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2004 - Salinas Valley Hydrologic Subareas, 4th Quarter Water Conditions

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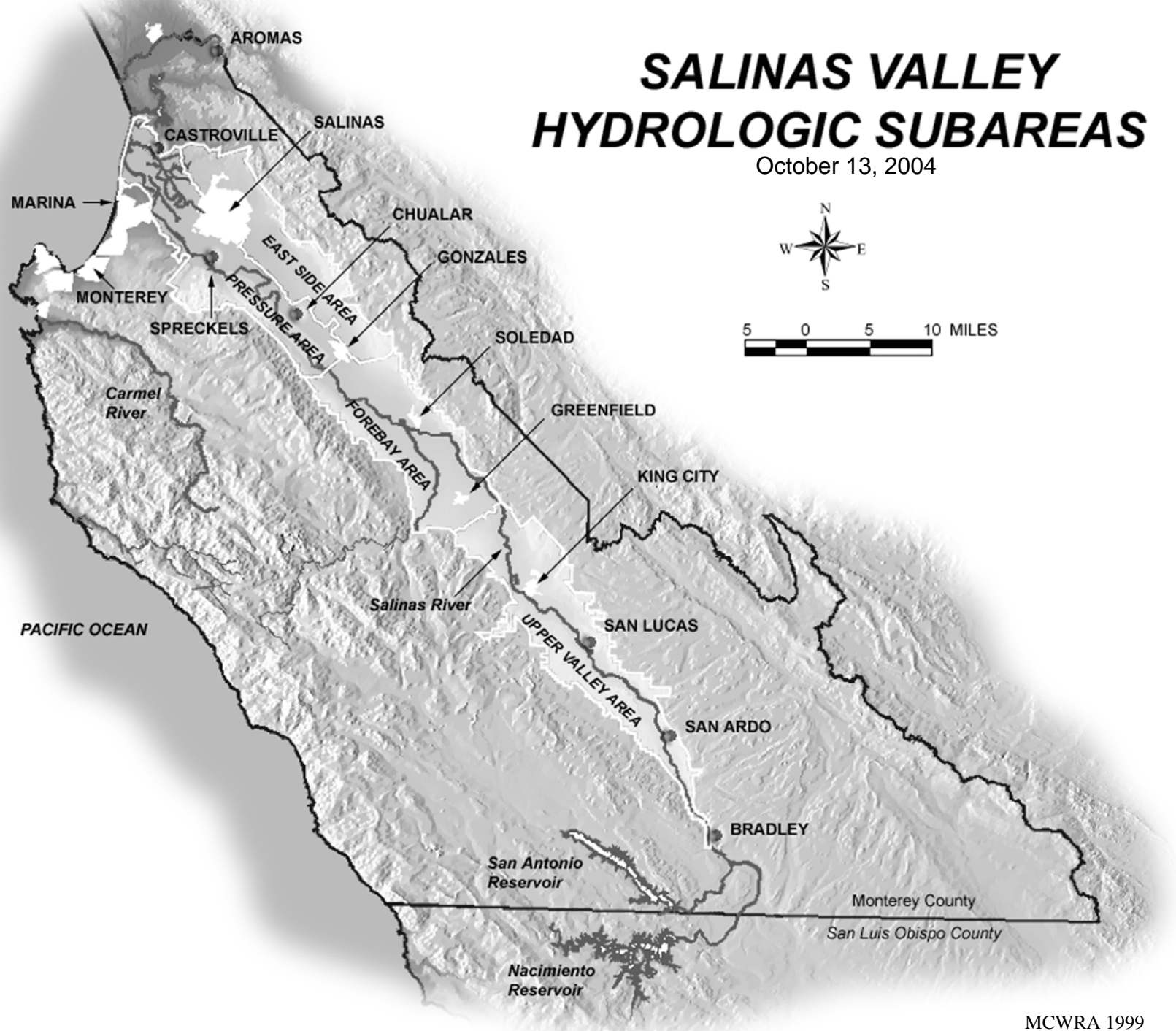
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SALINAS VALLEY HYDROLOGIC SUBAREAS

October 13, 2004



**MONTEREY COUNTY WATER RESOURCES AGENCY
BOARD OF DIRECTORS**

MEETING DATE:	October 13, 2004	AGENDA ITEM:	
AGENDA TITLE:	RECEIVE REPORT ON SALINAS VALLEY WATER CONDITIONS FOR THE FOURTH QUARTER OF WATER YEAR 2003-2004		
Consent (X)		Action ()	
		Information ()	
SUBMITTED BY:	ROBERT JOHNSON	PREPARED BY:	PETER KWIEK
PHONE:	755-4860	PHONE:	755-4860
DEADLINE FOR BOARD ACTION:	October 13, 2004		

RECOMMENDED BOARD ACTION:

Receive report on Salinas Valley water conditions for the fourth quarter of Water Year 2003-2004.

PRIOR RELEVANT BOARD ACTION:

A report was last presented to the Board on July 26, 2004, covering the third quarter of Water Year 2003-2004.

DISCUSSION/ANALYSIS:

This report covers the fourth quarter of Water Year 2003-2004 (WY2004), July through September 2004. It provides a brief overview of water conditions in the Salinas Basin with discussion on precipitation, reservoir storage, and ground water trends. Data for each of these components are included as graphs and tables in Attachments A through J.

Precipitation - The Salinas Airport received no rainfall for the months of July, August or September. For reference, long term average rainfall for these months are 0.02, 0.03, and 0.23 inches, respectively. The total rainfall for water year 2003-2004 was 10.08 inches or approximately 75 percent of the total rainfall for a normal water year.

Dry conditions also prevailed at King City for the entire fourth quarter period. No rain fell there in July or August in accordance with long-term averages for those months of 0.02 inches. In September, King City registered 0.02 inches. The total rainfall for water year 2003-2004 was 7.15 inches or approximately 66 percent of the total rainfall for a normal water year.

Attachments A and B are graphs showing cumulative monthly precipitation data for both stations. Current data is plotted and compared with last year and with normal conditions.

Rainfall data for King City and Salinas Airport should be considered preliminary until verified by National Weather Service data at a later date.

Reservoirs - The following table compares fourth quarter storage at Nacimiento and San Antonio Reservoirs for the past two years. Storage in both reservoirs has decreased compared to September 2003.

Reservoir	September 30, 2004 (WY2004) Storage in acre feet	September 30, 2003 (WY2003) Storage in acre feet	Difference in acre feet
Nacimiento	104,575	144,035	-39,460
San Antonio	135,167	217,950	-82,783

Graphs for each Reservoir showing end-of-month storage for the last ten years are included as Attachments C and D.

Ground Water Levels – More than 80 wells are measured monthly throughout the Salinas Valley to monitor seasonal ground water fluctuations. Data from approximately 50 of these wells is used in the preparation of this report. The measurements are categorized by hydrologic subarea and then averaged and plotted on graphs to compare current water levels with selected past conditions. These conditions include the prior year (WY03), dry conditions (WY91), and near normal conditions (WY85). Each of these comparisons is shown in Attachments E through I, along with a summary of the comparisons shown in Attachment J.

Fourth quarter monthly ground water measurements indicate that water levels in all hydrologic subareas continued to decline in July and August, and began to recover to some extent in September. The only exception was the Forebay subarea, which continued to decline in September.

Compared to last year, average ground water levels in all hydrologic subareas are down. The largest one-year change occurred in the East Side subarea with a decrease of ten feet. Average water levels have declined four feet in the Pressure 180 subarea, two feet in the Pressure 400 subarea, five feet in the Forebay subarea and one foot in the Upper Valley subarea.

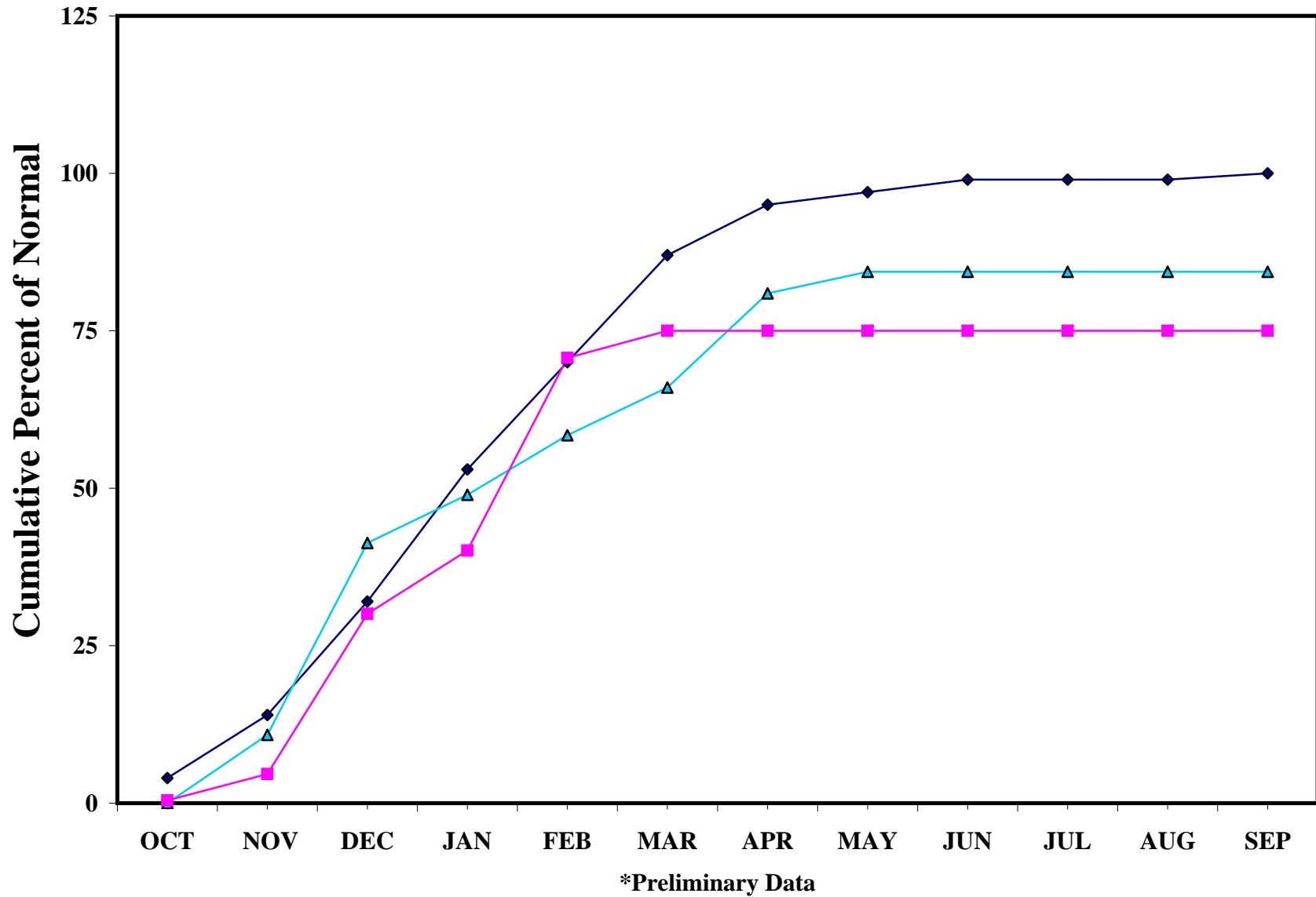
In comparison to Water Year 1985, which is considered to be a year of near normal ground water conditions, current water levels ranged from a four foot increase in the Pressure 400 subarea to a twenty-one foot decrease in the East Side subarea. The Pressure 180 subarea decreased by five feet, the Upper Valley subarea increased by two feet, and the Forebay increased by three feet.

Average ground water levels remained above WY91 values in the fourth quarter of WY04 in all of the hydrologic subareas with the exception of the East Side, where average groundwater levels in August dipped below those of August 1991, before ending the quarter slightly above 1991 levels.

Measurements indicate that fourth quarter WY04 ground water level changes in all subareas resemble fourth quarter WY 2003 trends, although absolute values are almost uniformly lower.

SALINAS AIRPORT RAINFALL

Water Year 2003-04

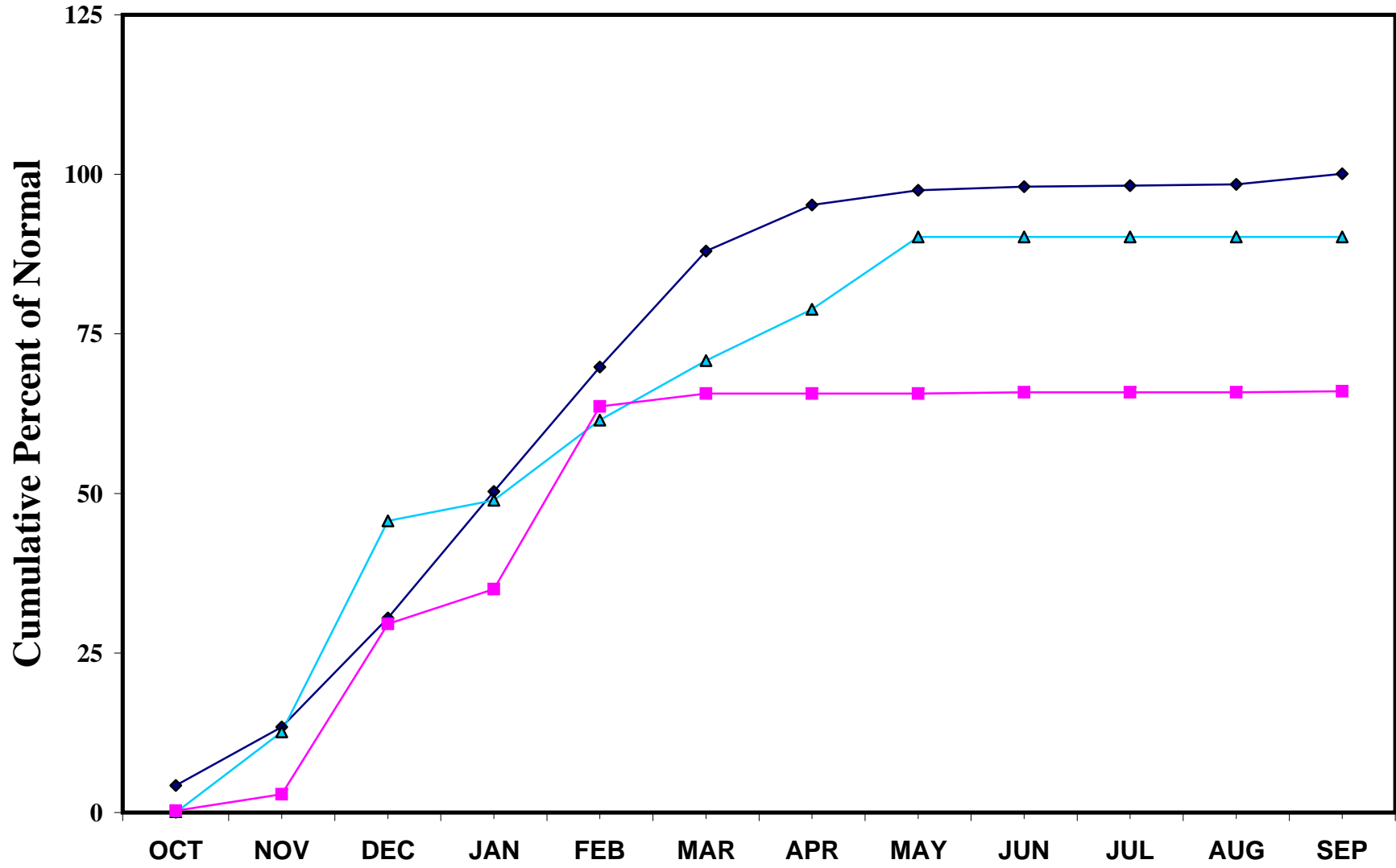


ATTACHMENT A

◆ Normal Water Year ▲ 2002-03 Water Year ■ 2003-04 Water Year

KING CITY RAINFALL

Water Year 2003-04

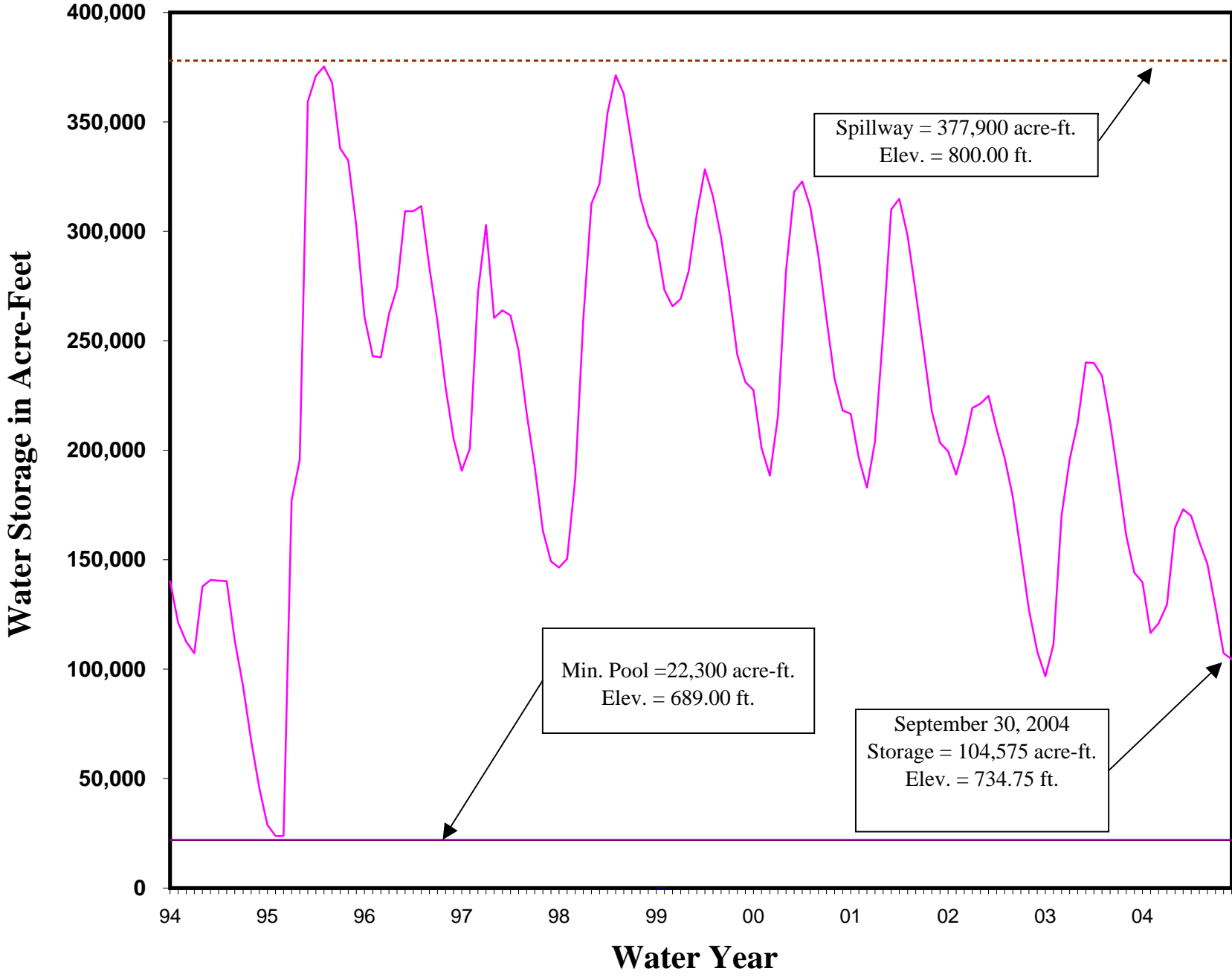


*Preliminary Data

◆ Normal Water Year ▲ 2002-03 Water Year ■ 2003-04 Water Year

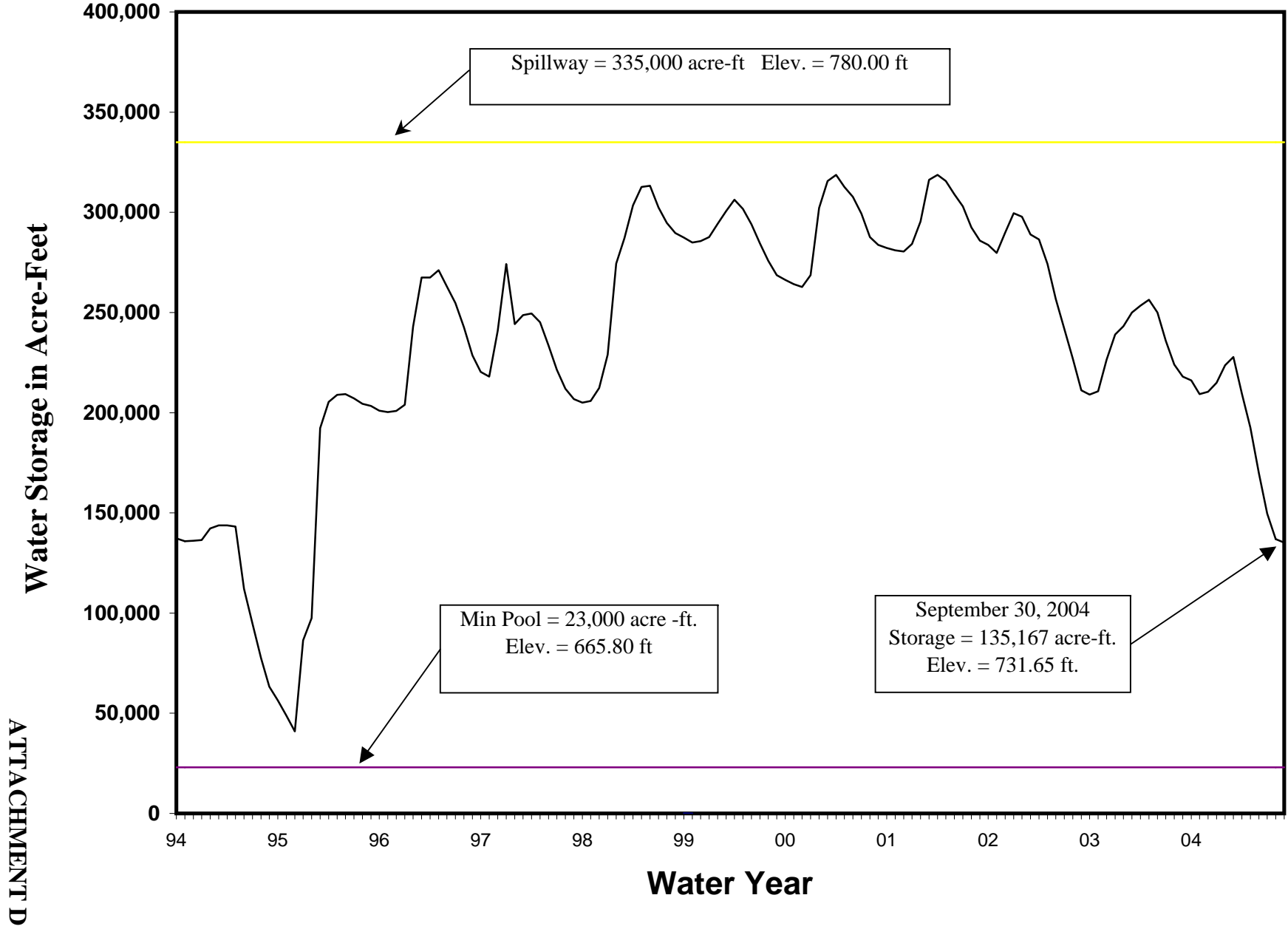
NACIMIENTO RESERVOIR

END OF MONTH STORAGE



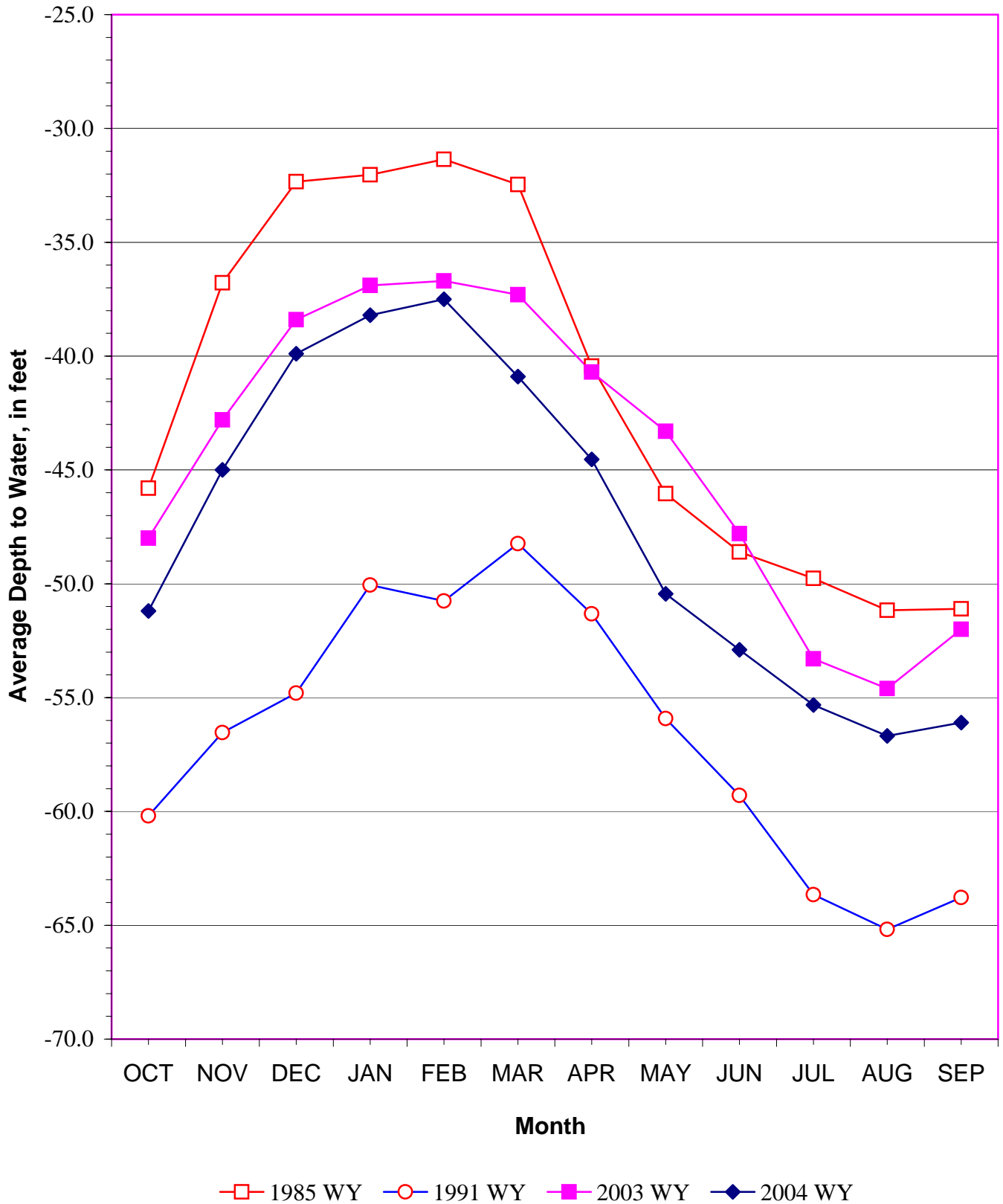
ATTACHMENT C

SAN ANTONIO RESERVOIR END OF THE MONTH STORAGE



ATTACHMENT D

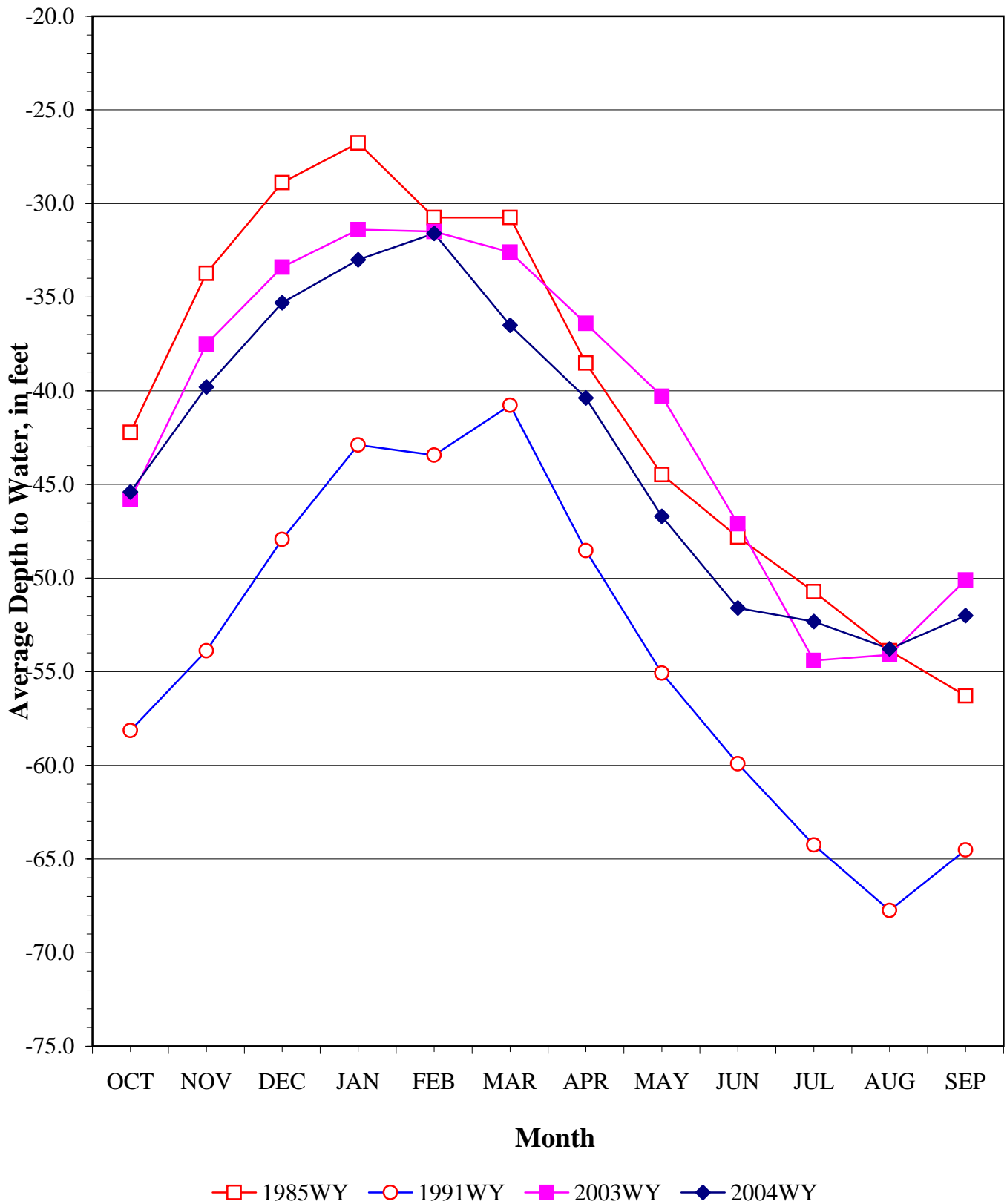
HISTORIC GROUND WATER TRENDS PRESSURE AREA-180 FOOT AQUIFER 5 Wells



HISTORIC GROUND WATER TRENDS

PRESSURE AREA-400 FOOT AQUIFER

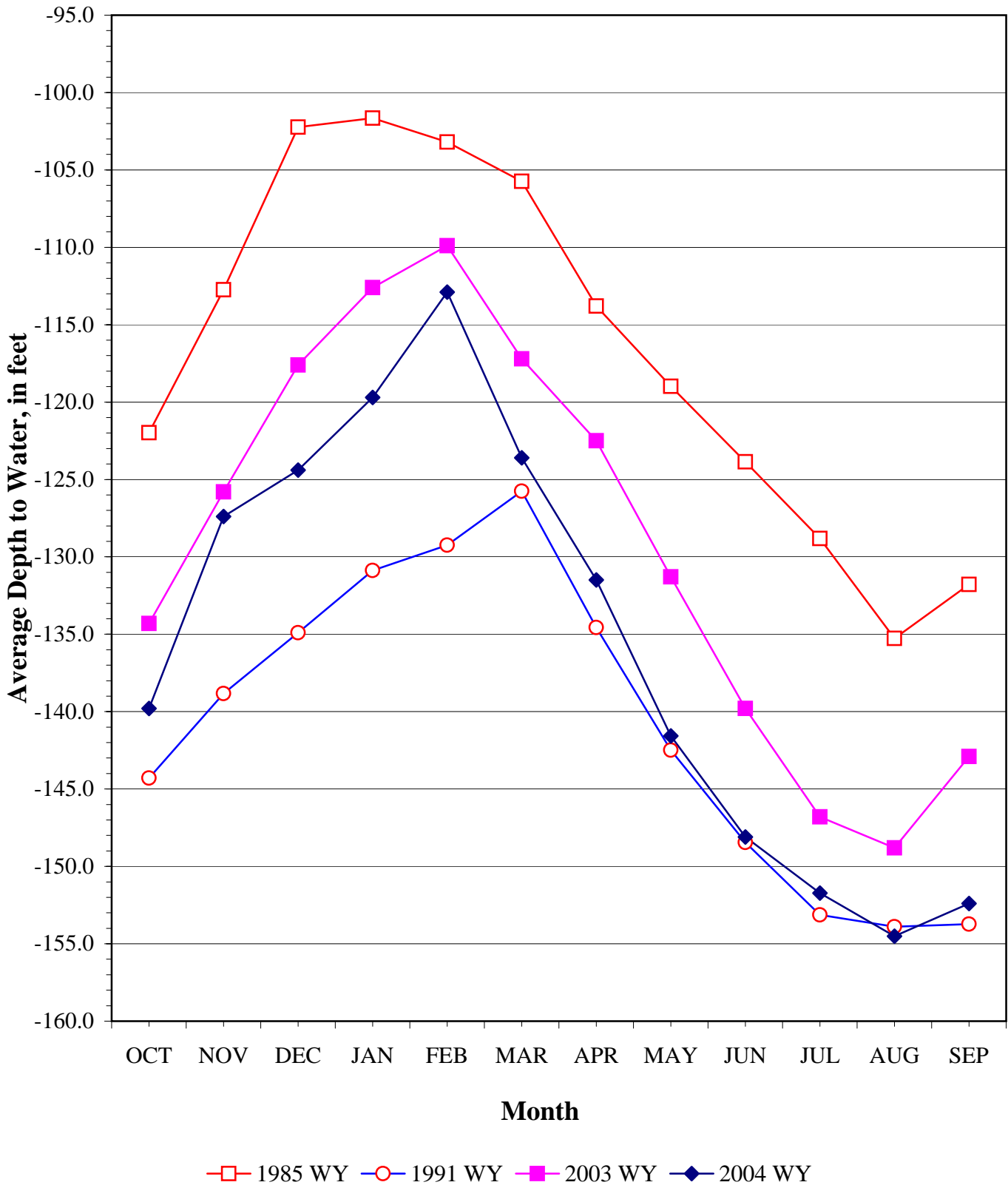
11 Wells



HISTORIC GROUND WATER TRENDS

EAST SIDE AREA

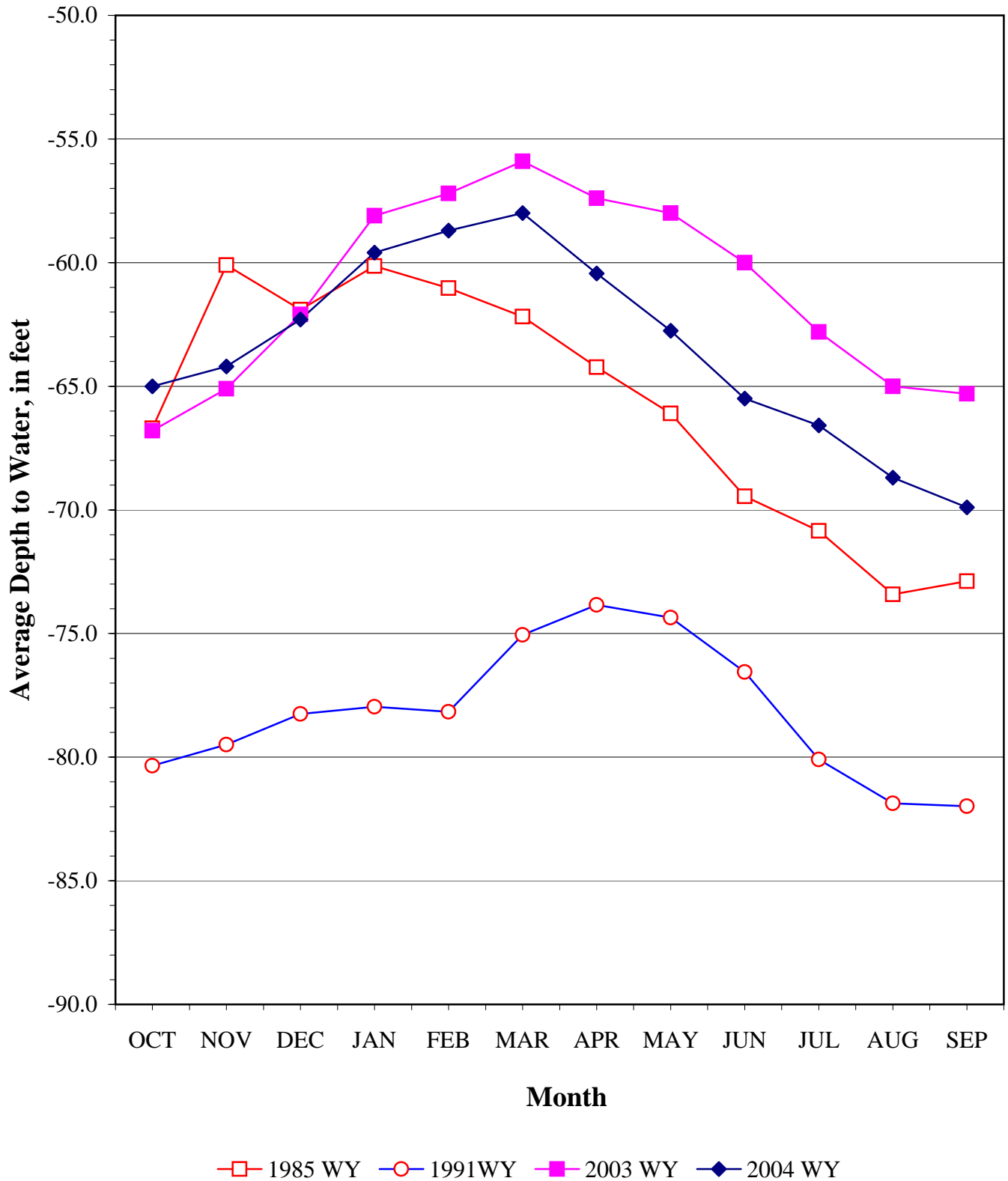
11 Wells



HISTORIC GROUND WATER TRENDS

FOREBAY AREA

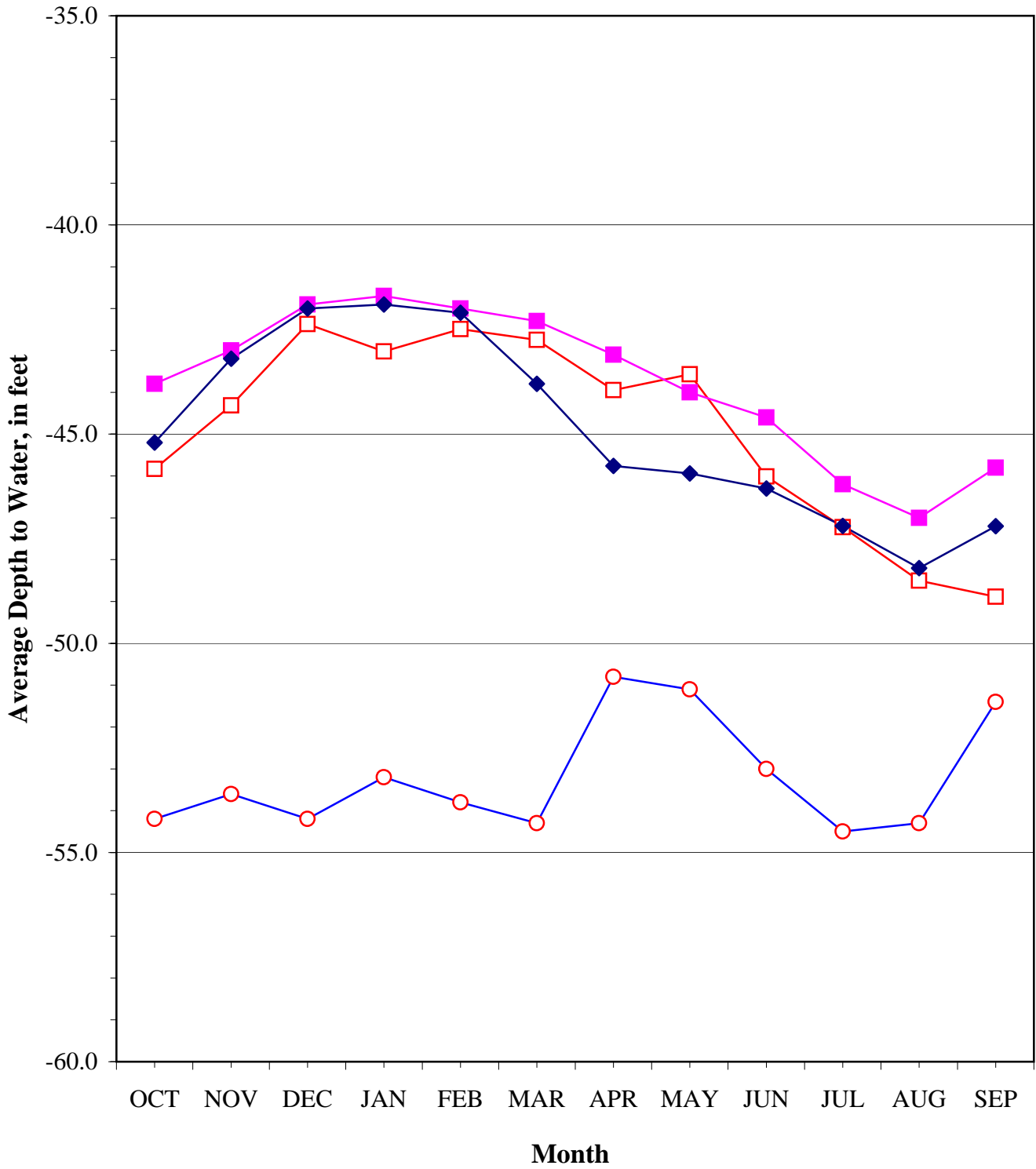
10 Wells



HISTORIC GROUND WATER TRENDS

UPPER VALLEY AREA

9 Wells



—□— 1985WY
 —○— 1991WY
 —■— 2003 WY
 —◆— 2004 WY

Generalized Ground Water Trends

September 2004

AREA	September 2004 Depth to Water	1 Year Change	Change From WY 1985	1 Month Change
180' Aquifer in Pressure Area	56'	down 4'	down 5'	up 1'
400' Aquifer in Pressure Area	52'	down 2'	up 4'	up 2'
East Side Area	152'	down 10'	down 21'	up 2'
Forebay Area	70'	down 5'	up 3'	down 1'
Upper Valley Area	47'	down 1'	up 2'	up 1'

September water levels, compared to last year, range from 10' lower to 1' lower.

September water levels, compared to WY 1985, range from 21' lower to 4' higher.

September changes in water levels over the last month range from 1' lower to 2' higher.