.30	6.80
04N06E05Q001	-5.88	-1.68	-4.20
04N06E06N012	-4.60	2.40	-7.00
04N06E12C004	-28.00	-27.60	-0.40
04N06E12N002	*	*	*
04N06E15B002	-10.70	-6.90	-3.80
04N06E16A011	-3.76	-2.90	-0.86
04N06E16C001	*	-12.50	*
04N06E16K011	3.44	4.60	-1.16
04N06E23D004	-11.11	-12.70	1.59
04N06E23K00	-3.00	-5.00	2.00
04N06E24F001	-15.00	-13.50	-1.50
04N06E25B001	-7.60	-7.60	0.00
04N06E25R001	-2.00	0.00	-2.00
04N06E27B012	*	*	*
04N06E27D002	15.50	16.60	-1.10
04N06E27Q012	16.88	14.90	1.98
04N07E01B011	*	-32.00	*
04N07E02R001	-31.34	-31.80	0.46
04N07E04B012	*	-35.80	------
04N07E04Q012	-34.01	-35.00	0.99
04N07E07A001	*	*	*
04N07E07H011	-31.24	-32.00	0.76
04N07E11D012	-32.03	-32.70	0.67
04N07E12E001	-35.30	-32.00	-3.30
04N07E12G012	-29.44	-29.50	0.06
04N07E14P011	-26.01	-26.20	0.19
04N07E15B012	-29.79	*	*
04N07E16D001	-31.24	-31.70	0.46
04N07E17J013	-24.64	-24.90	0.26
04N07E17N001	-28.30	-26.10	-2.20
04N07E19K001	-19.10	-16.60	-2.50
04N07E19R011	-15.41	-15.20	-0.21
04N07E20H003	*	-29.00	*
04N07E21F001	*	-21.30	*
04N07E23J012	-21.53	-22.30	0.77
04N07E24N002	-21.63	-21.90	0.27

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

StateWellID	Spring 2013	Spring 2012	Change
04N07E25G015	-19.04	-19.10	0.06
04N07E27C002	-18.50	-19.00	0.50
04N07E28J002	-25.70	-15.20	-10.50
04N07E33H001	24.50	26.50	-2.00
04N07E34K011	-6.53	-5.90	-0.63
04N07E35C002	-9.43	*	*
04N07E35E013	-10.03	-10.40	0.37
04N07E36L001	-20.50	-20.70	0.20
04N08E01K001	51.53	50.20	1.33
04N08E02E011	-5.07	-6.70	1.63
04N08E04P014	-24.57	-23.90	-0.67
04N08E06C002	-30.67	-31.27	0.60
04N08E06N002	-35.70	-33.10	-2.60
04N08E11M012	-2.47	-3.30	0.83
04N08E12A011	76.73	77.00	-0.27
04N08E12B011	52.33	51.80	0.53
04N08E12N001	28.23	29.30	-1.07
04N08E14B011	3.23	6.90	-3.67
04N08E14K001	-3.10	-1.10	-2.00
04N08E15D011	-15.27	-14.10	-1.17
04N08E15J011	-8.97	-10.00	1.03
04N08E17A001	-26.50	-22.30	-4.20
04N08E17J001	-25.50	-23.30	-2.20
04N08E21M001	-29.10	-27.20	-1.90
04N08E22C015	-14.77	-15.50	0.73
04N08E26A012	-6.07	-8.40	2.33
04N08E27J011	-14.47	-16.50	2.03
04N08E28E001	-25.36	-24.46	-0.90
04N08E32N001	-33.10	-30.70	-2.40
04N08E34Q011	-28.16	-28.60	0.44
04N09E06L011	115.83	113.10	2.73
04N09E07D012	84.53	84.40	0.13
04N09E07E011	92.13	90.50	1.63
04N09E16Q002	168.63	*	*
04N09E17E001	144.23	141.40	2.83
04N09E18A011	156.83	154.30	2.53
04N09E18D002	56.63	55.00	1.63
04N09E18N011	27.83	27.20	0.63
04N09E20M001	119.64	116.00	3.64

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

StateWellID	Spring 2013	Spring 2012	Change
04N09E21A001	172.14	170.60	1.54
04N09E28C002	188.04	185.90	2.14
04N09E31M001	*	-16.10	*
05N06E36R001	*	-27.10	*
05N07E31J001	*	*	*
05N07E31Q001	*	*	*
05N07E34G001	*	-41.20	*
05N07E34Q001	-45.90	-39.00	-6.90
05N08E24Q011	55.63	53.30	2.33
05N08E25P011	53.53	50.50	3.03
05N08E32R011	-28.27	-29.00	0.73
05N08E35K012	4.53	2.80	1.73
05N09E30C011	161.83	159.50	2.33
05N09E30M011	146.53	144.80	1.73
05N09E31L011	129.23	127.90	1.33
03N06E36N001	*	*	*

Total Number of Wells	**131**
Total Number of Comparable Wells	**109**
Number of Wells with Decrease	**46**
Number of Wells with Increase	**62**
Number of Wells with No Change	**1**
Range of Change	**-10.50 to 6.80**
Average Change	**-0.47**

Table 2-3 Comparison of OID Water Levels

StateWellID	Spring 2013	Spring 2012	Change
01S09E11J002	36.20	40.90	-4.70
01S09E14K001	40.11	43.91	-3.80
01S09E21J002	39.10	41.80	-2.70
01S09E23N001	49.00	51.90	-2.90
01S09E24R001	67.10	*	*
01S09E28M002	38.70	*	*

Total Number of Wells	**6**
Total Number of Comparable Wells	**4**
Number of Wells with Decrease	**4**
Number of Wells with Increase	**0**
Number of Wells with No Change	**0**
Range of Change	**-4.70 to -2.70**
Average Change	**-3.53**

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

Table 2-4 Comparison of SEWD Water Levels

StateWellID	Spring 2013	Spring 2012	Change
01N06E05M004	*	*	*
01N06E23J001	*	-7.60	*
01N06E27R002	-9.70	-5.60	-4.10
01N07E01A002	62.50	*	*
01N07E01M002	51.00	-45.20	*
01N07E02G001	-41.20	-38.10	-3.10
01N07E03L001	*	*	*
01N07E03M001	1.00	*	*
01N07E04R001	-15.50	-11.80	-3.70
01N07E08B001	*	*	*
01N07E09E004	-21.60	-21.50	-0.10
01N07E09H001	-24.70	-23.00	-1.70
01N07E09Q003	-29.00	-35.50	6.50
01N07E10D001	-22.60	-18.60	-4.00
01N07E10G001	*	-28.50	*
01N07E19G001	*	-16.50	*
01N07E20G001	-23.00	-19.80	-3.20
01N07E21R001	*	-25.00	*
01N08E03P001	-50.50	-39.00	-11.50
01N08E04E001	-47.00	-44.00	-3.00
01N09E05B001	-16.29	-14.49	-1.80
01S06E01C002	-3.00	-4.40	1.40
01S06E02D004	*	*	*
01S06E02G002	-2.47	-3.27	0.80
01S06E04J001	0.00	-1.50	1.50
01S06E10G001	-5.30	-14.00	8.70
01S06E11E001	0.17	-1.43	1.60
01S06E12P001	0.92	-0.58	1.50
01S06E14F001	0.90	-0.60	1.50
01S07E05A001	28.50	*	*
01S07E06M002	-2.50	-2.70	0.20
01S07E08J002	-2.50	-0.80	-1.70
02N06E11L001	*	*	*
02N06E24F001	-30.00	-28.50	-1.50
02N06E32G001	*	-8.59	*
02N07E03D001	-49.00	-50.50	1.50
02N07E08D001	-45.20	-49.20	4.00

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

StateWellID	Spring 2013	Spring 2012	Change
02N07E08K003	-51.00	-50.90	-0.10
02N07E08R002	-49.34	-44.34	-5.00
02N07E10F002	-51.80	*	*
02N07E11F001	-48.50	-46.50	-2.00
02N07E11R002	-52.00	-49.00	-3.00
02N07E12A003	-48.05	-41.85	-6.20
02N07E15C001	-54.30	-52.80	-1.50
02N07E16F002	-52.44	-51.24	-1.20
02N07E16L001	-49.60	-50.30	0.70
02N07E20N002	-36.40	-38.00	1.60
02N07E21A002	-53.81	-52.41	-1.40
02N07E21K002	-48.40	-46.00	-2.40
02N07E21N001	*	*	*
02N07E23B001	-57.00	-53.90	-3.10
02N07E24B001	-54.70	-49.70	-5.00
02N07E24J001	*	*	*
02N07E24Q001	-61.00	-58.80	-2.20
02N07E26H003	-55.00	-50.50	-4.50
02N07E26N001	-51.20	-46.40	-4.80
02N07E28K002	-50.30	-45.60	-4.70
02N07E28N004	-40.50	-37.40	-3.10
02N07E28P001	-45.40	-42.00	-3.40
02N07E29B001	-42.50	-39.30	-3.20
02N07E29M002	-36.50	-33.00	-3.50
02N07E30E001	*	-29.70	*
02N07E30H001	-37.50	-33.70	-3.80
02N07E31M001	-22.30	-19.80	-2.50
02N07E32J002	-31.00	-33.50	2.50
02N07E32M002	-26.00	-25.50	-0.50
02N07E32R001	-28.00	-25.10	-2.90
02N07E33L001	-31.00	-28.00	-3.00
02N07E34R001	-29.70	-25.60	-4.10
02N07E35L001	*	*	*
02N07E36H001	-53.00	-51.50	-1.50
02N07E36P002	*	-44.93	*
02N08E03G002	-37.70	-37.10	-0.60
02N08E04C001	-46.50	-46.90	0.40
02N08E05C001	-48.00	-49.00	1.00
02N08E08N001	-50.50	-49.50	-1.00
02N08E09G002	-50.00	-50.00	0.00

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

StateWellID	Spring 2013	Spring 2012	Change
02N08E10H002	-44.10	-42.60	-1.50
02N08E12C002	*	*	*
02N08E13K001	-35.60	*	*
02N08E14C001	-42.00	-40.50	-1.50
02N08E15M002	-46.20	-44.30	-1.90
02N08E16D001	-48.30	-48.60	0.30
02N08E18C001	-51.70	-63.70	12.00
02N08E20F001	-52.80	-50.40	-2.40
02N08E24J001	*	-53.10	*
02N08E24P001	-36.40	-34.20	-2.20
02N08E28H002	*	-49.10	*
02N08E32L002	-49.20	-46.80	-2.40
02N08E33E001	-53.10	-43.60	-9.50
02N09E03A001	60.10	60.80	-0.70
02N09E04H001	*	*	*
02N09E05H001	-9.30	-4.80	-4.50
02N09E05N001	-17.49	-15.89	-1.60
02N09E08N001	*	-23.40	*
02N09E09D001	-59.80	*	*
02N09E18Q001	-33.60	-35.90	2.30
02N09E22D001	*	9.60	*
02N09E28N001	-9.10	-9.00	-0.10
03N07E35C002	-51.30	-48.80	-2.50
03N07E35L001	-48.50	-51.50	3.00
03N07E36J001	-46.30	-45.30	-1.00
03N08E27R001	-45.00	-41.80	-3.20
03N08E32P001	-46.02	-42.42	-3.60
03N09E25R001	85.50	85.70	-0.20
03N09E36G001	*	*	*
02N06E03A003	-31.80	-32.10	0.30
02N06E06C002	-12.70	-13.90	1.20
02N06E13R002	-35.50	*	*
02N06E24J002	-31.30	-29.70	-1.60
03N06E35P002	-28.64	-26.84	-1.80

Total Number of Wells	**111**
Total Number of Comparable Wells	**81**
Number of Wells with Decrease	**58**
Number of Wells with Increase	**22**
Number of Wells with No Change	**1**
Range of Change	**-11.50 to 12.0**
Average Change	**-1.34**

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

Table 2-5 Comparison of SSJID Water Levels

StateWellID	Spring 2013	Spring 2012	Change
01S06E15F001	*	0.01	*
01S06E23C003	5.03	4.73	0.30
01S06E26K001	5.64	*	*
01S07E09Q001	1.63	4.23	-2.60
01S07E14M001	1.90	2.40	-0.50
01S07E14P003	-2.50	1.70	-4.20
01S07E15F002	-0.10	1.80	-1.90
01S07E17N002	*	*	*
01S07E18L001	6.77	6.37	0.40
01S07E21G001	15.95	15.55	0.40
01S07E25E001	6.50	12.50	-6.00
01S07E25R001	15.05	16.85	-1.80
01S07E26G001	10.00	11.50	-1.50
01S07E27K001	4.00	11.80	-7.80
01S07E28D001	*	12.85	*
01S07E30R001	11.26	13.06	-1.80
01S07E36D001	21.15	20.35	0.80
01S08E19R001	-2.70	6.80	-9.50
01S08E25Q001	*	25.00	*
01S08E29K001	7.50	10.00	-2.50
01S08E30C002	2.50	8.40	-5.90
01S08E34Q001	19.36	22.36	-3.00
01S08E35R002	*	30.87	*
01S09E29M002	31.50	33.20	-1.70
01S09E33J002	54.62	56.32	-1.70
01S09E33P001	54.41	52.91	1.50
01S09E34A001	54.50	57.70	-3.20
02S07E07D002	9.50	9.90	-0.40
02S07E07Q001	25.86	*	*
02S07E08R001	28.16	28.96	-0.80
02S07E10B002	26.16	*	*
02S07E11N002	33.00	34.60	-1.60
02S07E12G001	*	*	*
02S07E12R001	26.45	27.35	-0.90
02S07E12R002	29.55	31.45	-1.90
02S07E19H001	19.50	20.00	-0.50
02S07E20R002	25.36	25.46	-0.10

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

StateWellID	Spring 2013	Spring 2012	Change
02S07E22N002	*	*	*
02S07E24R002	*	37.85	*
02S07E26B001	30.00	30.90	-0.90
02S08E04M001	18.00	24.00	-6.00
02S08E06J001	16.00	22.90	-6.90
02S08E07R001	32.00	34.50	-2.50
02S08E08A001	25.00	27.60	-2.60
02S08E08E001	25.20	26.70	-1.50
02S08E09J001	37.46	37.16	0.30
02S08E12D001	38.67	41.37	-2.70
02S08E14E001	44.67	48.77	-4.10
02S09E03K001	*	61.20	*
02S09E07D001	41.29	42.39	-1.10
02S09E11K001	74.94	75.84	-0.90
02S09E12R001	70.55	69.95	0.60
02S09E19B002	59.30	59.30	0.00

Total Number of Wells	**53**
Total Number of Comparable Wells	**41**
Number of Wells with Decrease	**33**
Number of Wells with Increase	**7**
Number of Wells with No Change	**1**
Range of Change	**-9.50 to 1.50**
Average Change	**-2.11**

Table 2-6 Comparison of South West County Area Water Levels

StateWellID	Spring 2013	Spring 2012	Change
01S05E31R002	1.30	1.10	0.20
01S09E11J001	41.50	*	*
01S09E13K001	*	56.42	*
01S09E15P001	38.90	41.30	-2.40
01S09E16R001	35.39	37.89	-2.50
01S09E21J001	42.60	44.90	-2.30
01S09E22L001	40.90	43.10	-2.20
01S09E23A001	51.92	53.72	-1.80
01S09E26A001	59.62	59.72	-0.10
02S04E15R001	56.30	54.50	1.80
02N06E01H001	-37.90	-37.60	-0.30

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

StateWellID	Spring 2013	Spring 2012	Change
02N06E01H002	-39.00	-37.80	-1.20
02N07E07G002	-43.10	-42.20	-0.90
02N07E07G003	-42.20	-41.00	-1.20
02S05E08B001	-0.70	-0.70	0.00
02S05E13N001	14.50	14.30	0.20
02S06E10K001	2.00	3.50	-1.50
02S06E11J001	12.86	16.76	-3.90
02S06E26B001	7.00	7.80	-0.80
02S06E27E001	9.00	11.20	-2.20
02S06E31N001	54.30	55.50	-1.20
02S06E31N001	57.88	55.50	2.38
02S07E31N001	12.00	15.50	-3.50
02S08E17N002	27.36	27.66	-0.30
03S05E04H001	*	57.50	*
03S06E03F002	13.50	16.00	-2.50
03S06E23C001	*	15.80	*
03S06E27N001	72.80	72.60	0.20
03S06E27N001	76.43	72.60	3.83
03S07E05J001	24.96	24.56	0.40
03S07E06Q001	19.36	18.86	0.50
04N07E18M001	-25.09	-25.59	0.50
02S06E25J001	15.50	15.80	-0.30

Total Number of Wells	**33**
Total Number of Comparable Wells	**29**
Number of Wells with Decrease	**19**
Number of Wells with Increase	**9**
Number of Wells with No Change	**1**
Range of Change	**-3.90 to 3.83**
Average Change	**-0.73**

Table 2-7 Comparison of WID Water Levels

StateWellID	Spring 2013	Spring 2012	Change
03N05E13L001	-8.00	-9.50	1.50
03N05E14C001	-8.80	-4.80	-4.00
03N05E24L001	-2.24	-4.14	1.90
03N06E04P012	-8.16	0.00	-8.16
03N06E05C002	-0.75	0.20	-0.95
03N06E05N003	-11.00	-9.00	-2.00
03N06E07D013	-4.18	-5.80	1.62

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

StateWellID	Spring 2013	Spring 2012	Change
03N06E07H003	-14.50	-12.30	-2.20
03N06E10D001	-9.40	-11.40	2.00
03N06E15C004	-19.30	-21.80	2.50
03N06E17A004	-24.20	-21.70	-2.50
03N06E18M003	-14.10	-13.10	-1.00
03N06E20D002	-17.00	-16.50	-0.50
03N06E26P002	-29.70	-28.10	-1.60
03N06E27E001	-26.20	-28.20	2.00
03N06E29C001	-22.80	-22.80	0.00
03N06E30R001	-25.00	-20.40	-4.60
03N06E32R001	-20.50	-20.50	0.00
04N05E03D003	*	-2.10	*
04N05E09D001	*	*	*
04N05E10K001	-3.50	-4.20	0.70
04N05E13C012	2.47	1.80	0.67
04N05E13H001	-1.00	0.50	-1.50
04N05E13R004	-1.70	0.10	-1.80
04N05E14B002	-0.40	0.60	-1.00
04N05E14P001	2.00	0.00	2.00
04N05E22H001	-4.00	-5.00	1.00
04N05E24J004	0.90	3.20	-2.30
04N05E26F001	0.20	0.40	-0.20
04N05E36H003	0.50	0.90	-0.40
04N06E17G004	1.50	4.00	-2.50
04N06E18R012	2.50	3.80	-1.30
04N06E19F001	*	6.60	*
04N06E19R012	3.22	4.10	-0.88
04N06E21D001	8.54	11.84	-3.30
04N06E29A001	*	*	*
04N06E29N002	-2.00	0.30	-2.30
04N06E30E001	3.20	5.20	-2.00
04N06E34J002	19.40	19.80	-0.40
05N05E28L003	-1.50	-2.10	0.60
05N05E32M001	*	*	*

Total Number of Wells	**41**
Total Number of Comparable Wells	**36**
Number of Wells with Decrease	**23**
Number of Wells with Increase	**11**
Number of Wells with No Change	**2**
Range of Change	**-8.16 to 2.50**
Average Change	**-0.86**

*Measurement wasn't able to be completed due to one or more of the following reasons: pumping, pump house locked, unable to get tape in casing, insects or dogs.

HYDROGRAPHS

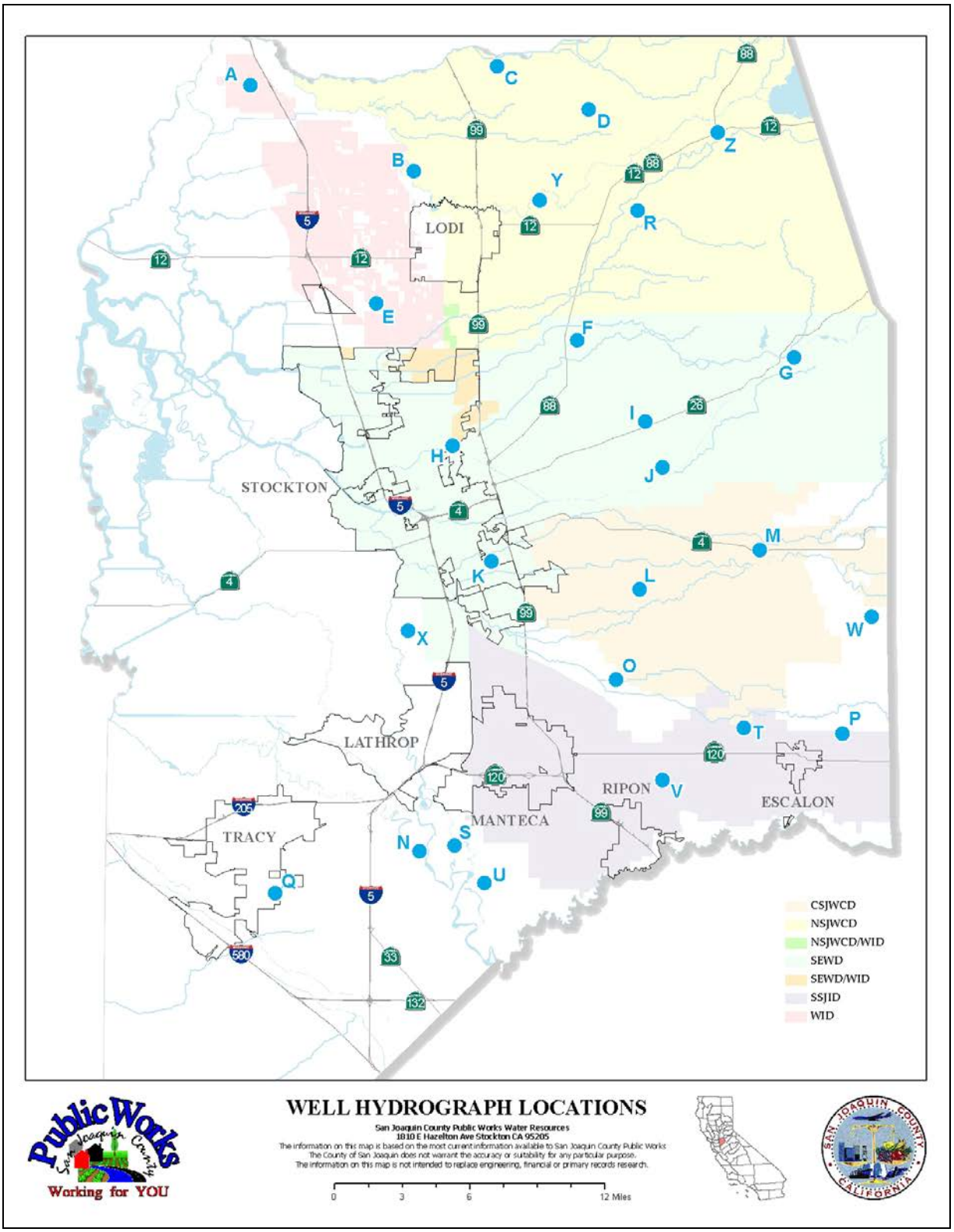

Figure 2-1 Well Hydrograph Locations

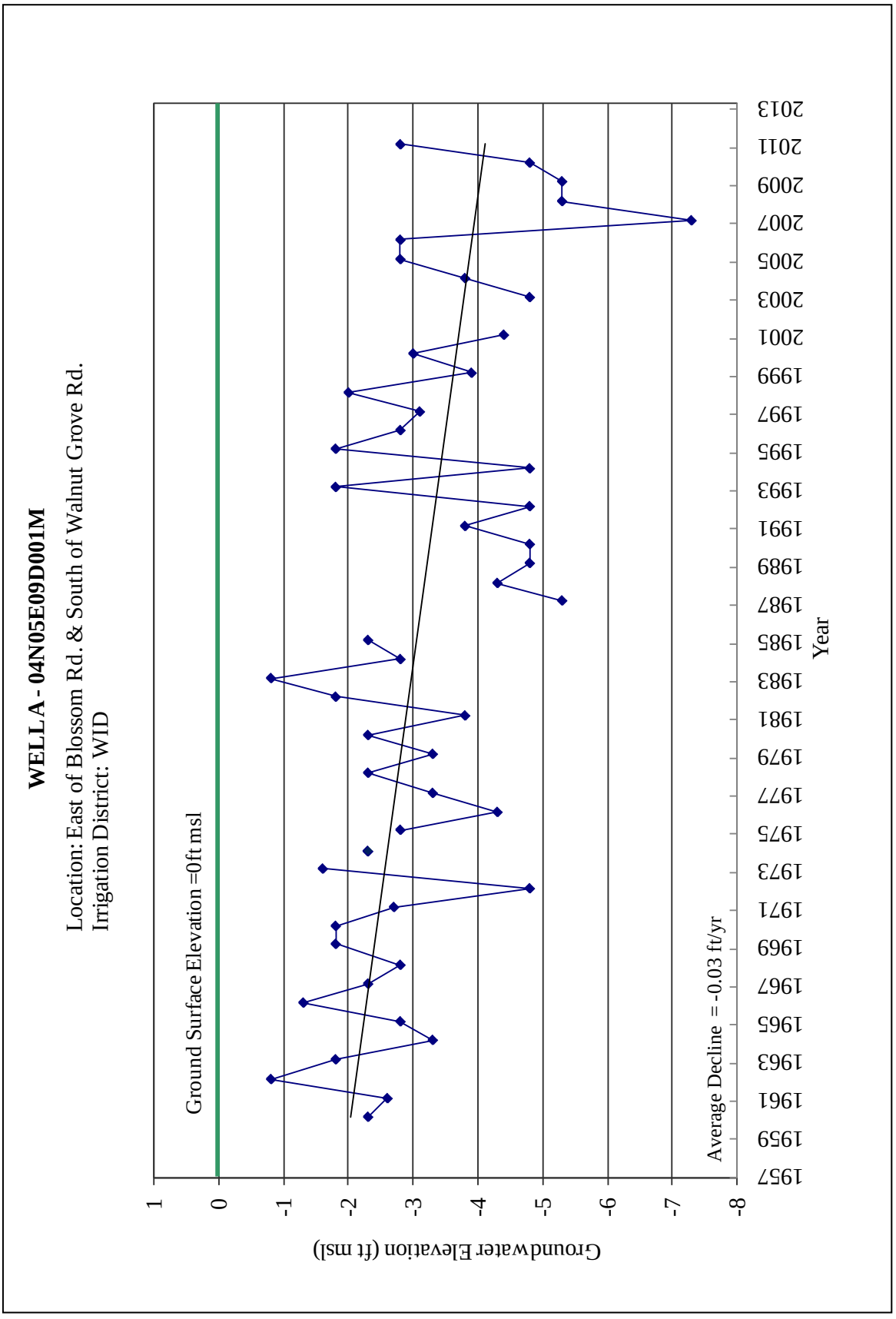

Figure 2-2 Spring Hydrograph Well A

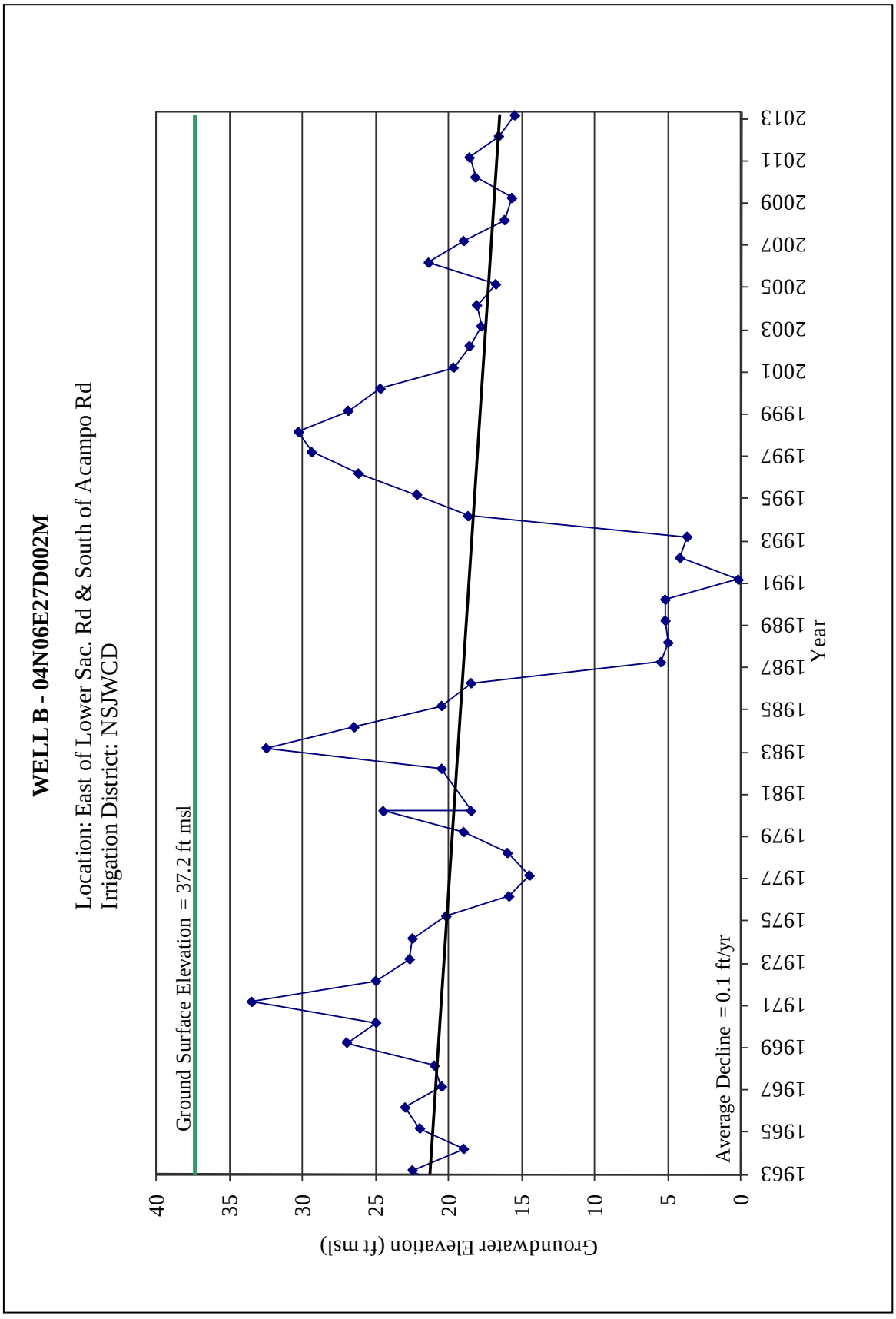

Figure 2-3 Spring Hydrograph Well B

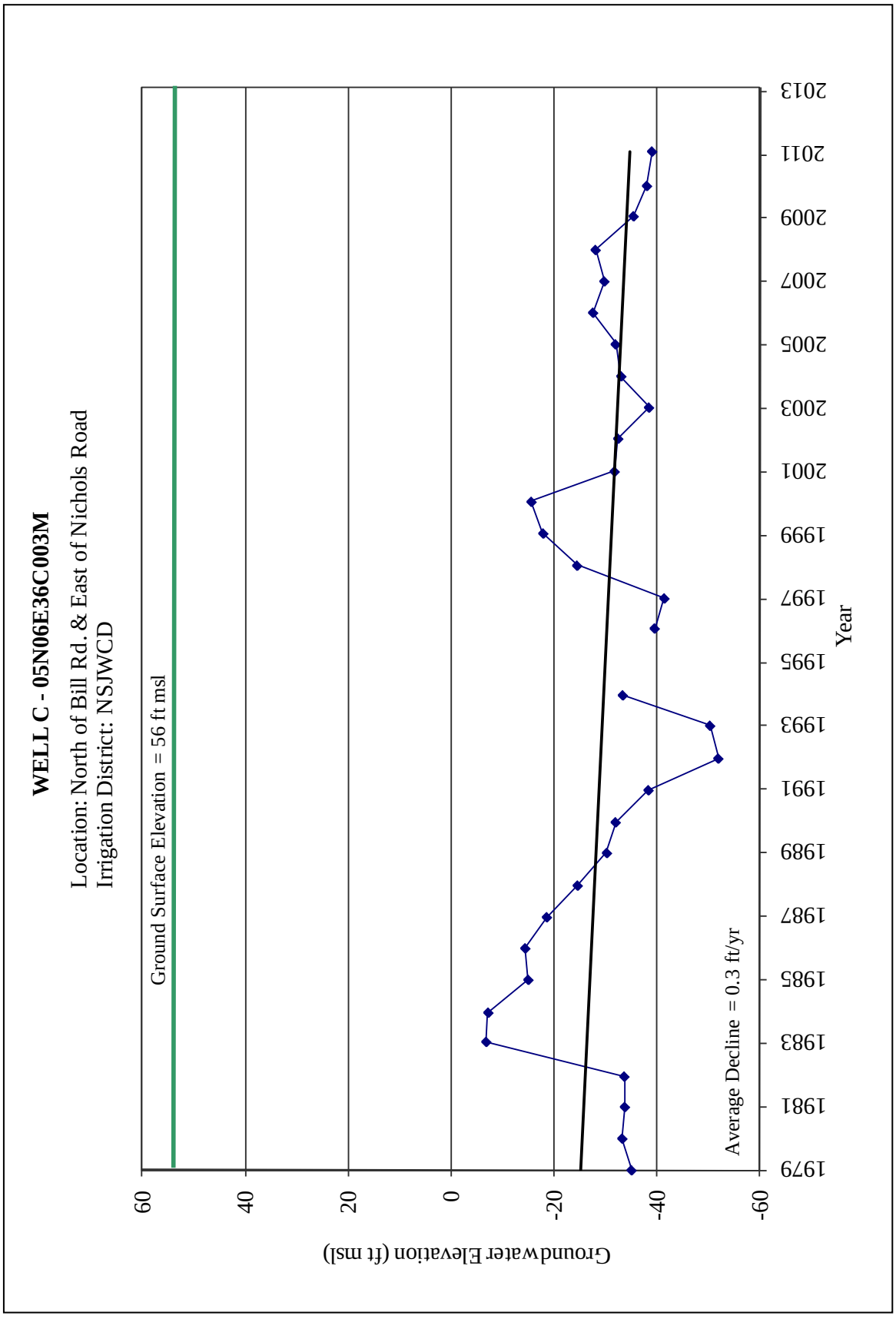

Figure 2-4 Spring Hydrograph Well C

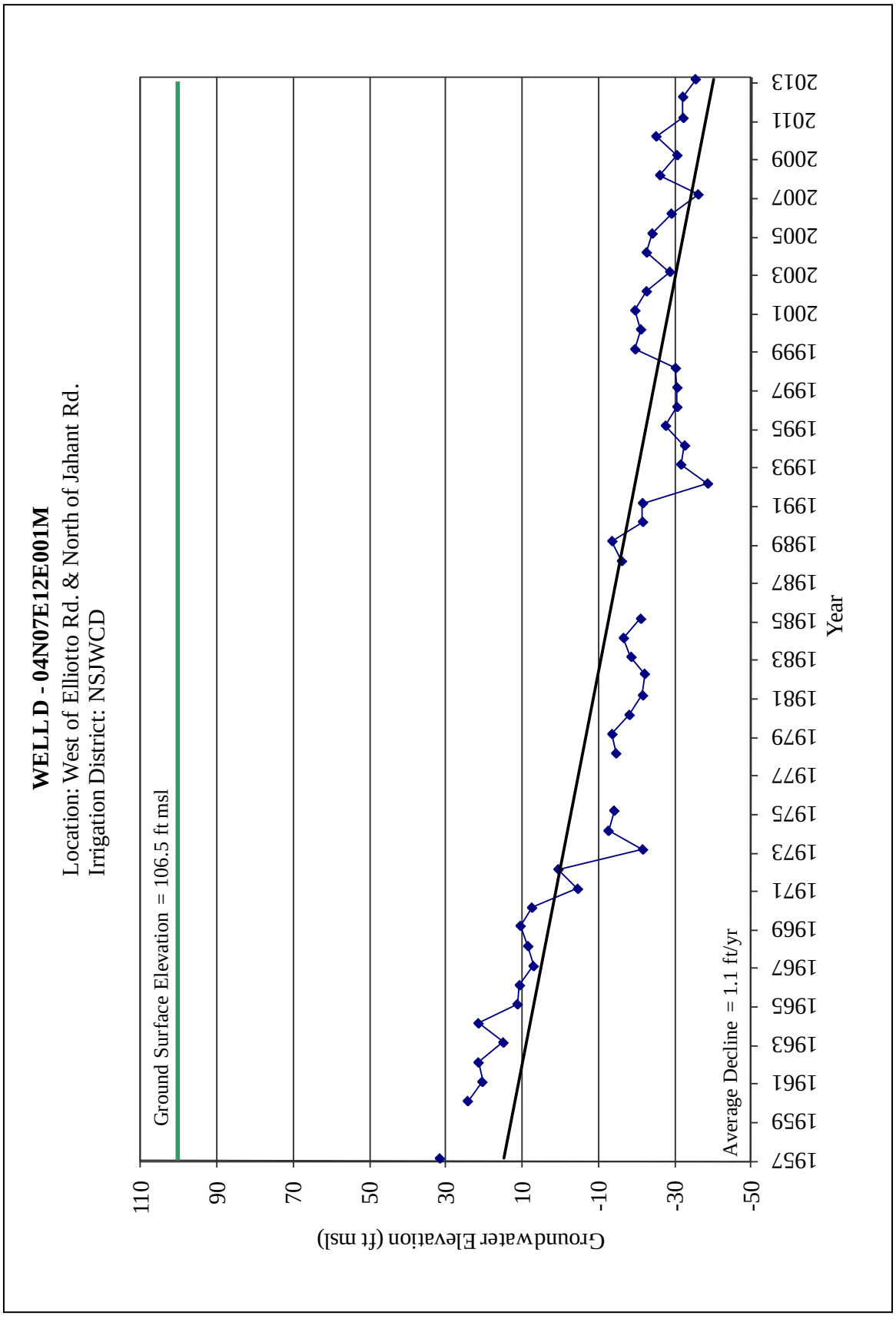

Figure 2-5 Spring Hydrograph Well D

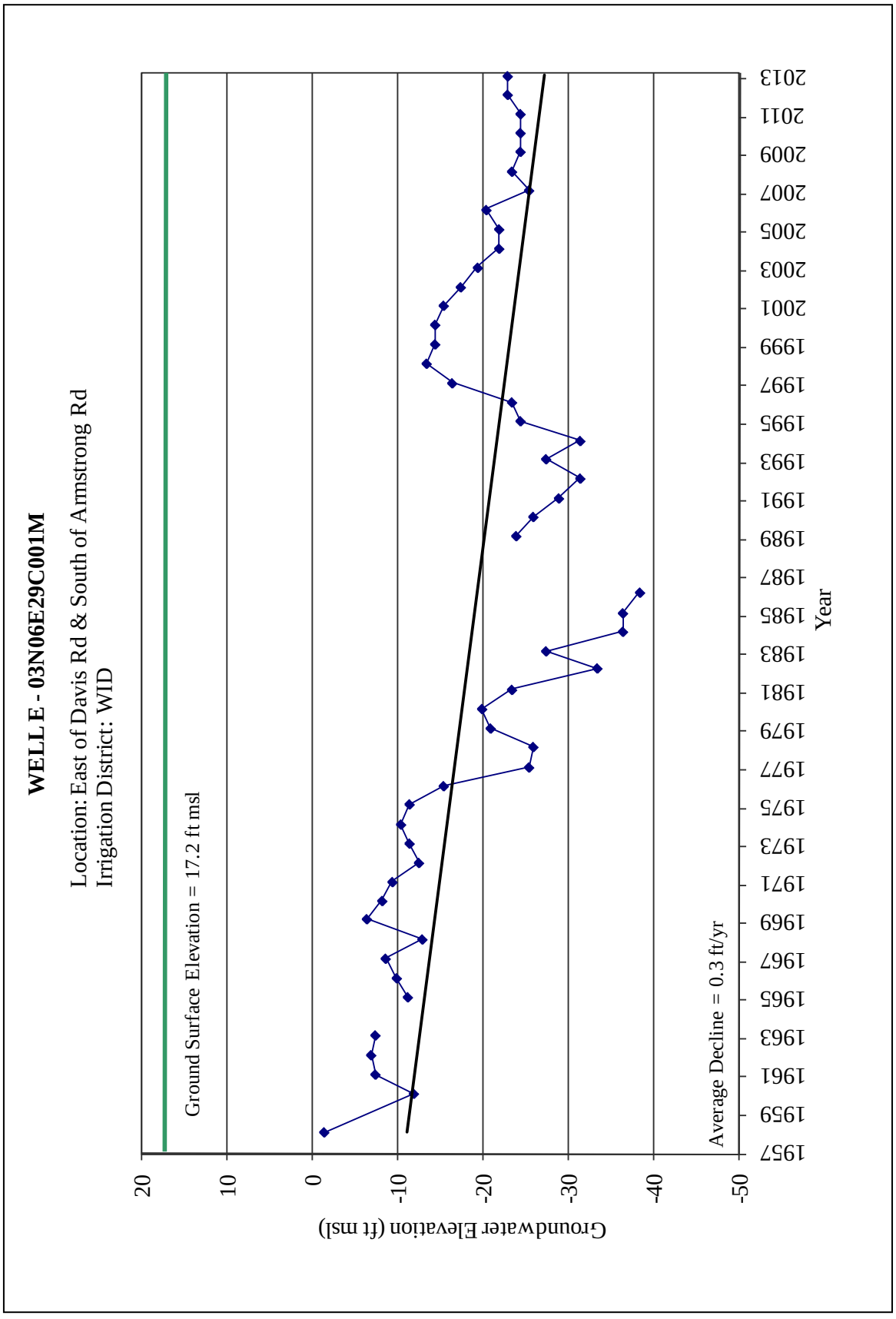

Figure 2-6 Spring Hydrograph Well E

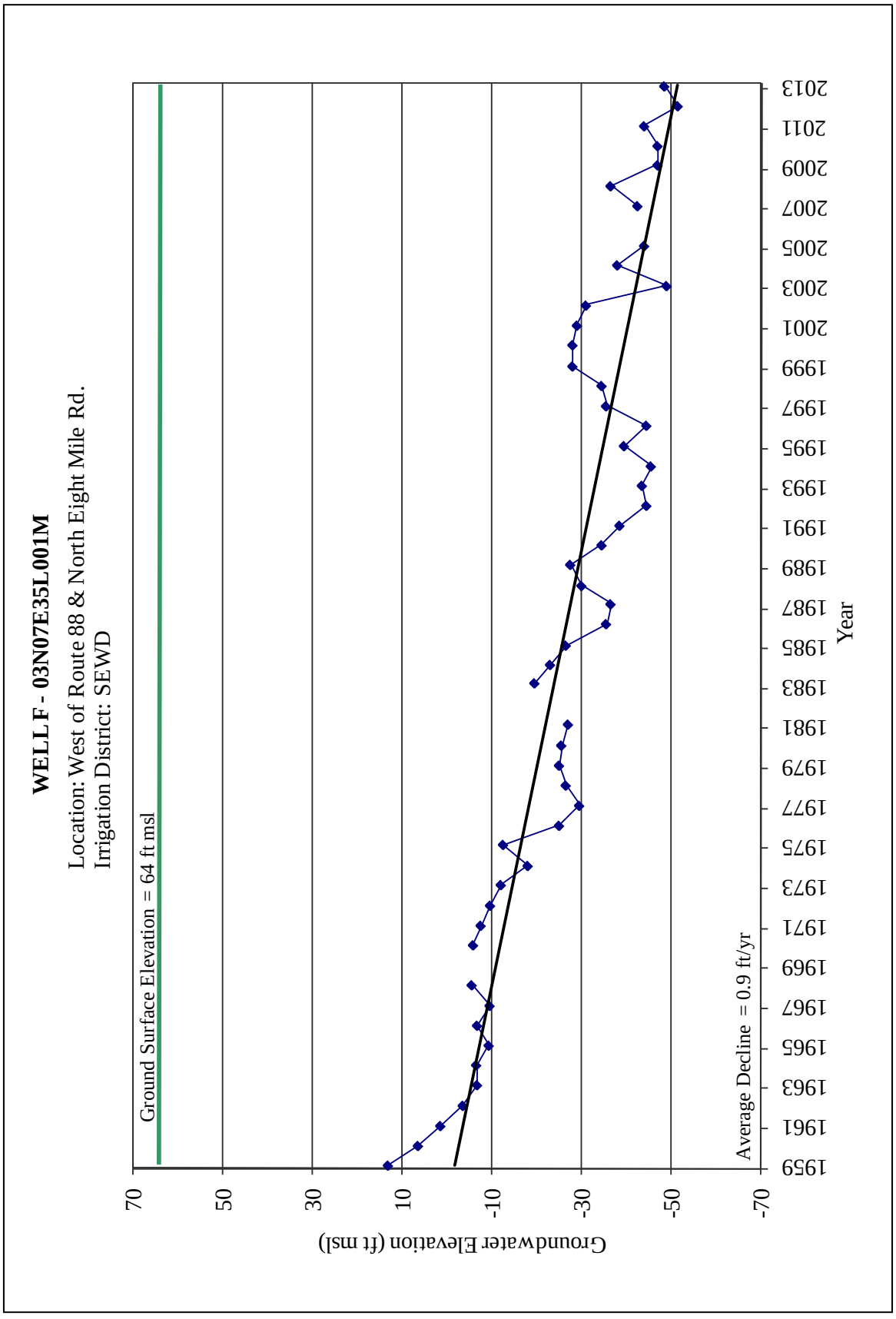

Figure 2-7 Spring Hydrograph Well F

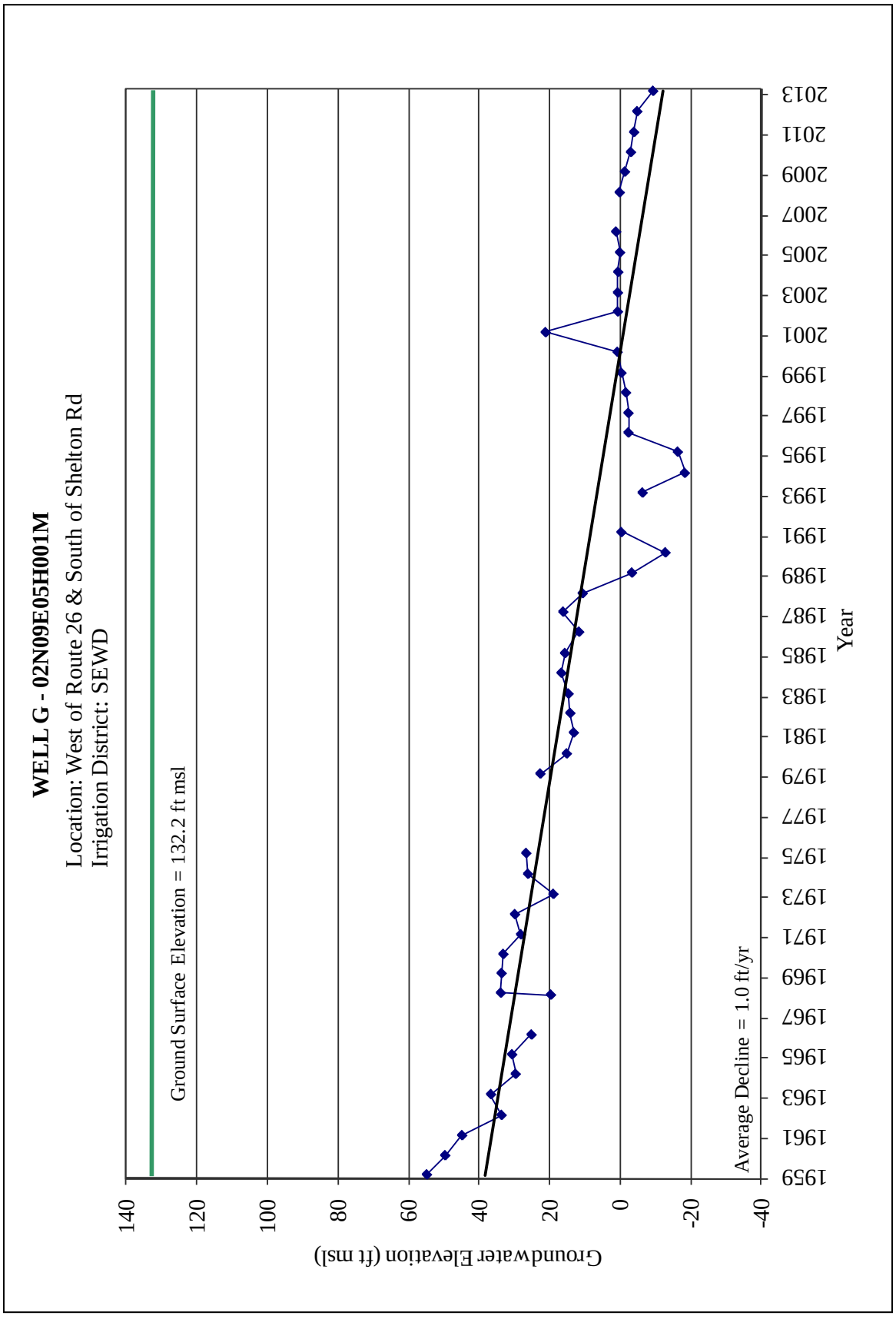

Figure 2-8 Spring Hydrograph Well G

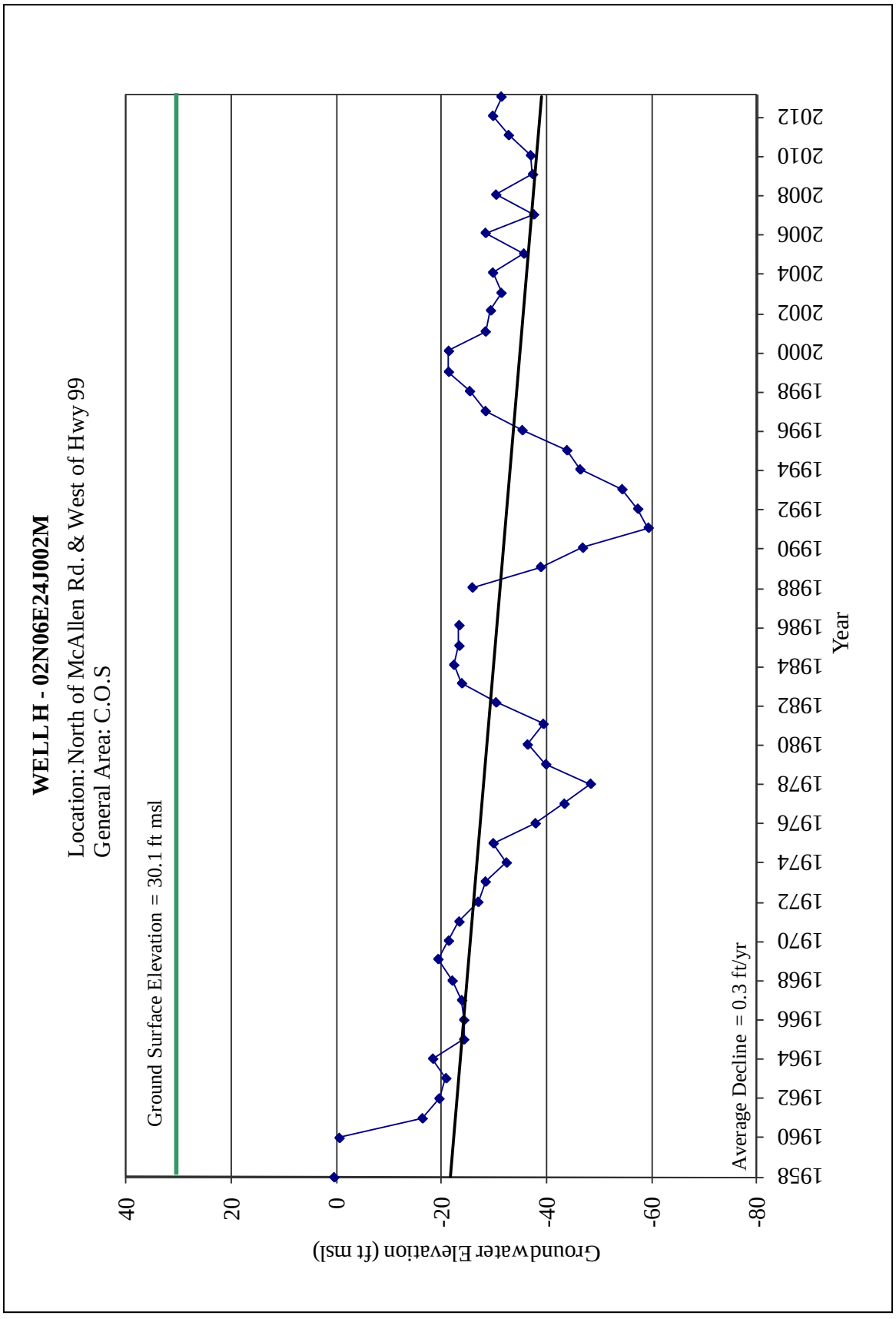

Figure 2-9 Spring Hydrograph Well H

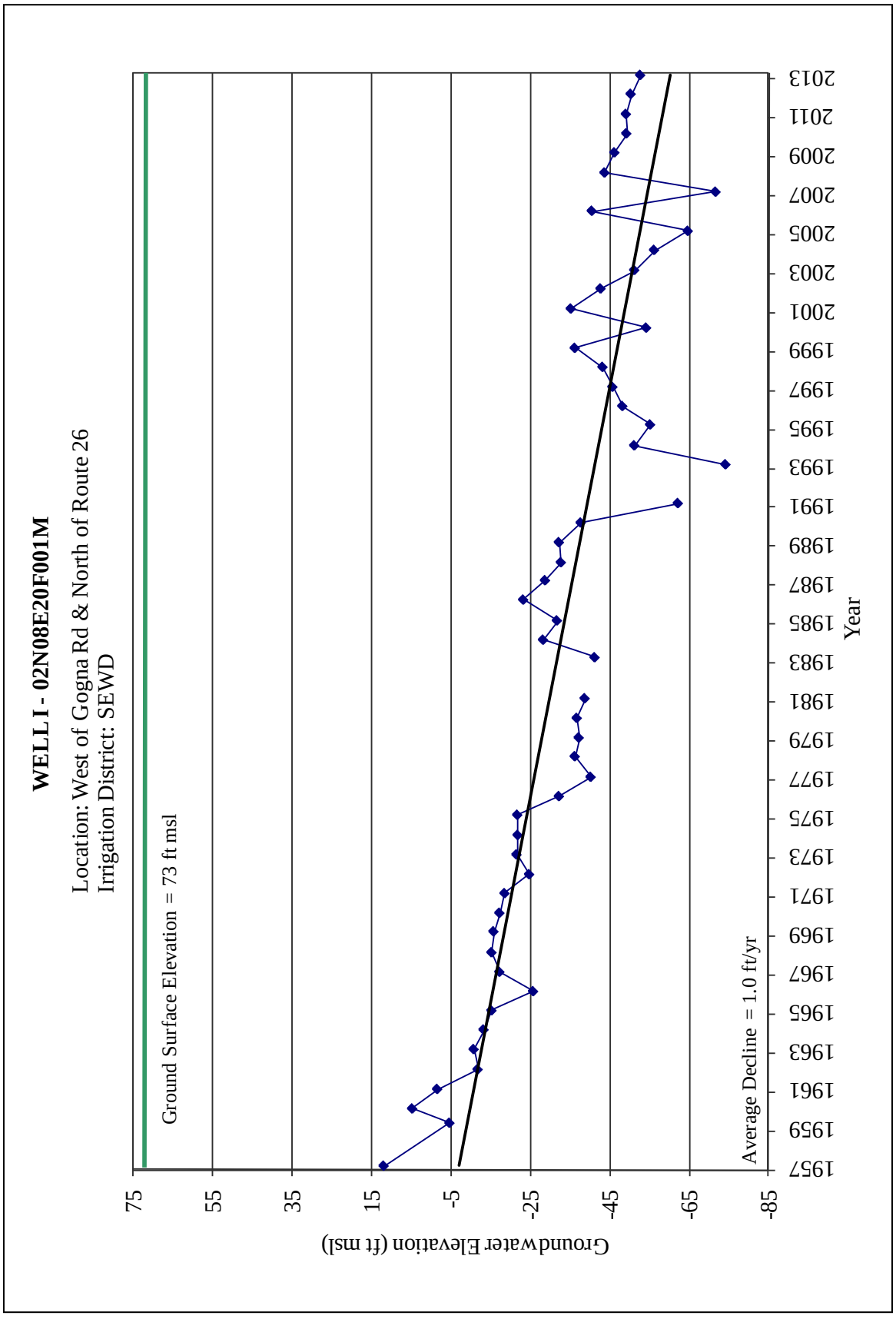

Figure 2-10 Spring Hydrograph Well I

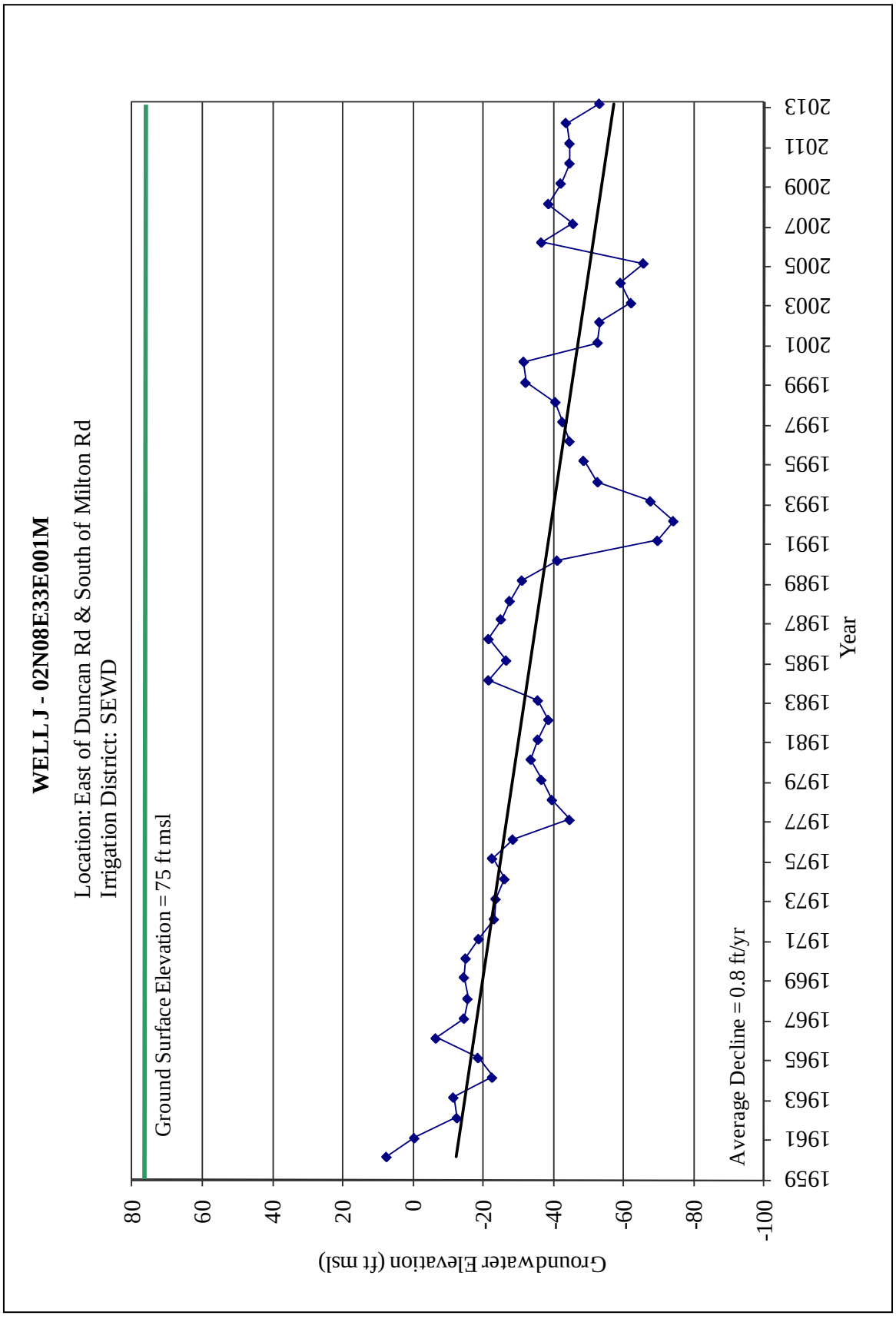

Figure 2-11 Spring Hydrograph Well J

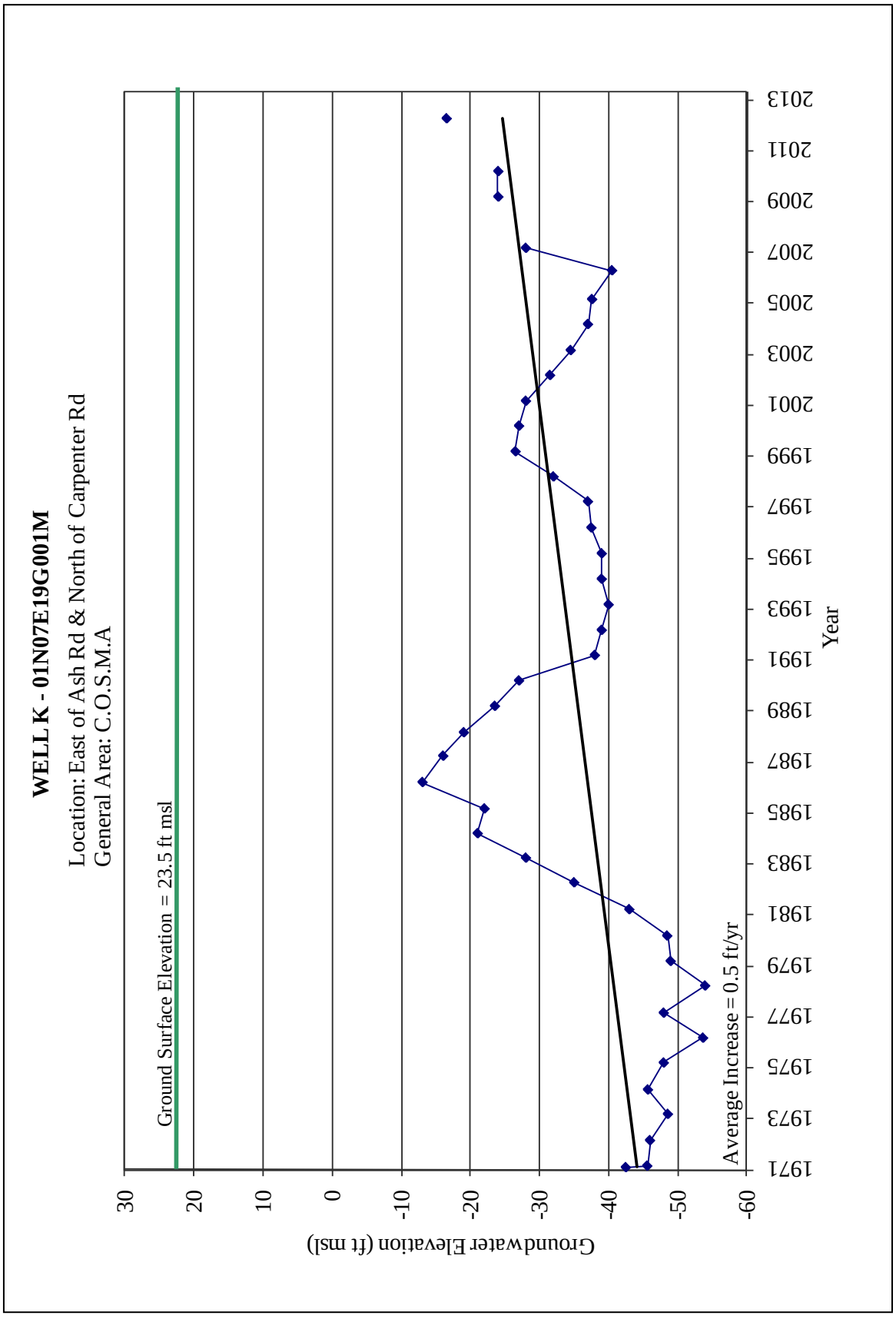

Figure 2-12 Spring Hydrograph Well K

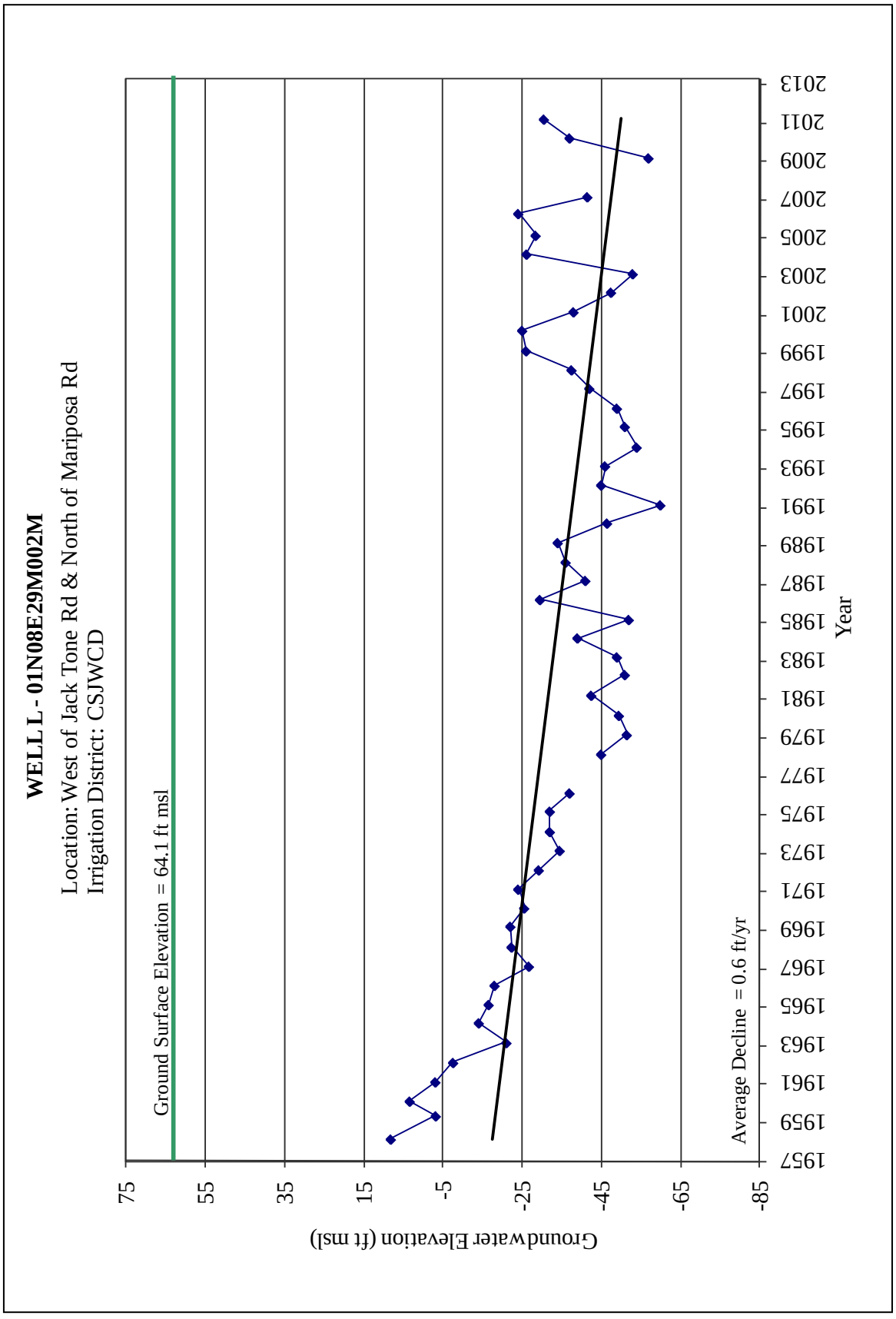

Figure 2-13 Spring Hydrograph Well L

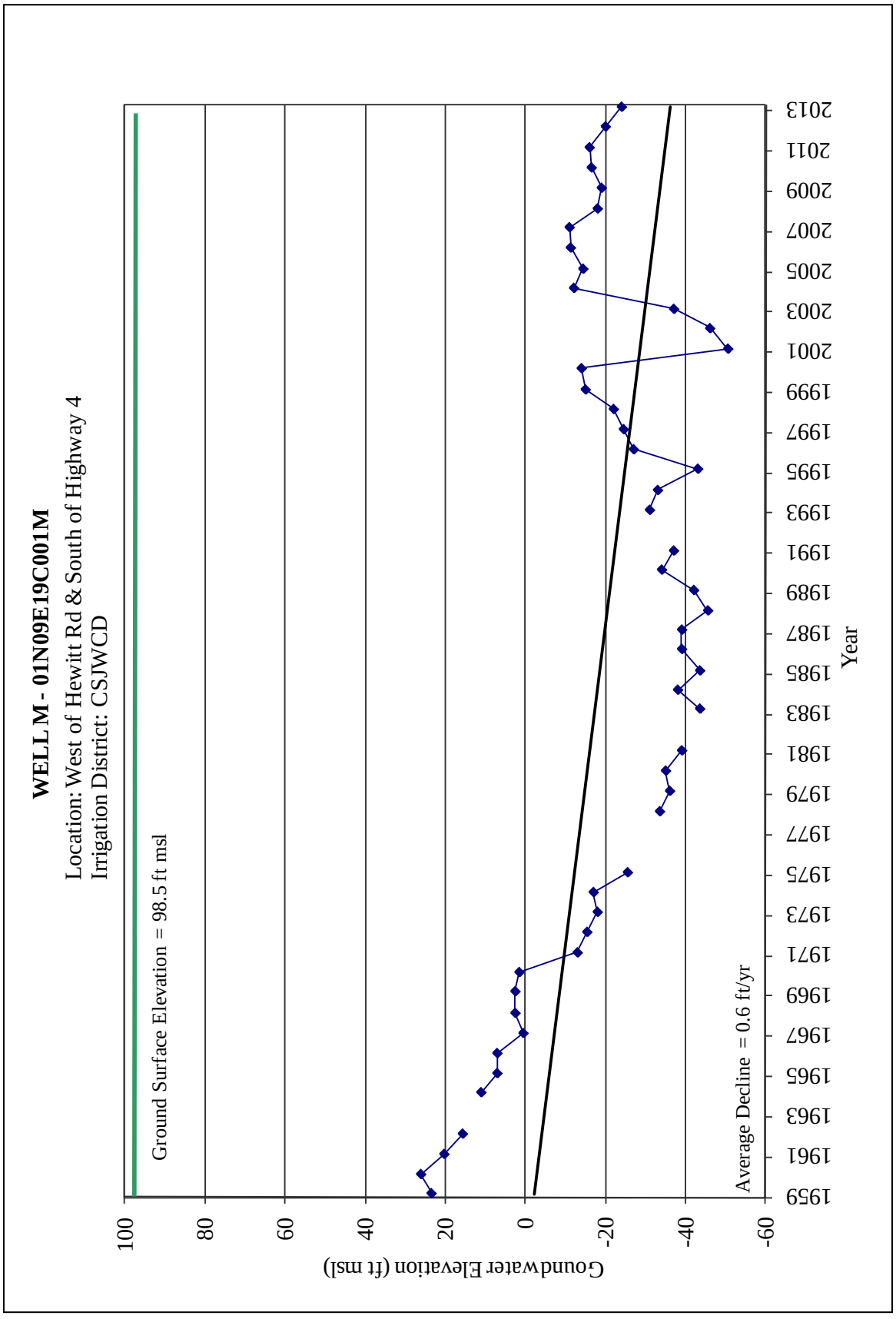

Figure 2-14 Spring Hydrograph Well M

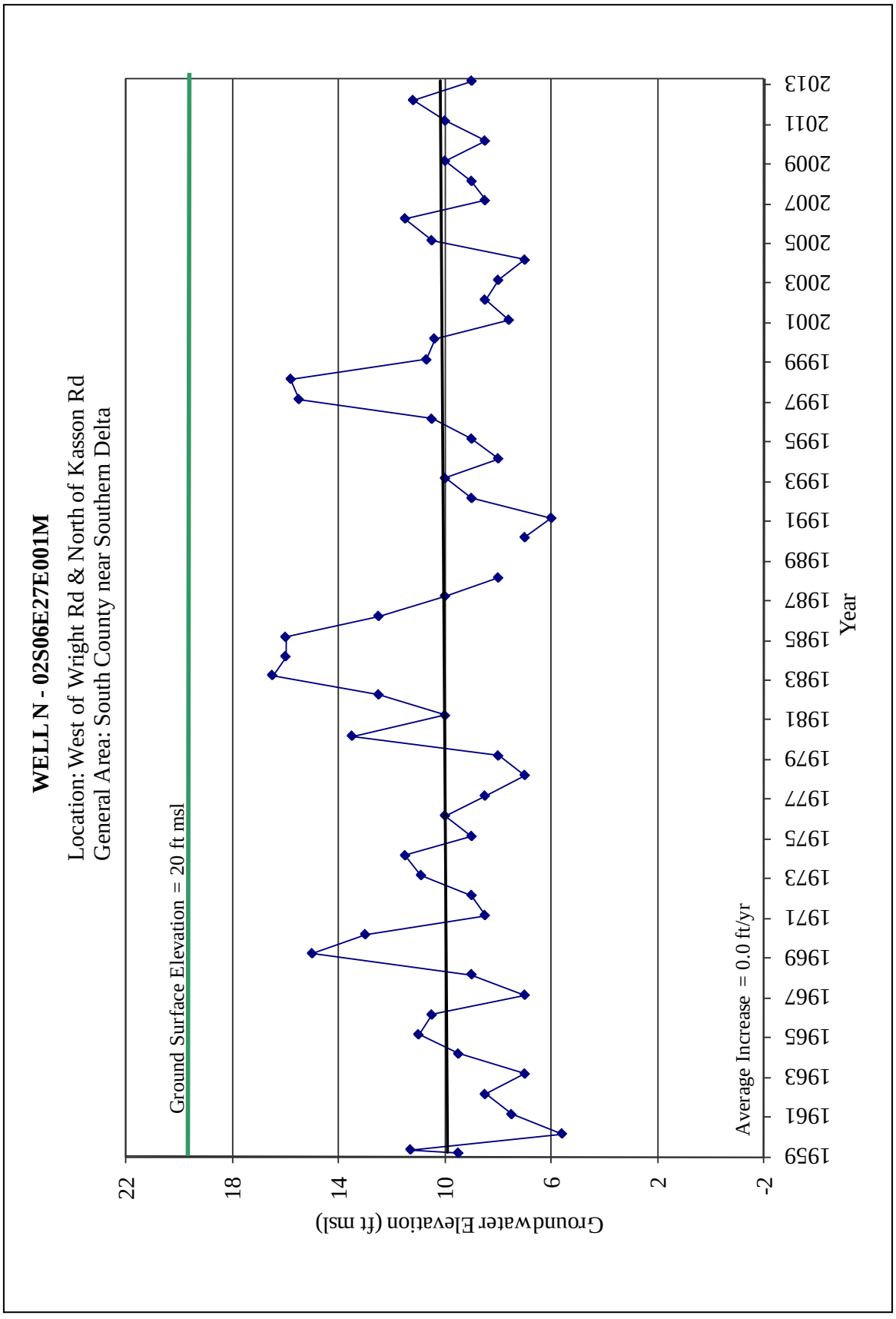

Figure 2-15 Spring Hydrograph Well N

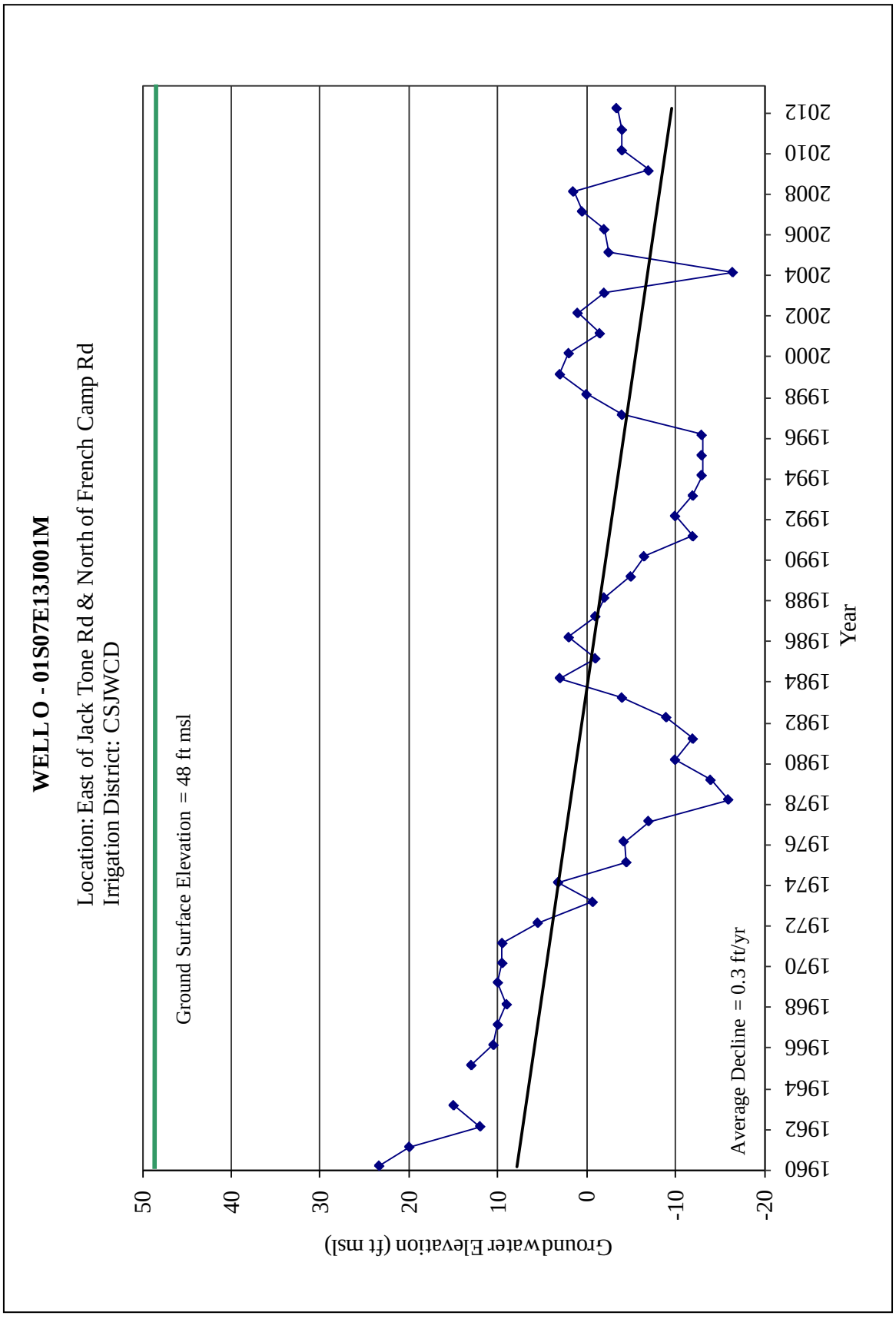

Figure 2-16 Spring Hydrograph Well O

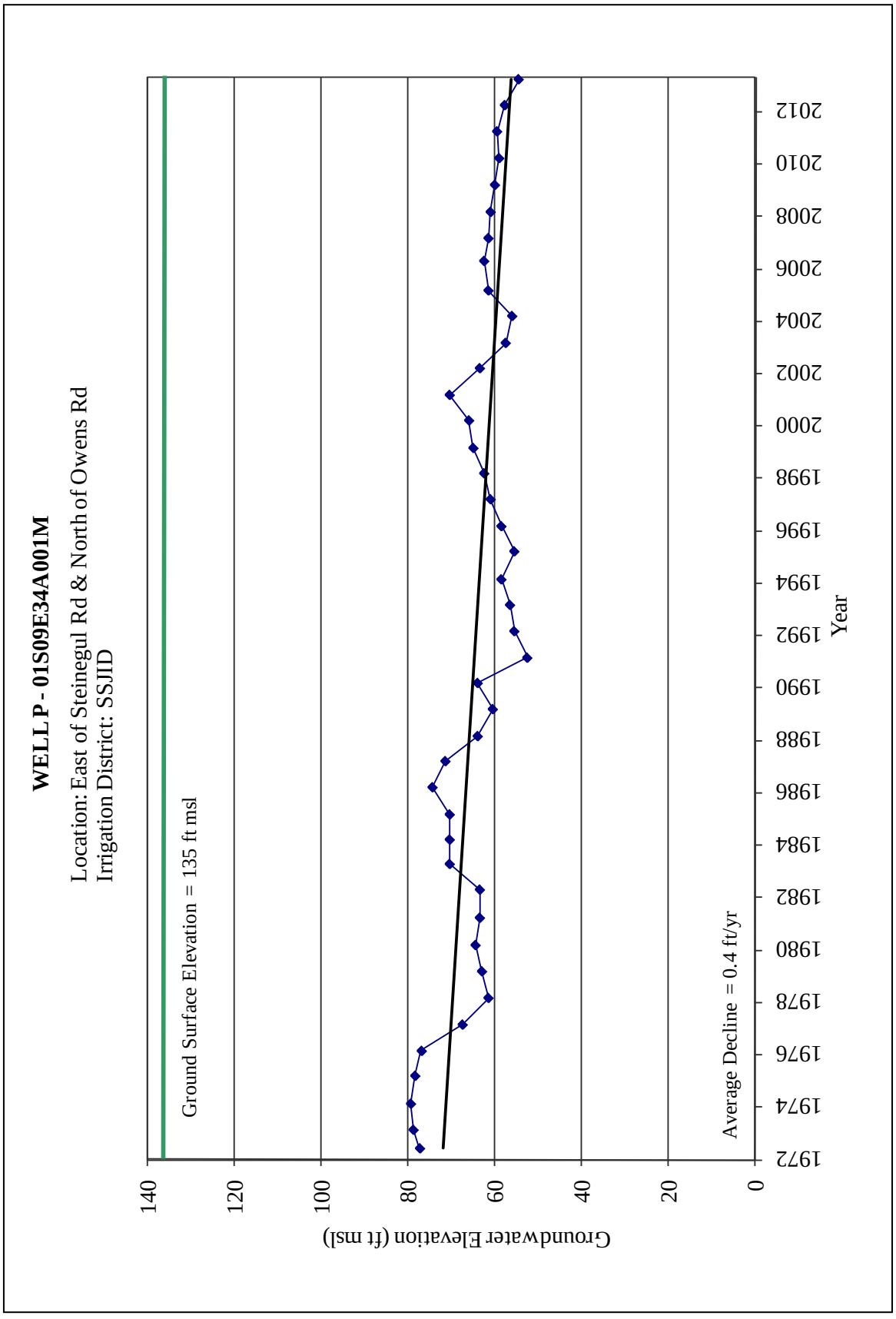

Figure 2-17 Spring Hydrograph Well P

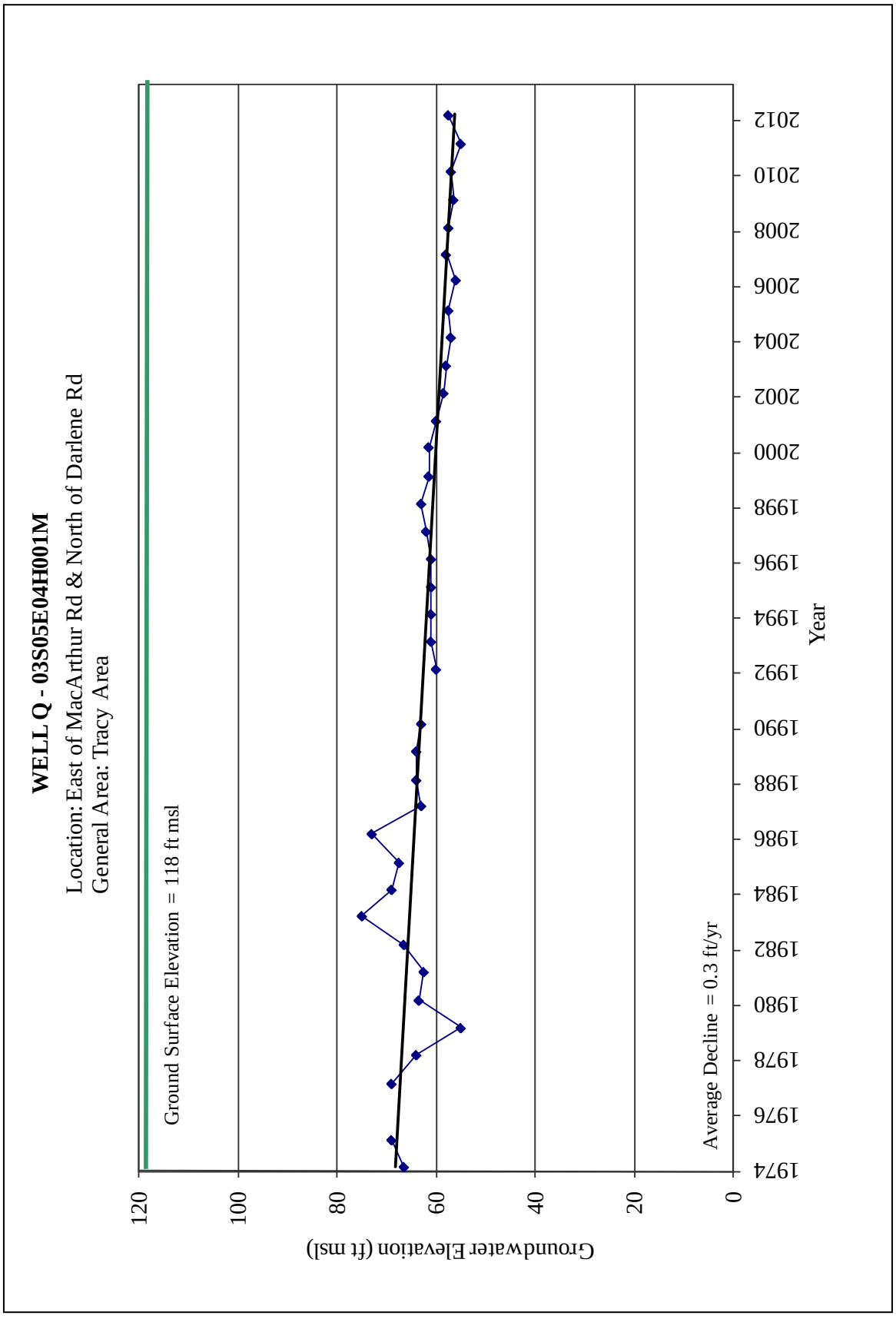

Figure 2-18 Spring Hydrograph Well Q

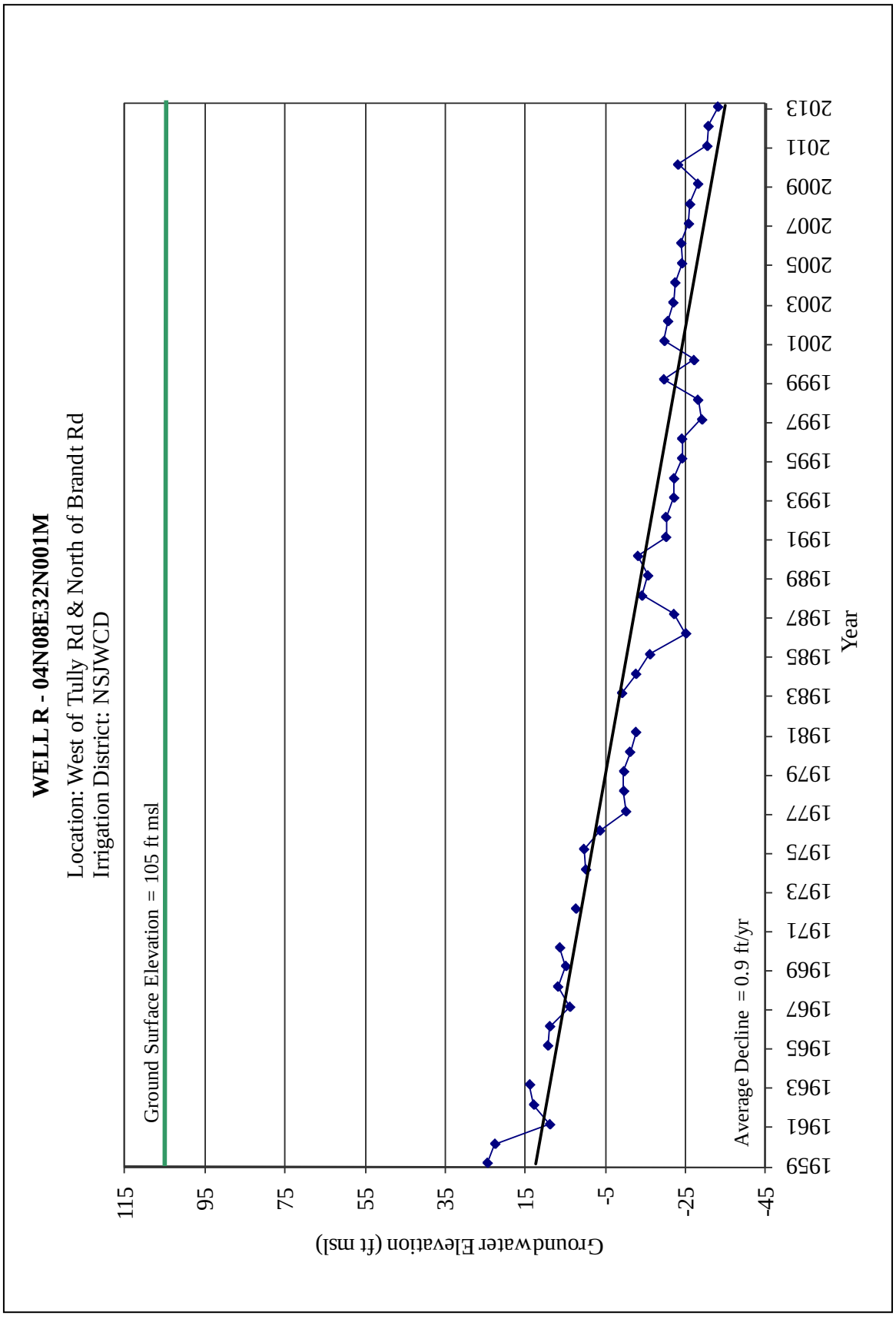

Figure 2-19 Spring Hydrograph Well R

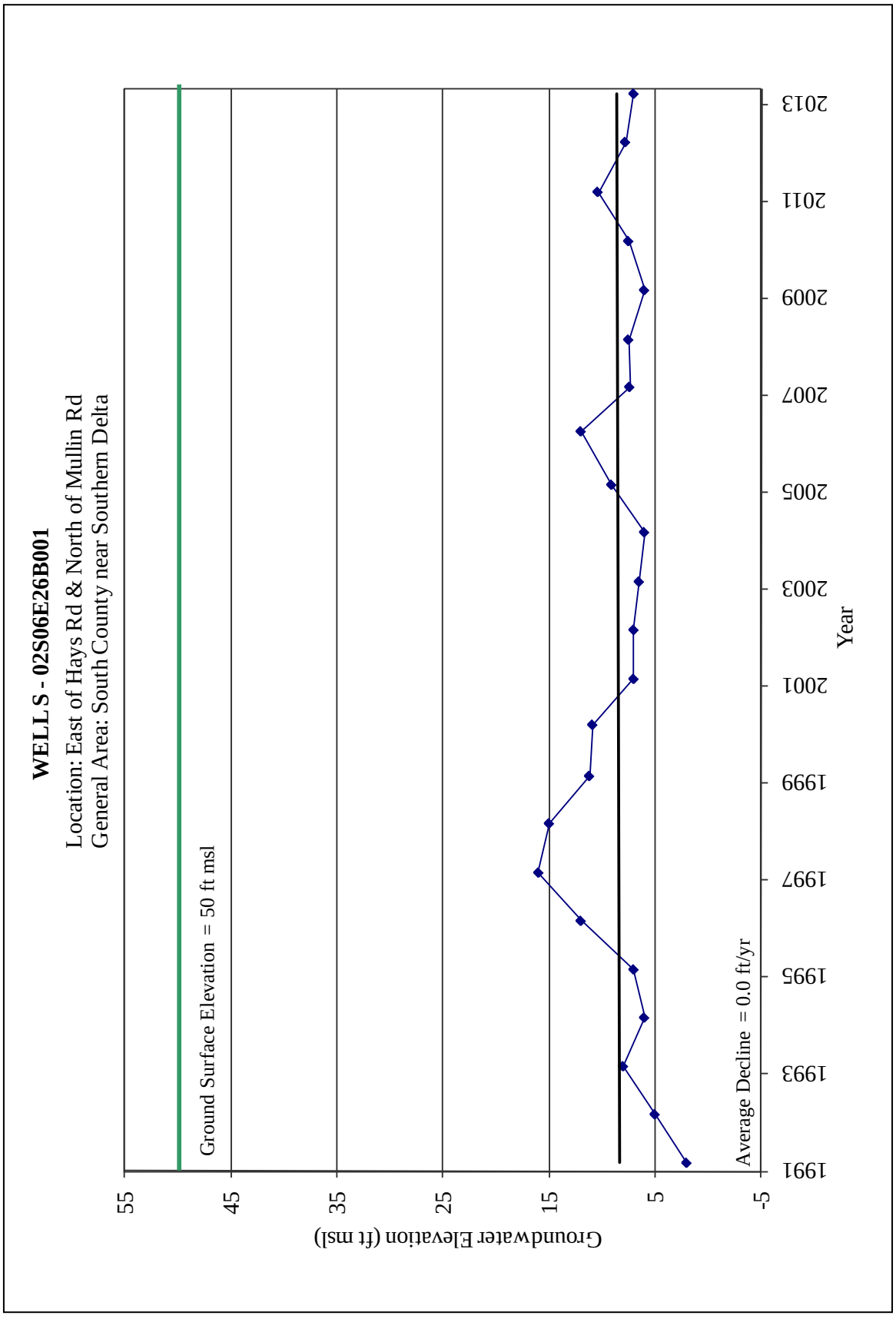

Figure 2-20 Spring Hydrograph Well S

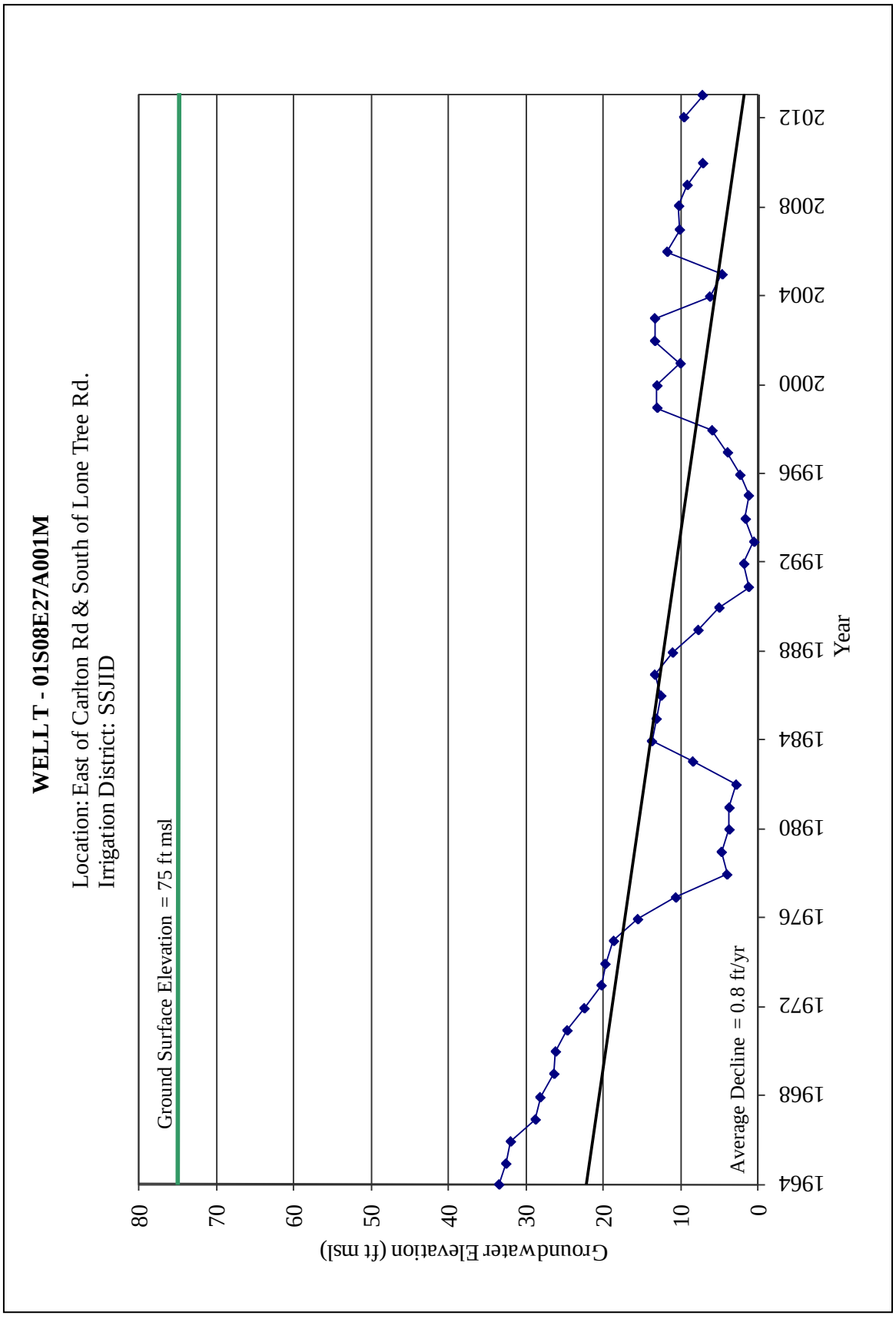

Figure 2-21 Spring Hydrograph Well T

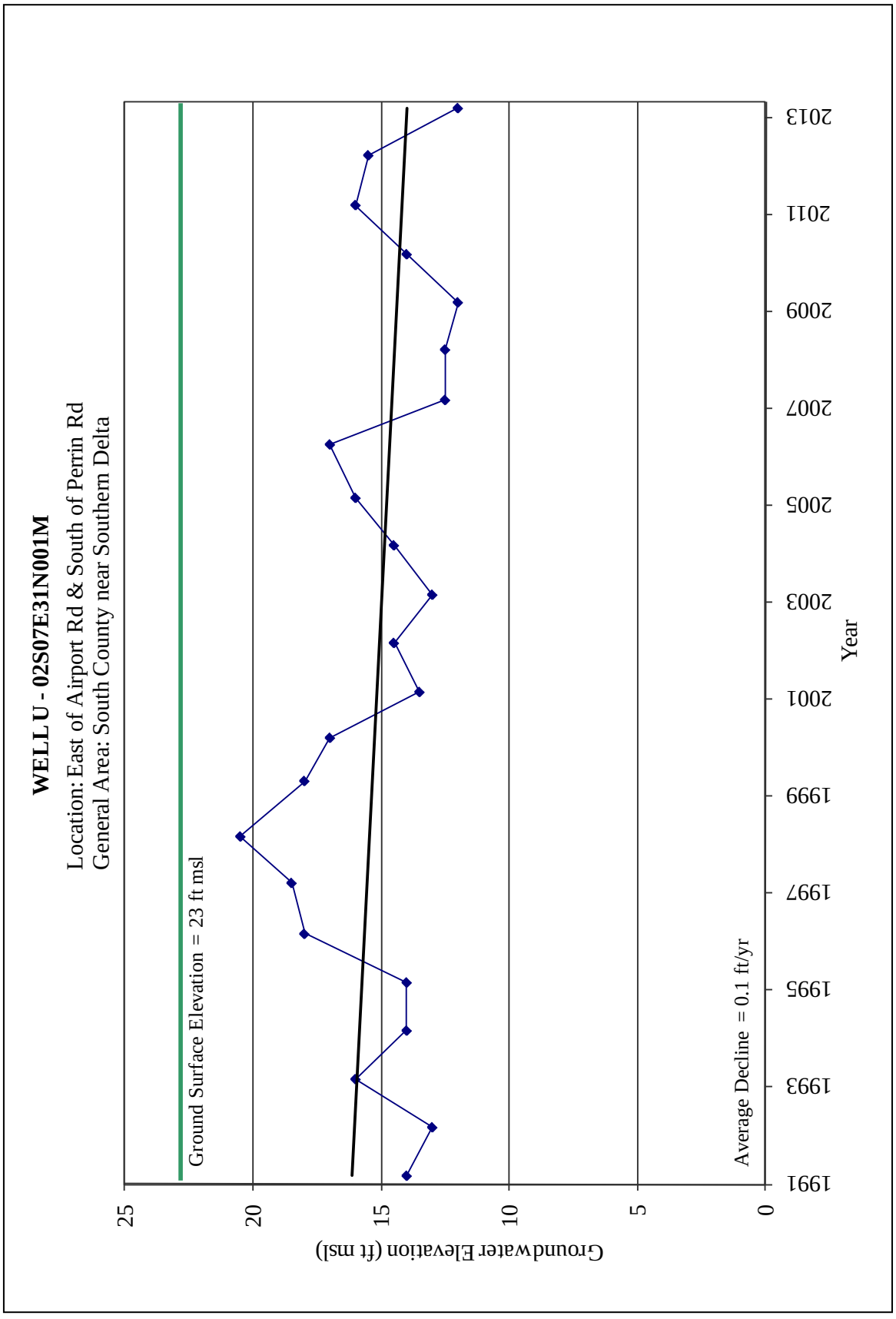

Figure 2-22 Spring Hydrograph Well U

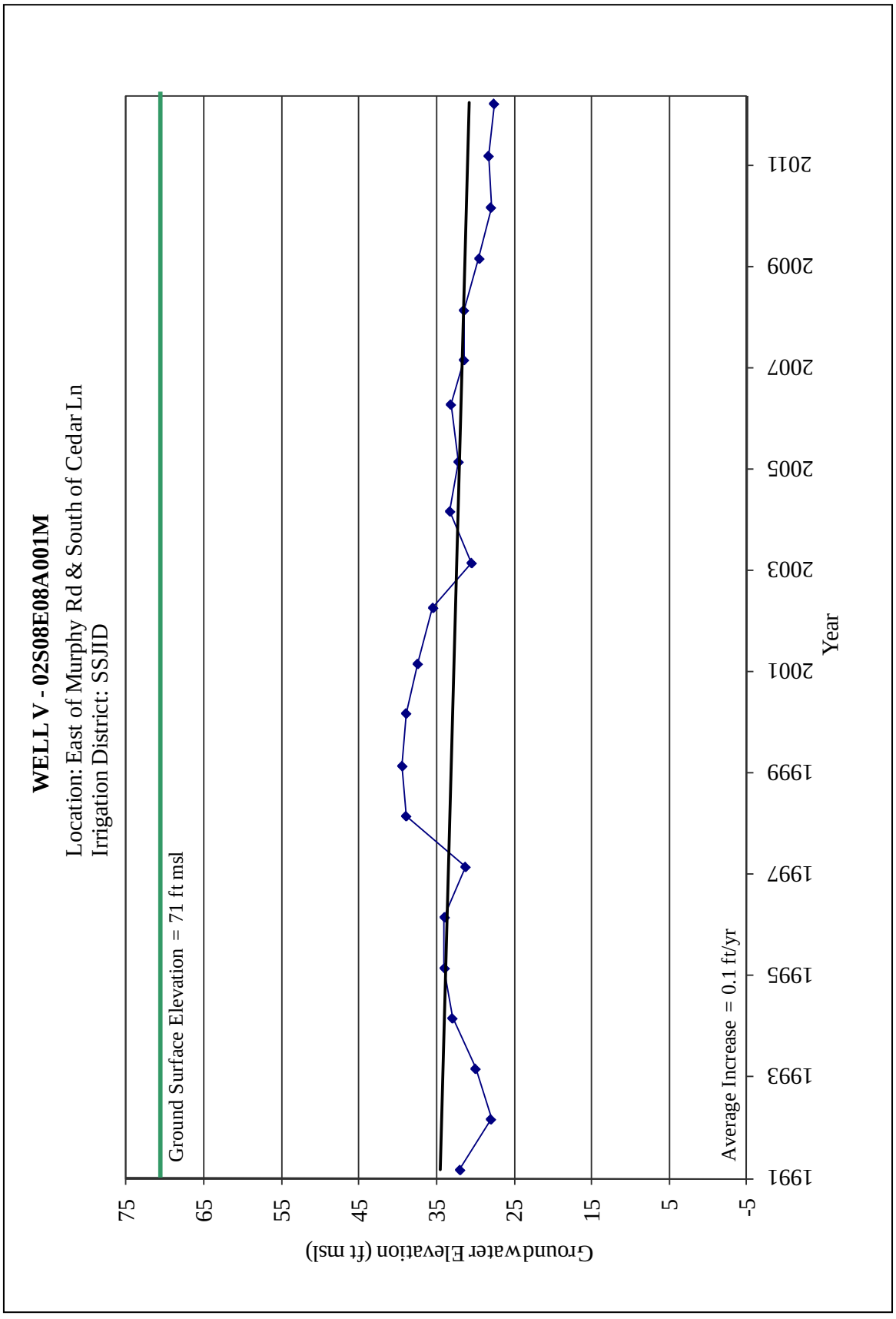

Figure 2-23 Spring Hydrograph Well V

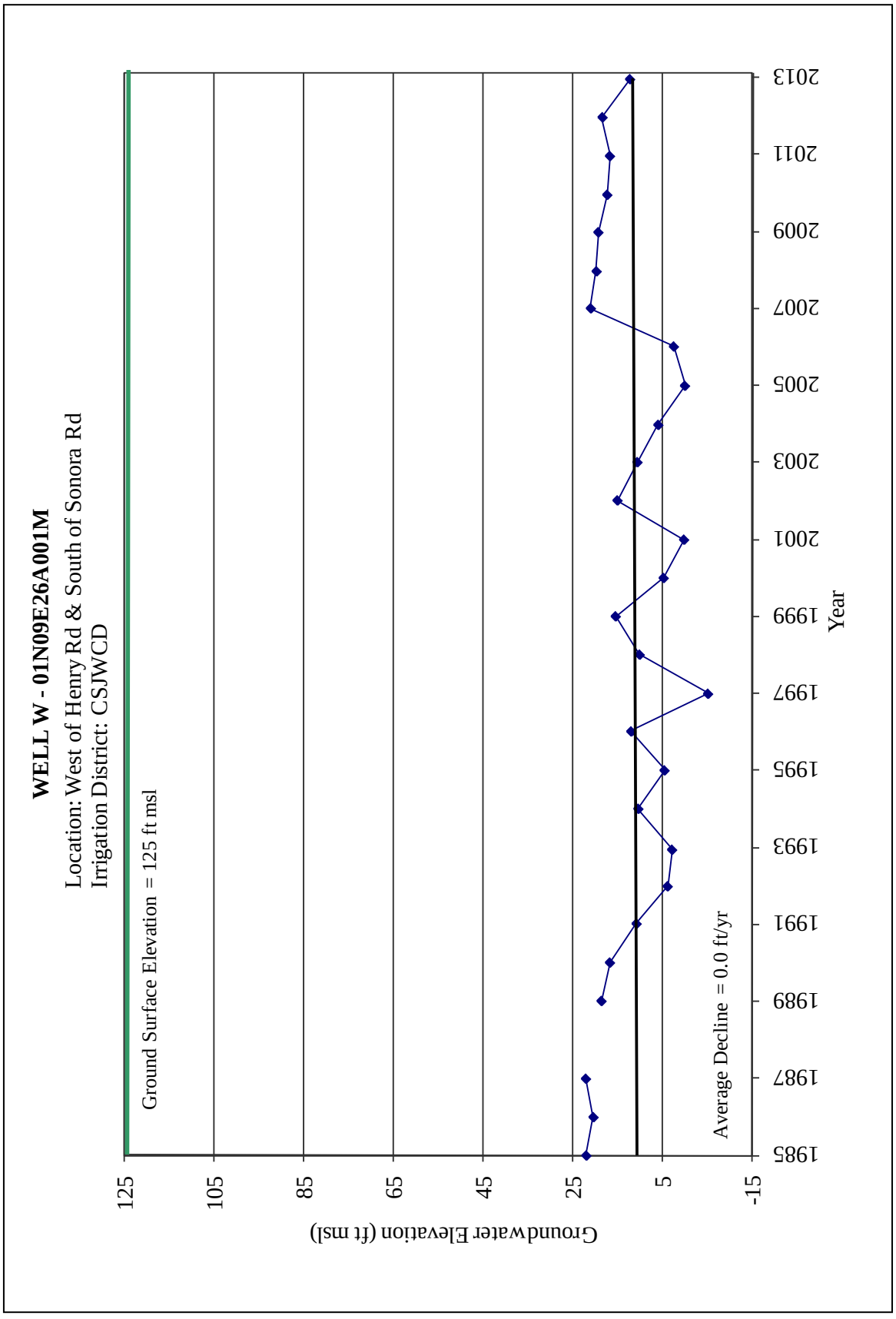

Figure 2-24 Spring Hydrograph Well W

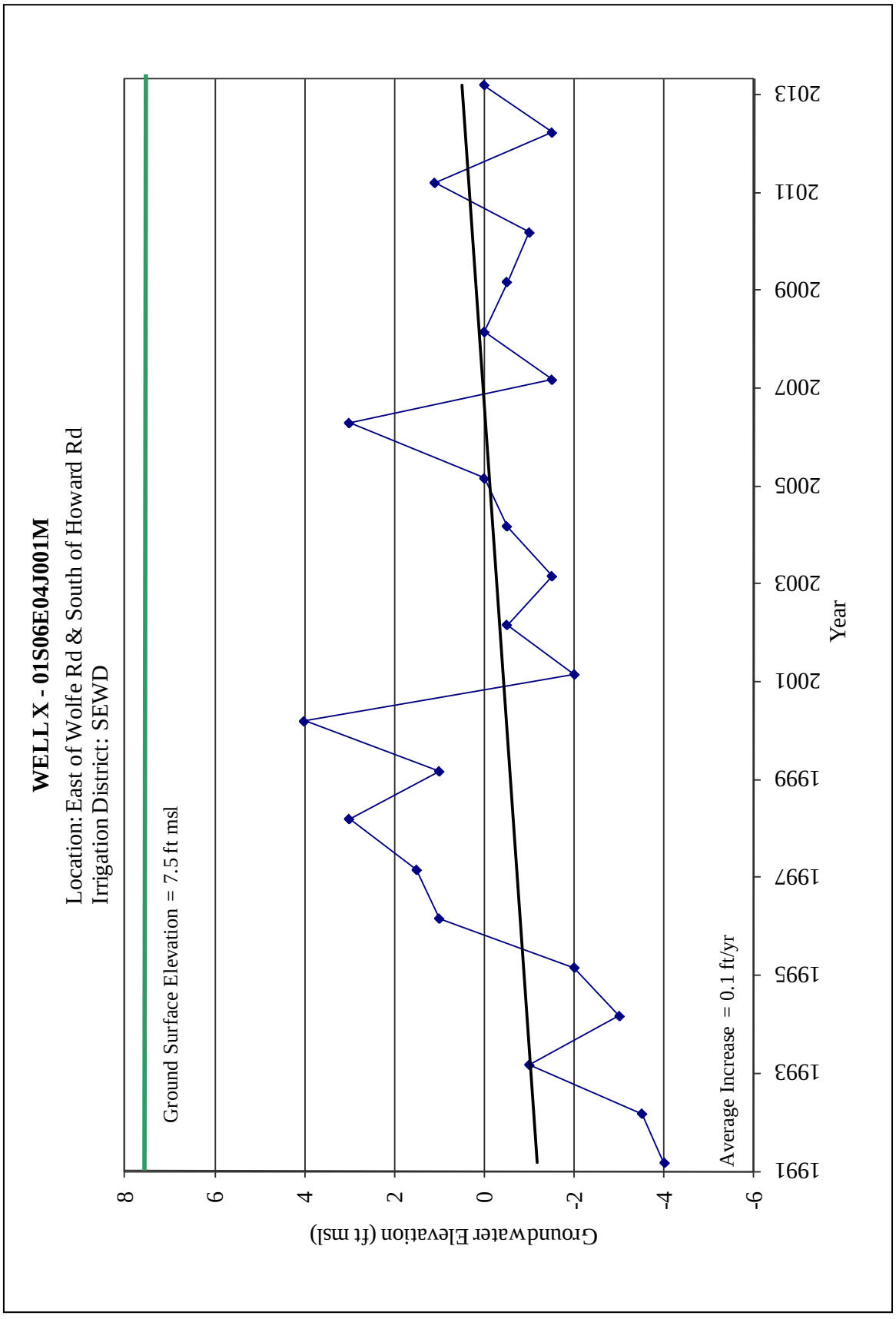

Figure 2-25 Spring Hydrograph Well X

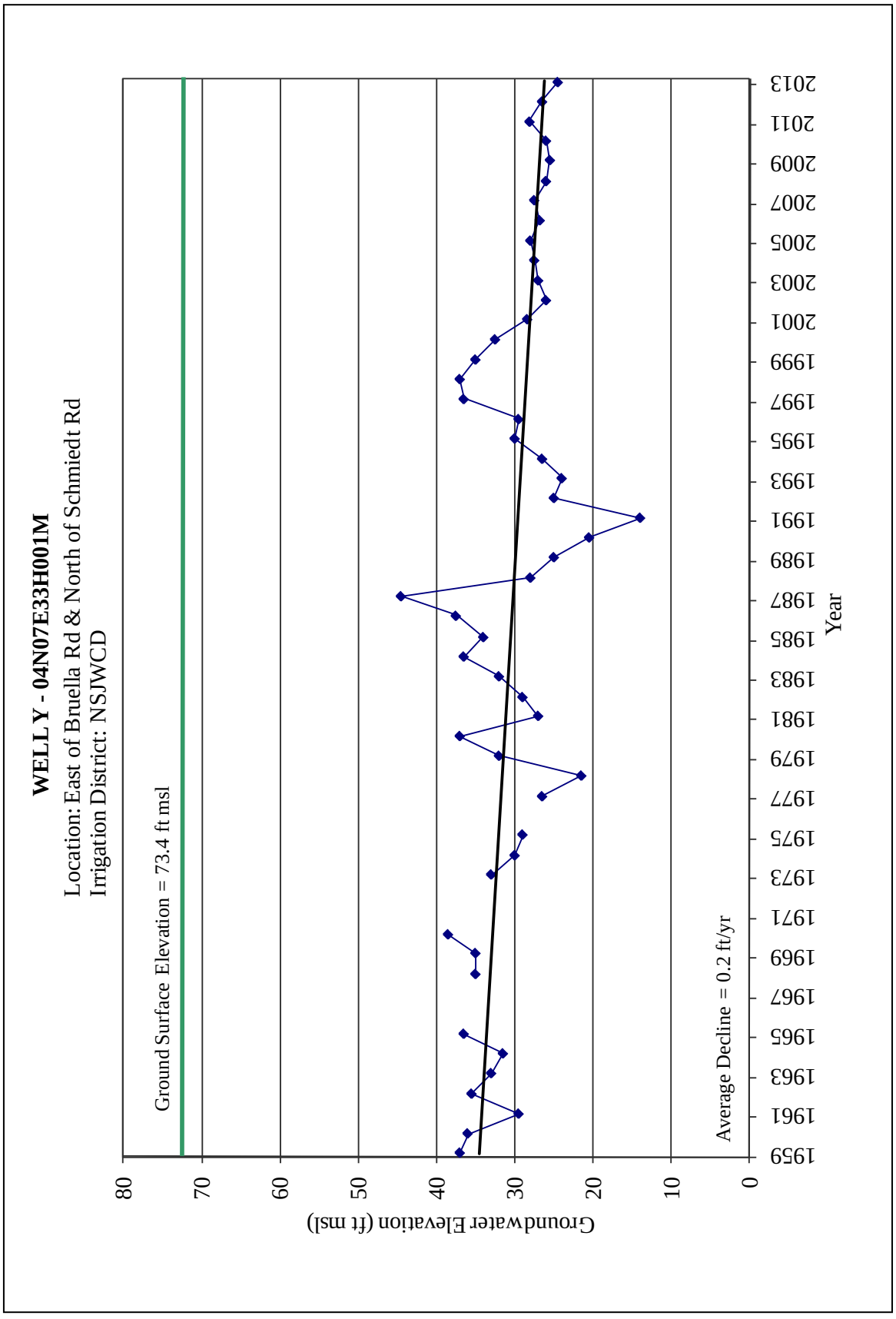

Figure 2-26 Spring Hydrograph Well Y

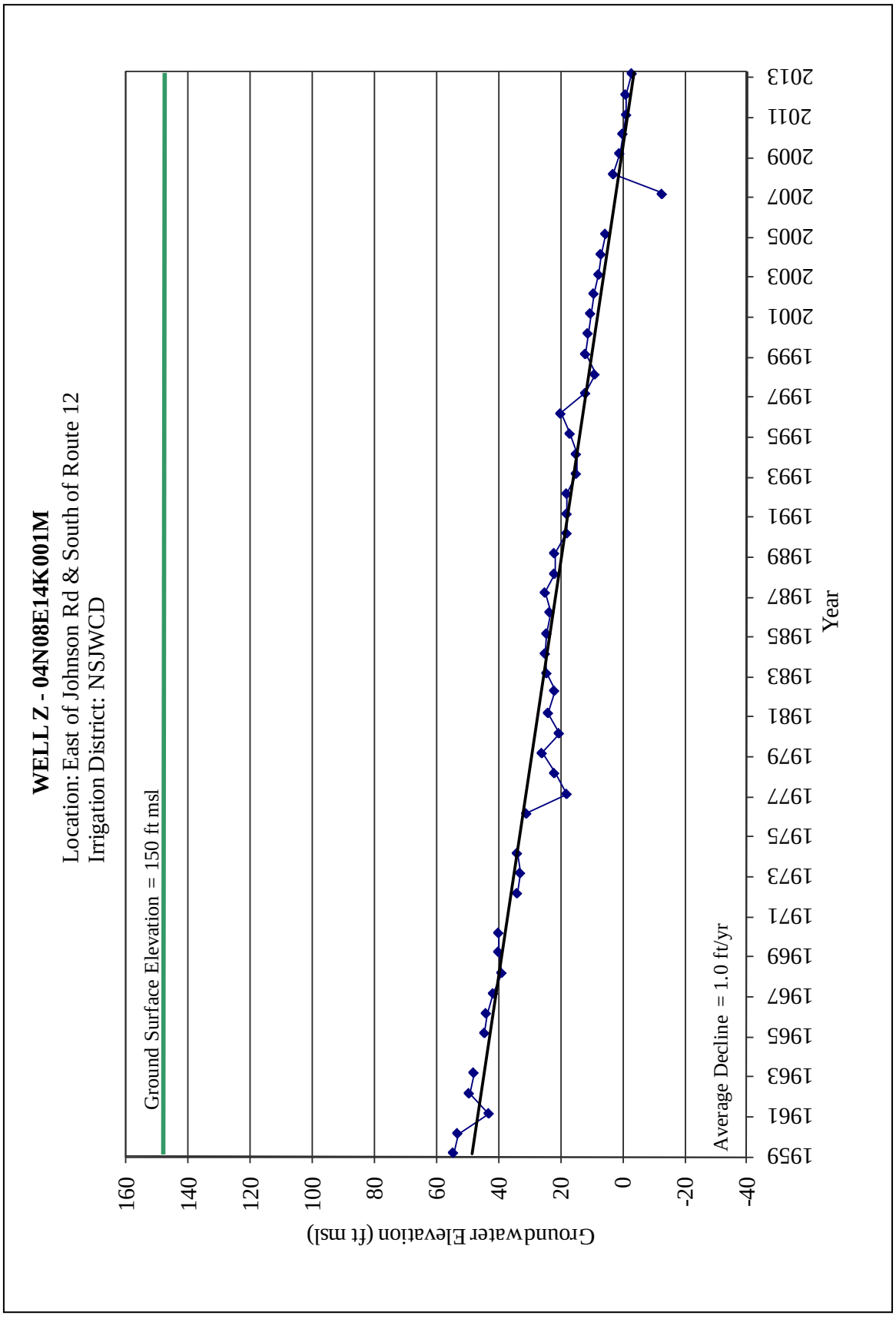

Figure 2-27 Spring Hydrograph Well Z

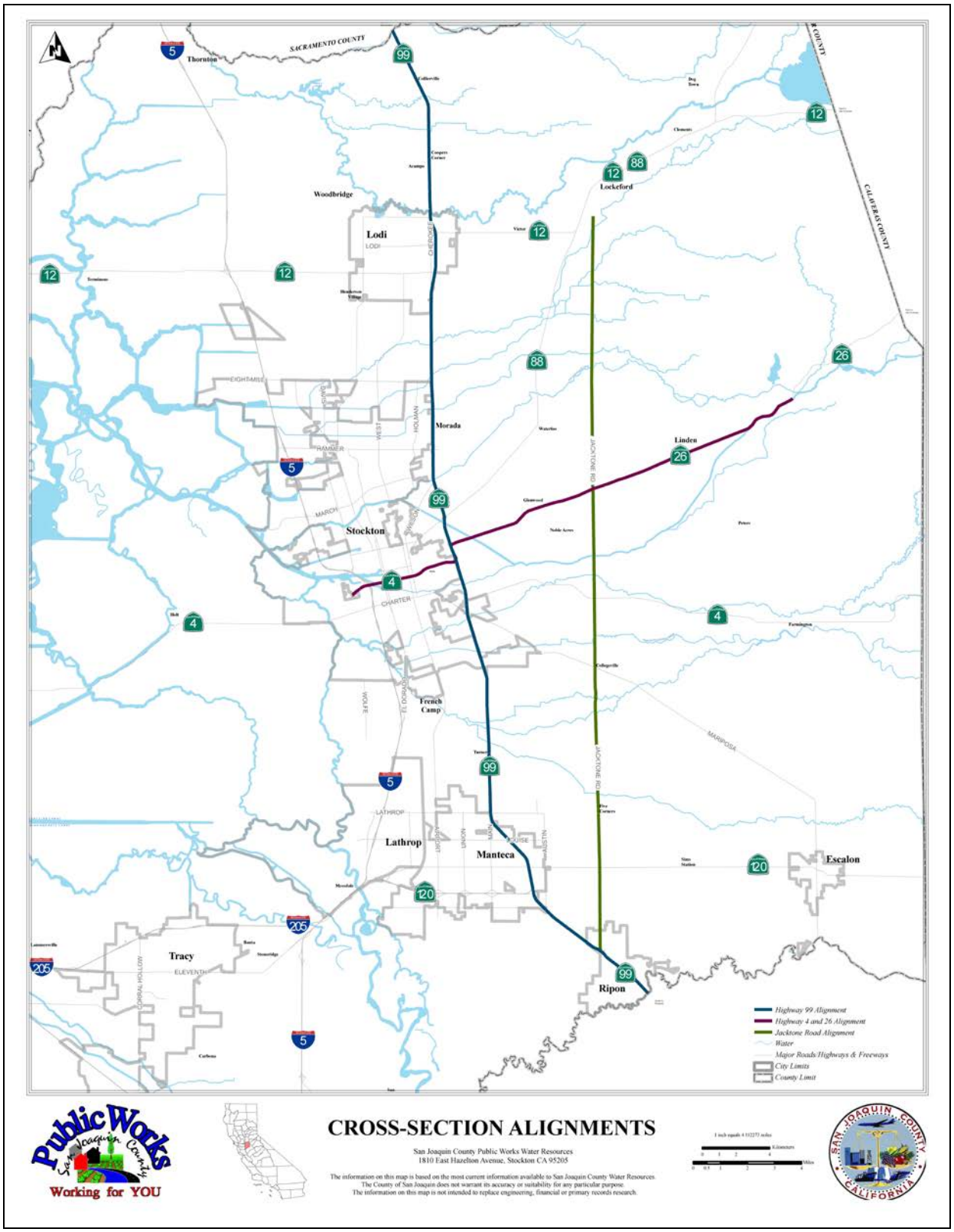

Figure 2-28 Cross Section Alignments

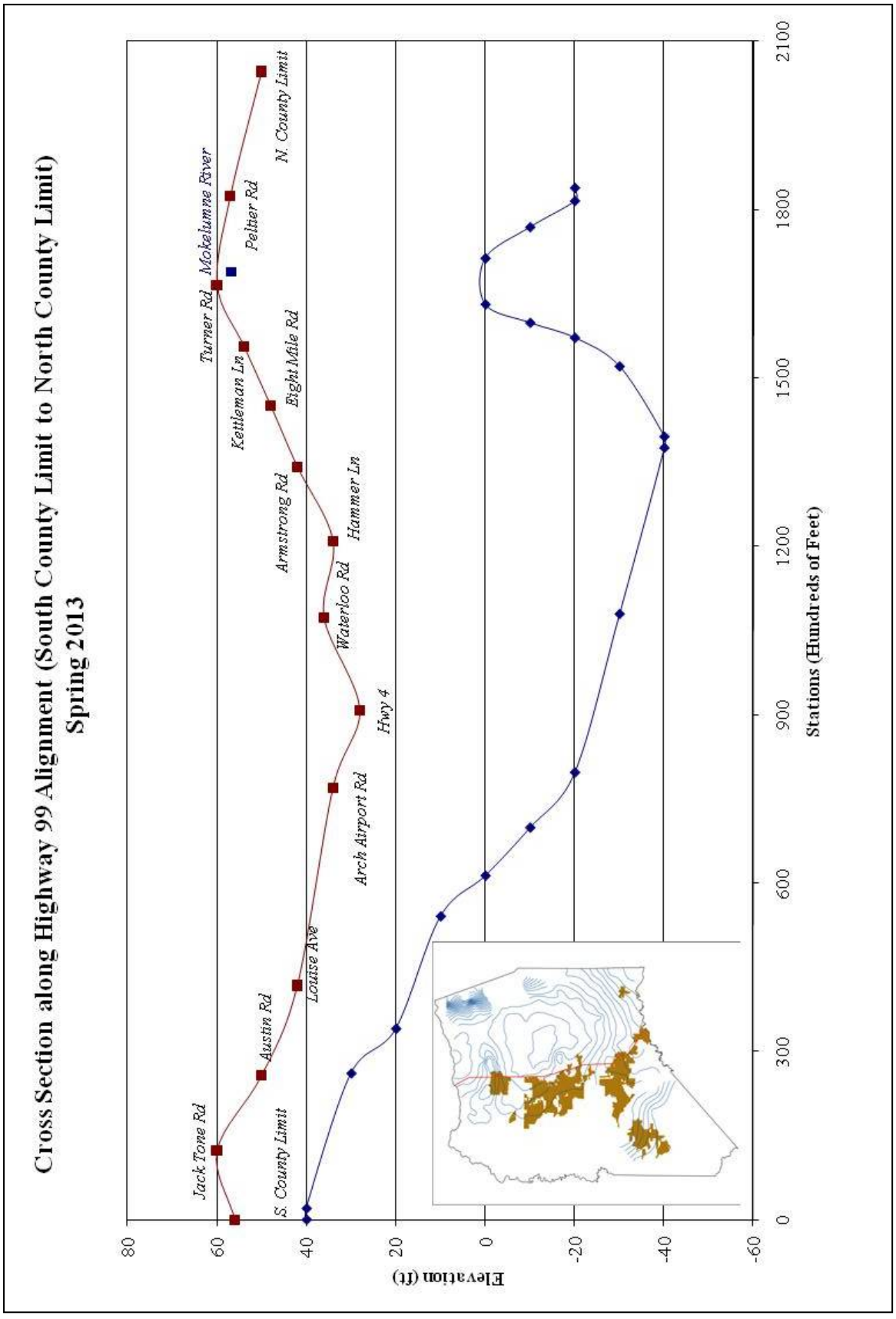

Figure 2-29 Highway 99 Cross Section Spring 2013

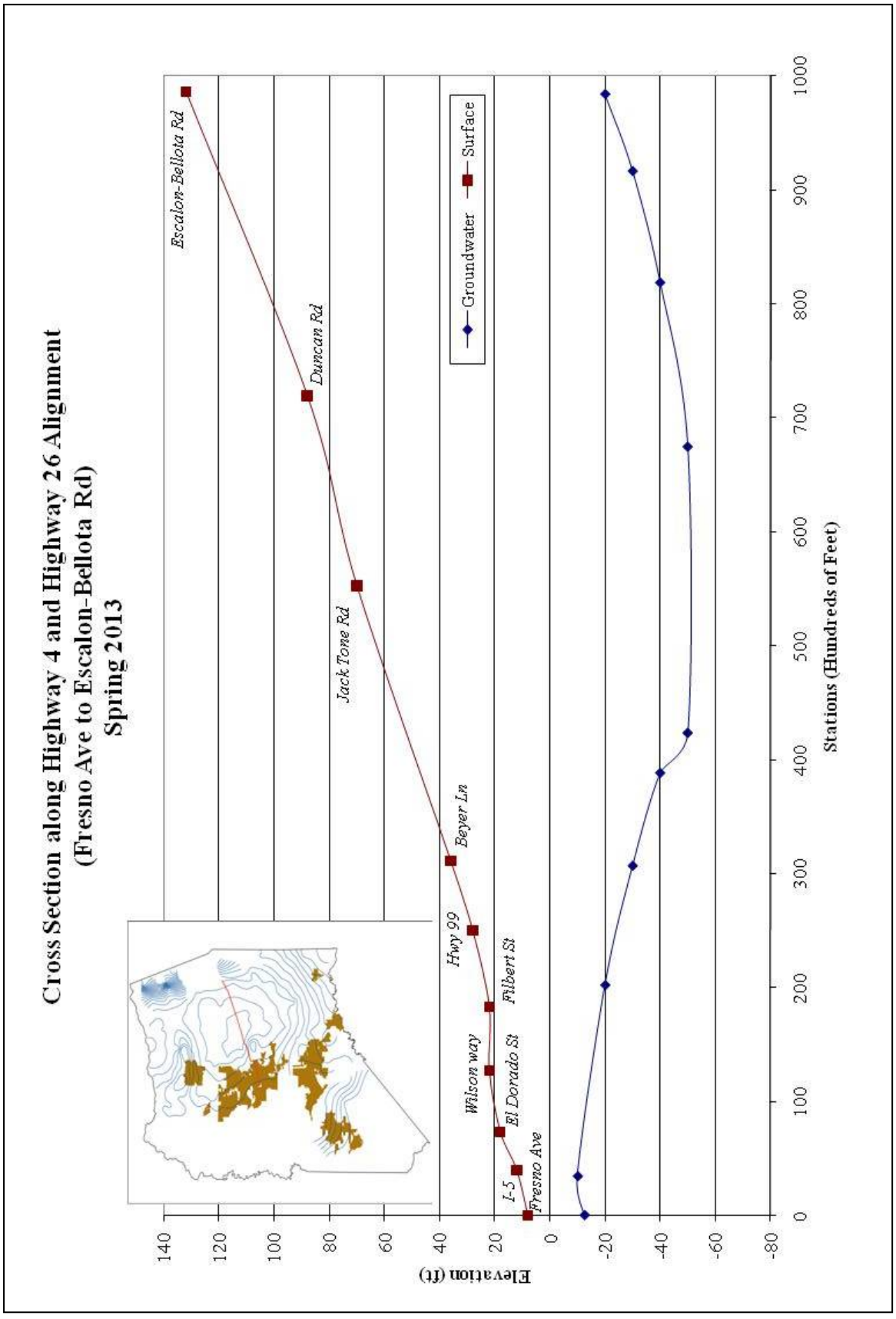

Figure 2-30 Highway 4 & Highway 26 Cross Section Spring 2013

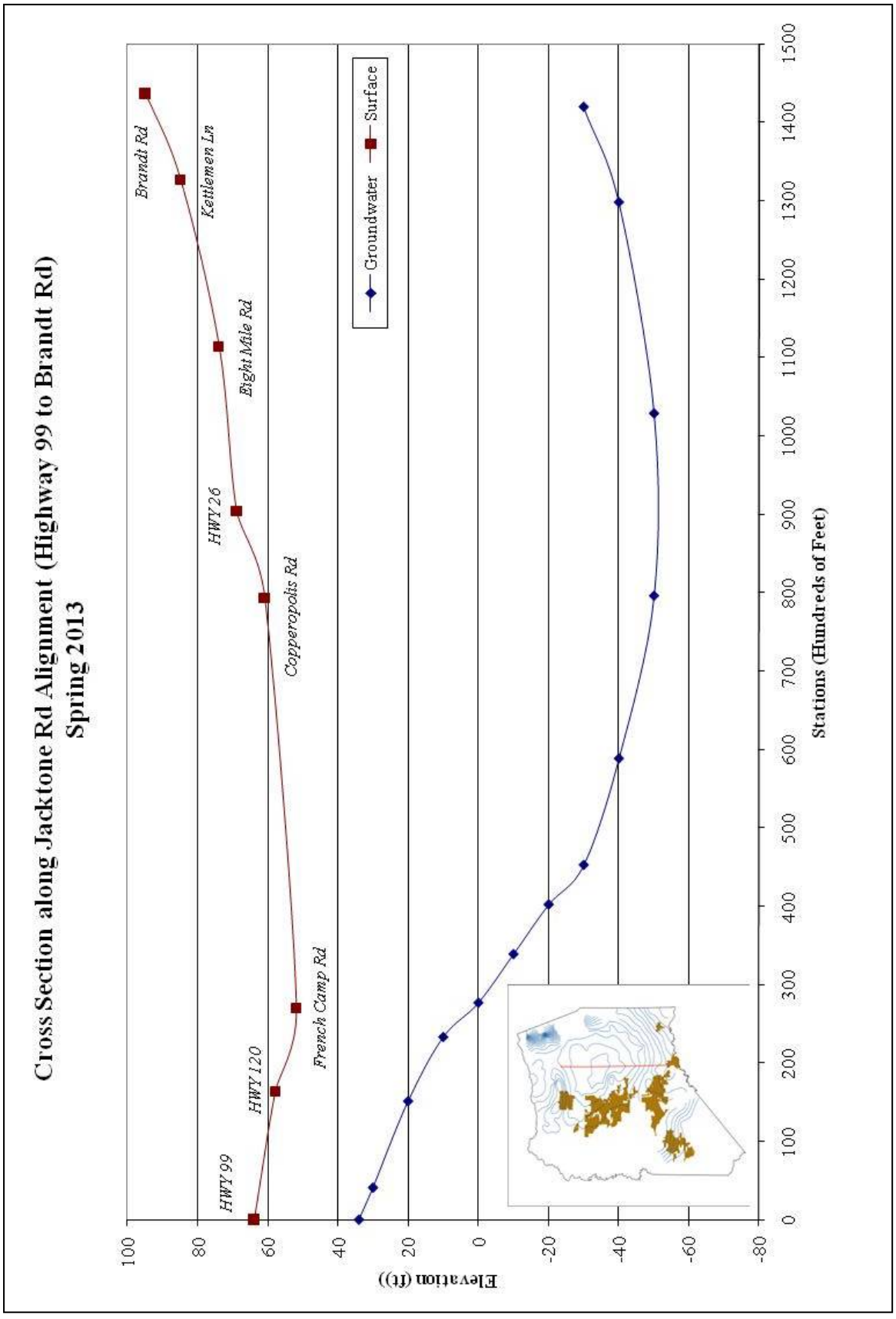

Figure 2-31 Jacktone Rd Cross Section Spring 2013

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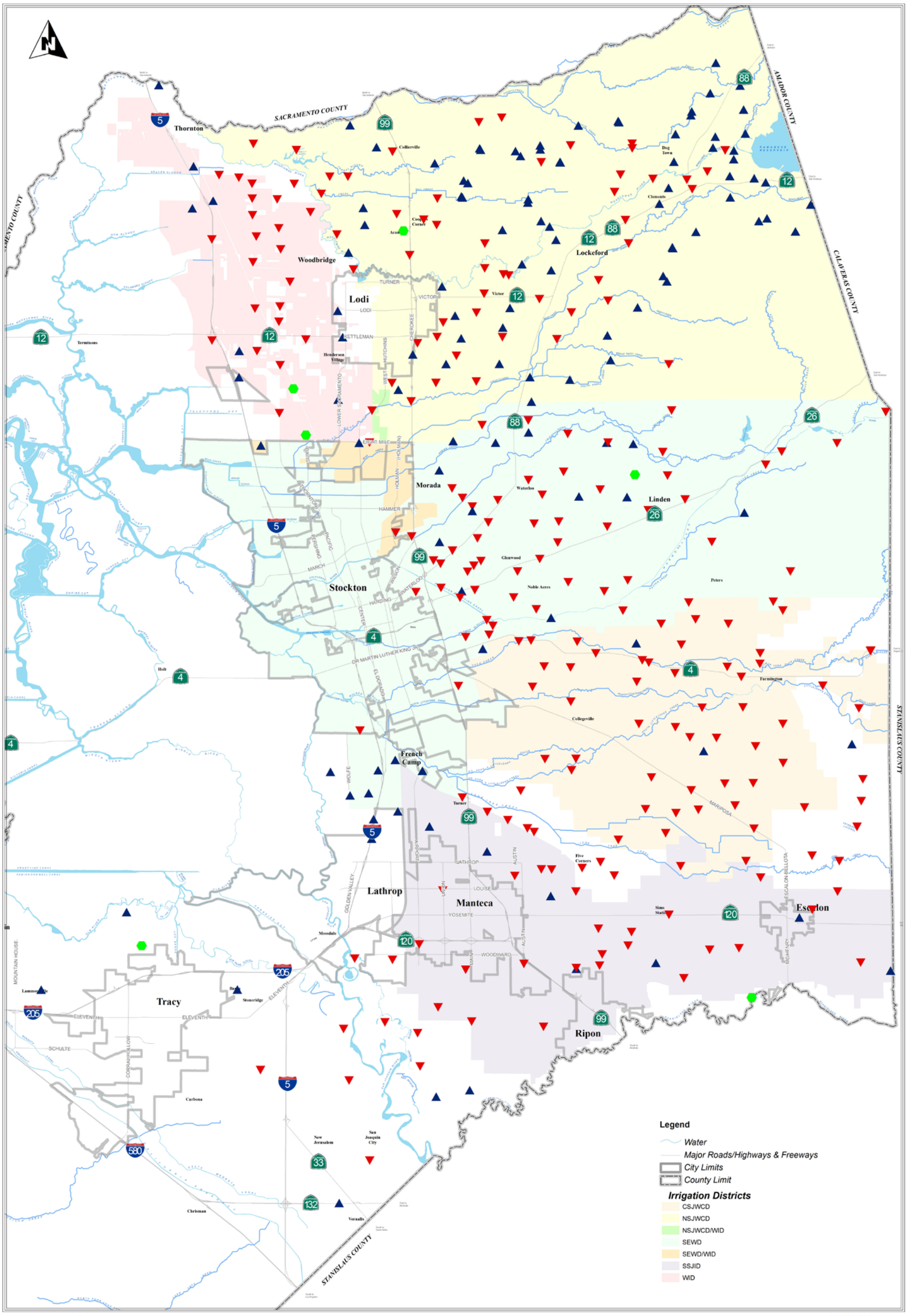
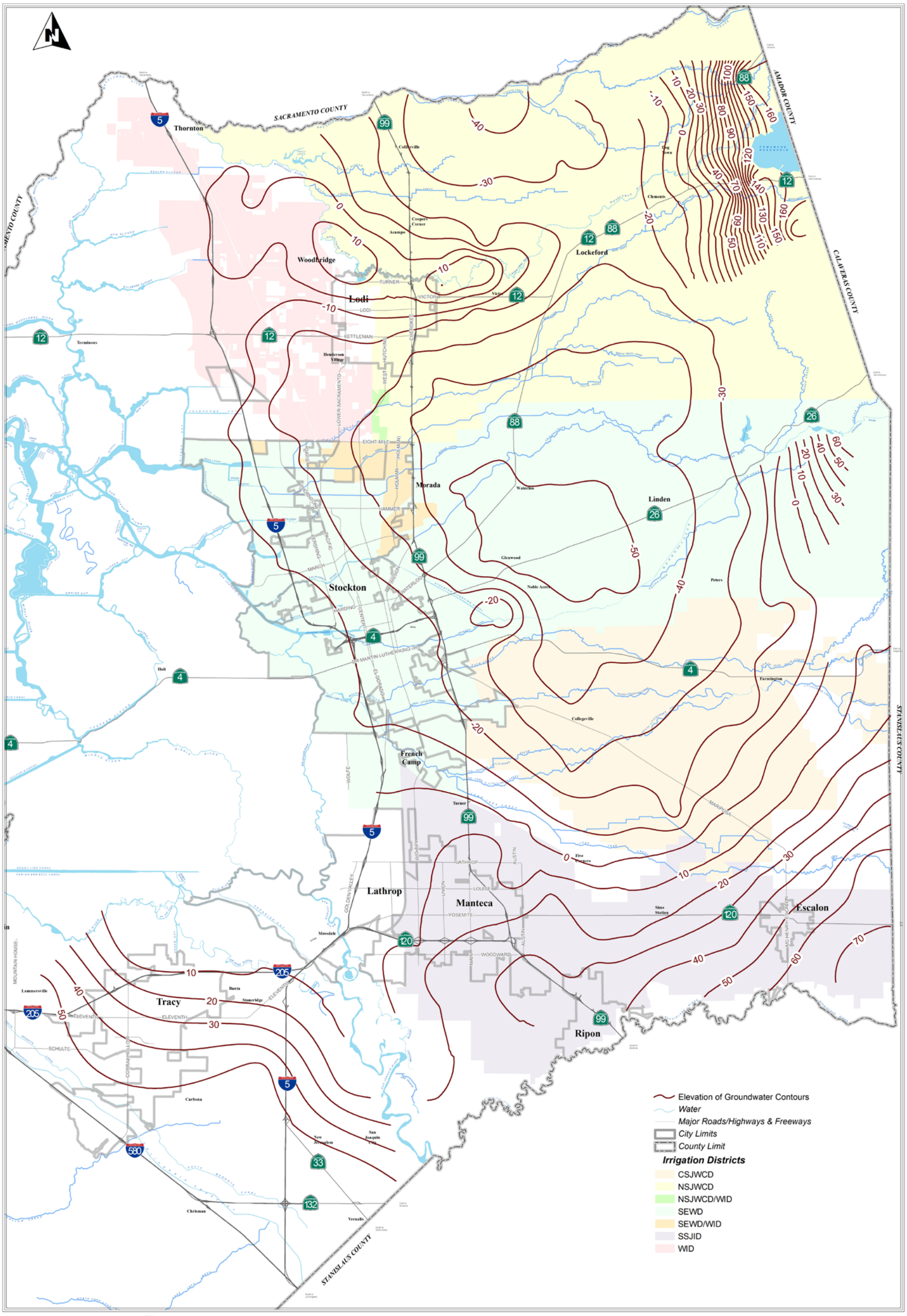


Datum: North American of 1983

Figure 2-32 Differences in Groundwater Elevations Spring 2013 (Spring 2013 and Spring 2012 Comparisons)



LINES OF EQUAL ELEVATION OF GROUNDWATER SPRING 2013

San Joaquin County Public Works Water Resources
1810 East Hazelton Avenue, Stockton CA 95205

The information on this map is based on the most current information available to San Joaquin County Water Resources. The County of San Joaquin does not warrant its accuracy or suitability for any particular purpose. The information on this map is not intended to replace engineering, financial or primary records research.

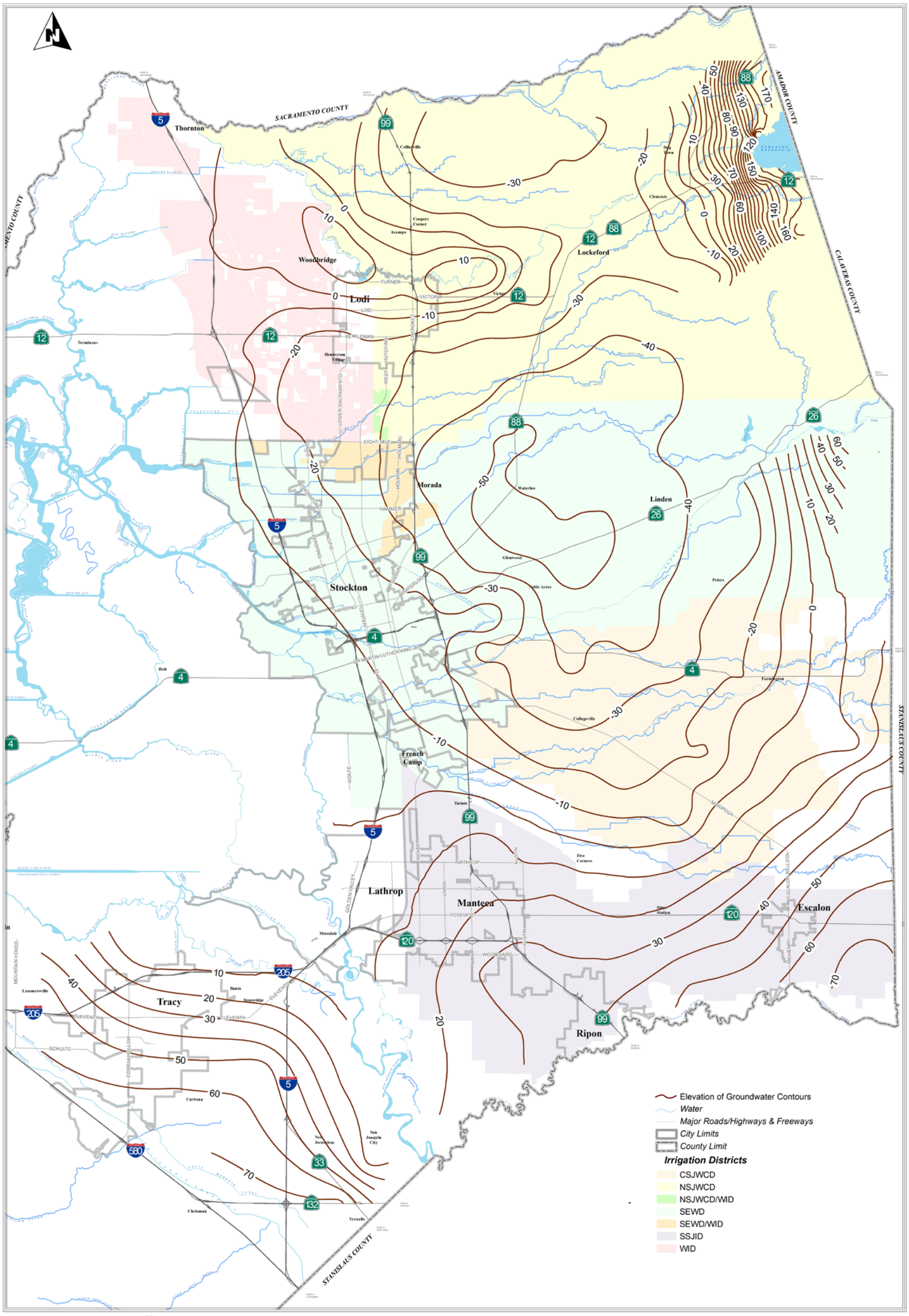
Datum: North American of 1983

1 inch = 3.27 miles

Kilometers 0 1.25 2.5 5

Miles 0 1.25 2.5 5

Figure 2-33 Lines of Equal Elevation of Groundwater Spring 2013



LINES OF EQUAL ELEVATION OF GROUNDWATER SPRING 2012

San Joaquin County Public Works Water Resources
1810 East Hazelton Avenue, Stockton CA 95205

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Datum: North American of 1983

1 inch = 3.27 miles

Kilometers 0 1.25 2.5 5

Miles 0 1.25 2.5 5

Figure 2-34 Lines of Equal Elevation of Groundwater Spring 2012

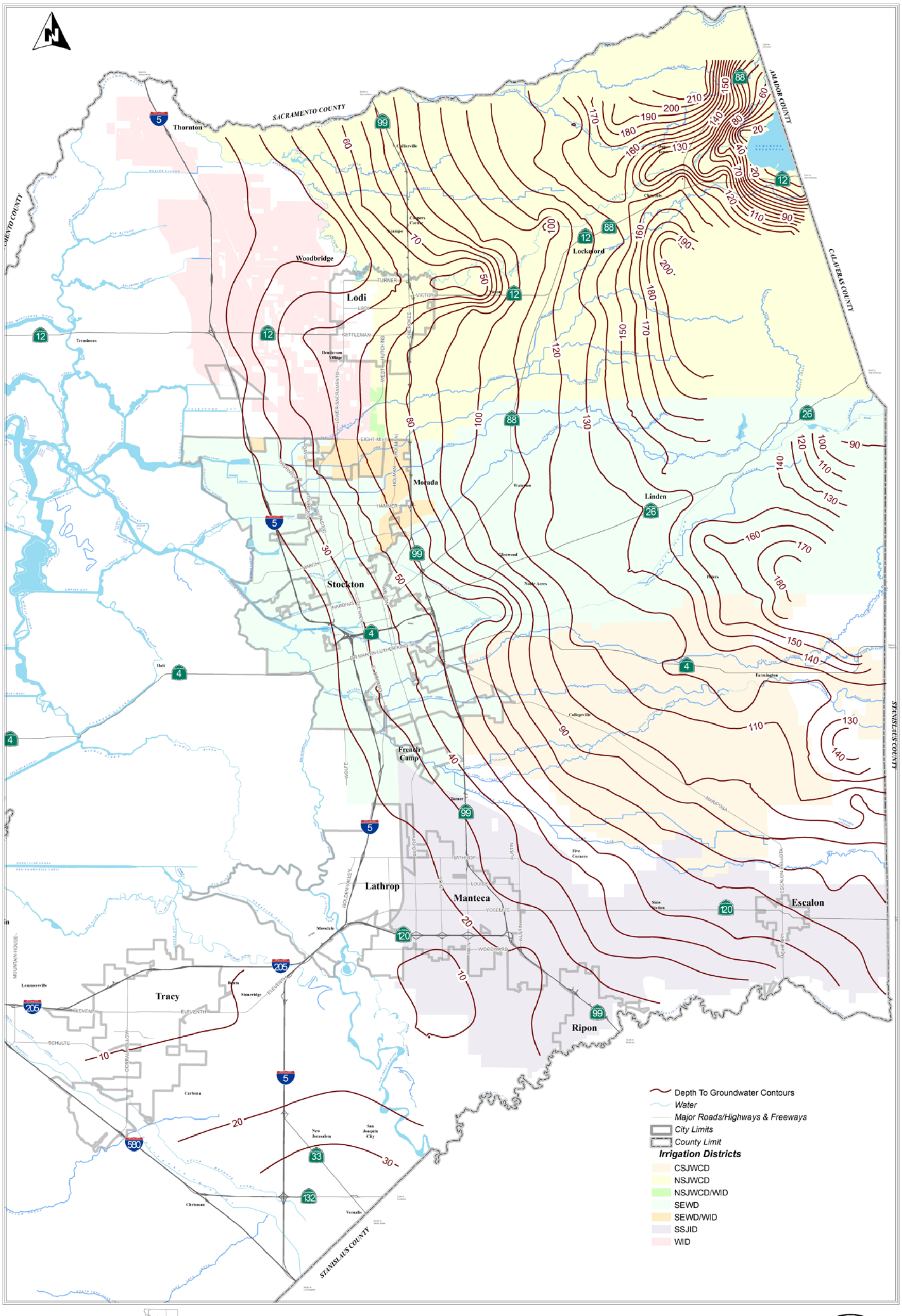

Figure 2-35 Lines of Equal Depth to Groundwater Spring 2013

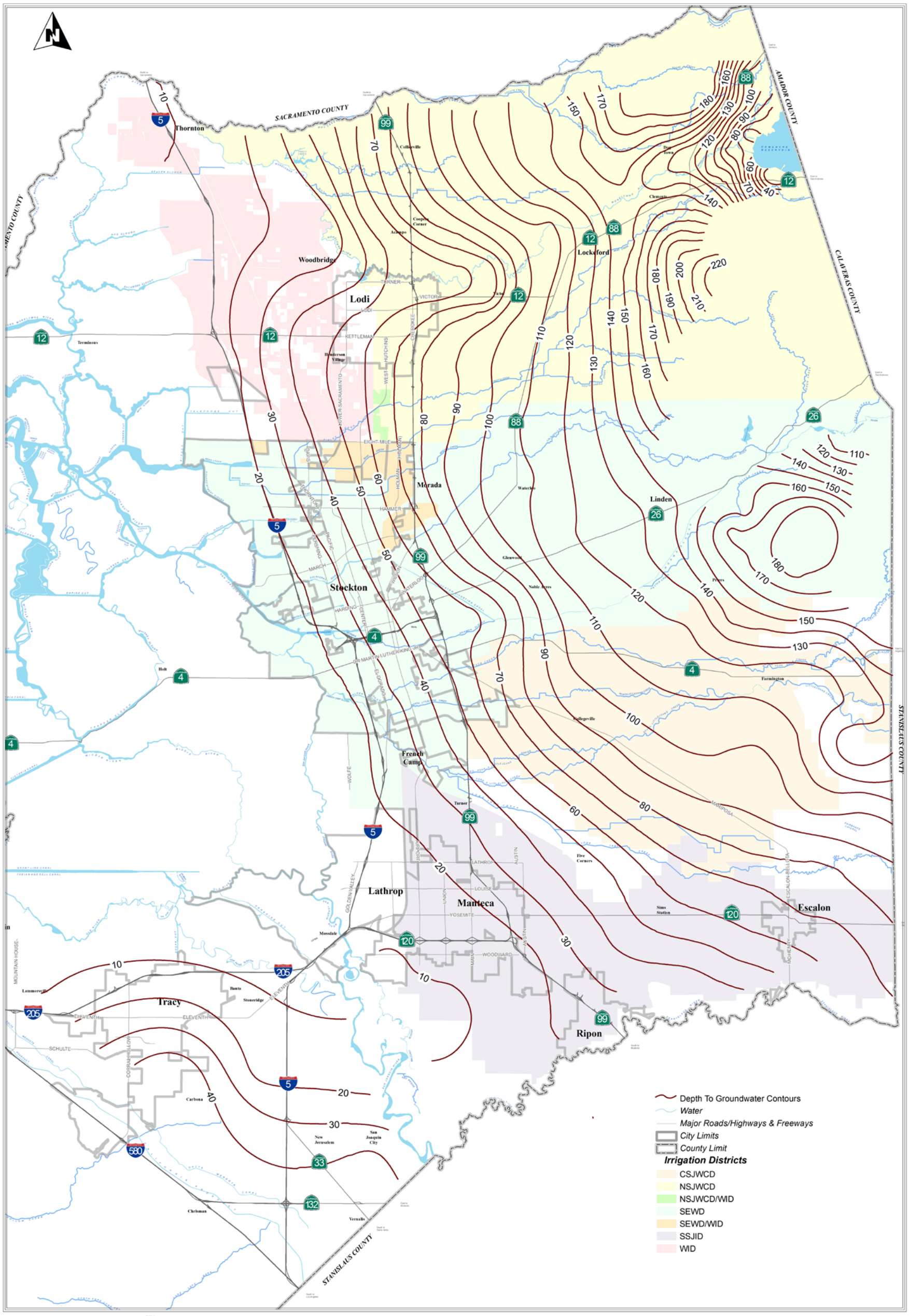

Figure 2-36 Lines of Equal Depth to Groundwater Spring 2012