

1-3-2019

## 2009 - Salinas Valley Hydrologic Subareas, 4th Quarter Water Conditions

Follow this and additional works at: [https://digitalcommons.csumb.edu/hornbeck\\_cgb\\_6\\_a](https://digitalcommons.csumb.edu/hornbeck_cgb_6_a)



Part of the [Agricultural and Resource Economics Commons](#), [Business Commons](#), [Education Commons](#), [Engineering Commons](#), [Life Sciences Commons](#), and the [Physical Sciences and Mathematics Commons](#)

---

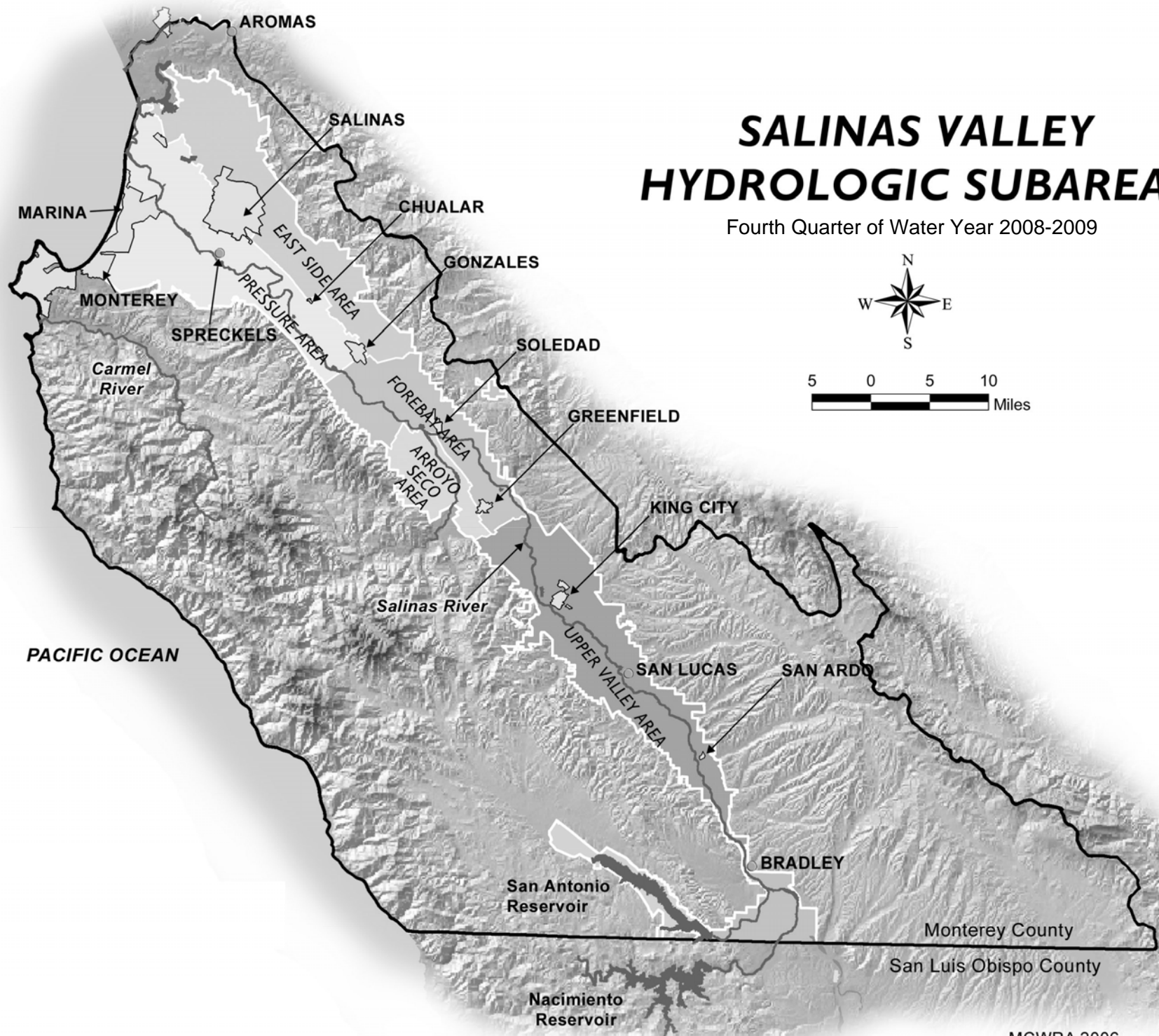
### Recommended Citation

"2009 - Salinas Valley Hydrologic Subareas, 4th Quarter Water Conditions" (2019). *Monterey County Water Resources Agency Water Reports*. 35.  
[https://digitalcommons.csumb.edu/hornbeck\\_cgb\\_6\\_a/35](https://digitalcommons.csumb.edu/hornbeck_cgb_6_a/35)

This Report is brought to you for free and open access by the Monterey County Water Resources Agency at Digital Commons @ CSUMB. It has been accepted for inclusion in Monterey County Water Resources Agency Water Reports by an authorized administrator of Digital Commons @ CSUMB. For more information, please contact [digitalcommons@csumb.edu](mailto:digitalcommons@csumb.edu).

# SALINAS VALLEY HYDROLOGIC SUBAREAS

Fourth Quarter of Water Year 2008-2009



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

<b>MEETING DATE:</b>	OCTOBER 26, 2009	<b>AGENDA ITEM:</b>	
<b>AGENDA TITLE:</b>	RECEIVE REPORT ON SALINAS VALLEY WATER CONDITIONS FOR THE FOURTH QUARTER OF WATER YEAR 2008-2009		
<b>Consent ( X )                      Action (   )                      Information (   )</b>			
<b>SUBMITTED BY:</b>	ROBERT JOHNSON	<b>PREPARED BY:</b>	P. Kwiek, L. Lippert
<b>PHONE:</b>	(831) 755-4860	<b>PHONE:</b>	(831) 755-4860
<b>DEADLINE FOR BOARD ACTION:</b>		OCTOBER 26, 2009	

**RECOMMENDED BOARD ACTION:**

Receive report on Salinas Valley water conditions for the fourth quarter of Water Year 2008-2009.

**PRIOR RELEVANT BOARD ACTION:**

A report was last presented to the Board on July 27, 2009, covering the third quarter of Water Year 2008-2009.

**DISCUSSION/ANALYSIS:**

This report covers the fourth quarter of Water Year 2008-2009 (WY09), July through September 2009. It provides a brief overview of water conditions in the Salinas Valley with discussion on precipitation, reservoir storage, and ground water level trends. Data for each of these components are included as graphs and tables in Attachments A through J.

**Precipitation** – The Salinas Airport received typical rainfall for the months of July, August and September. For reference, long term rainfall averages for these months are 0.04, 0.05, and 0.21 inches, respectively. This year, no rain fell in July, while 0.29 inches fell in August and 0.10 inches fell in September. The total rainfall for WY09 at the Salinas Airport was 11.37 inches, or approximately 89 percent of the total rainfall for a normal water year.

Dry conditions prevailed at King City throughout the fourth quarter. No rain fell there in July, August, or September. King City's total rainfall for WY09 was 6.00 inches, or approximately 50 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 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 Nacimiento Reservoir is 79,730 acre feet lower than September 2008 while storage in San Antonio Reservoir is 87,635 acre feet lower than last year.

<b>Reservoir</b>	<b>September 30, 2009 (WY09) Storage in acre feet</b>	<b>September 30, 2008 (WY08) Storage in acre feet</b>	<b>Difference in acre feet</b>
Nacimiento	43,025	122,755	-79,730
San Antonio	107,050	194,685	-87,635

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 level 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 (WY08), 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 level measurements indicate that water levels in all hydrologic subareas continued to decline in July. In August, water levels decreased in the Pressure 180-Foot Aquifer and Forebay Subarea, remained unchanged in the Upper Valley Subarea, and began to recover slightly in the Pressure 400-Foot Aquifer and Eastside Subarea. By September, water levels were recovering in all subareas except the Forebay and Upper Valley, where they were unchanged.

Compared to September 2008, average ground water levels decreased by three feet in the Pressure 180-Foot Aquifer and the East Side Subarea, decreased by one foot in the Pressure 400-Foot Aquifer and the Forebay Subarea, and increased by one foot in the Upper Valley Subarea.

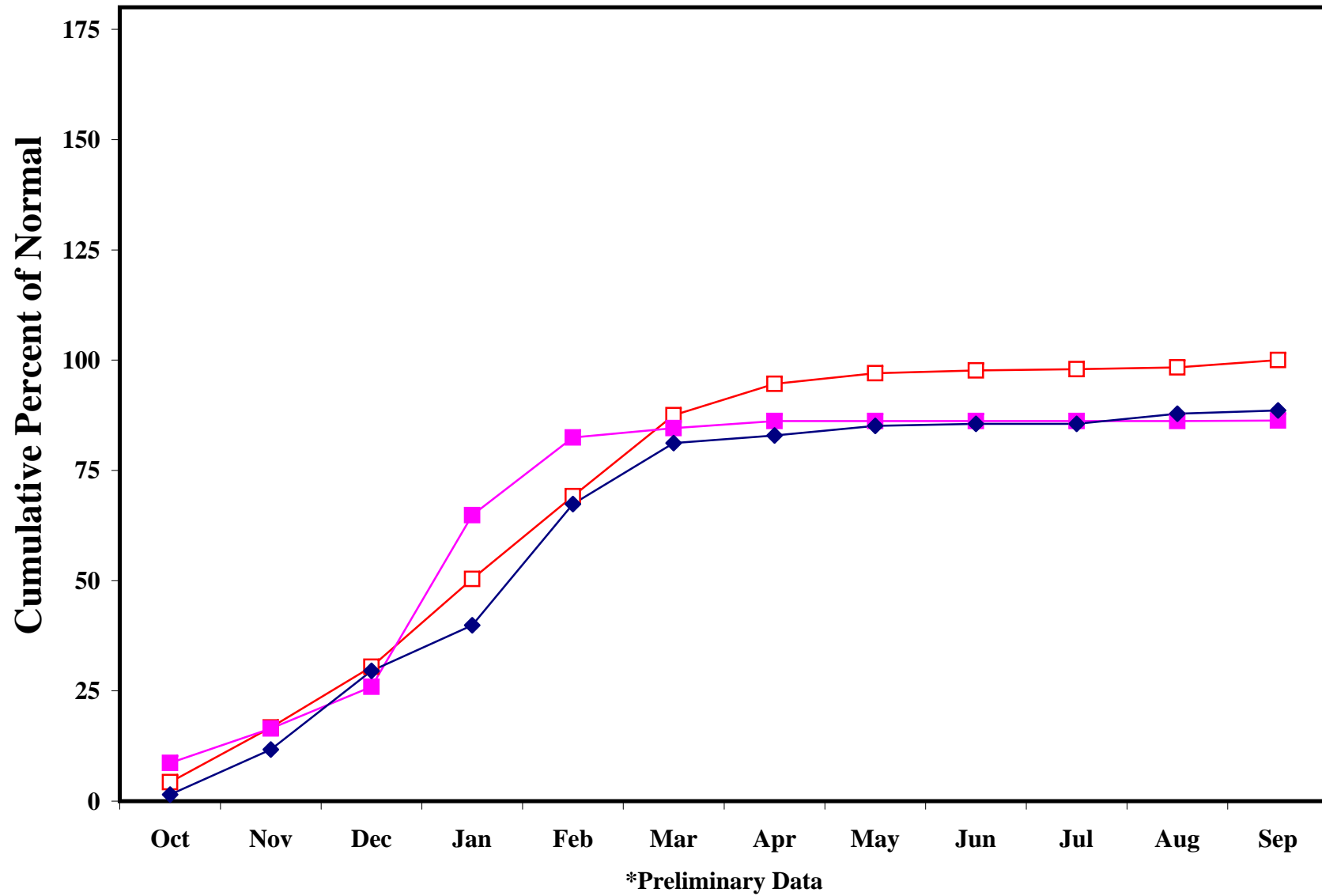
When compared to WY85, which is considered to be a year of near-normal ground water conditions, current water level changes range from an increase of four feet in the Pressure 400-Foot Aquifer to a decrease of eighteen feet in the East Side Subarea. Water levels in the Pressure 180-Foot Aquifer are eight feet lower than in WY85, while water levels in the Forebay and Upper Valley subareas are one and two feet higher, respectively.

Average ground water levels for the fourth quarter of WY09 remain well above WY91 values in all of the hydrologic subareas.

<b>FINANCIAL IMPACT:</b>	<b>YES (   )</b> <b>NO ( X )</b>
<b>FUNDING SOURCE:</b>	
<b>COMMITTEE REVIEW AND RECOMMENDATION:</b>	None
<b>ATTACHMENTS:</b>	1. Salinas Valley Hydrologic Subareas Map 2. Salinas and King City Precipitation Graphs 3. Nacimiento and San Antonio Reservoir Graphs 4. Salinas Valley Monthly Water Level Graphs for Each Subarea, Attachments E through I 5. Generalized Ground Water Trends, Attachment J.
<b>APPROVED:</b>	<div style="border-top: 1px solid black; display: flex; justify-content: space-between; margin-top: 10px;"> <span><b>General Manager</b></span> <span><b>Date</b></span> </div>

# SALINAS AIRPORT RAINFALL

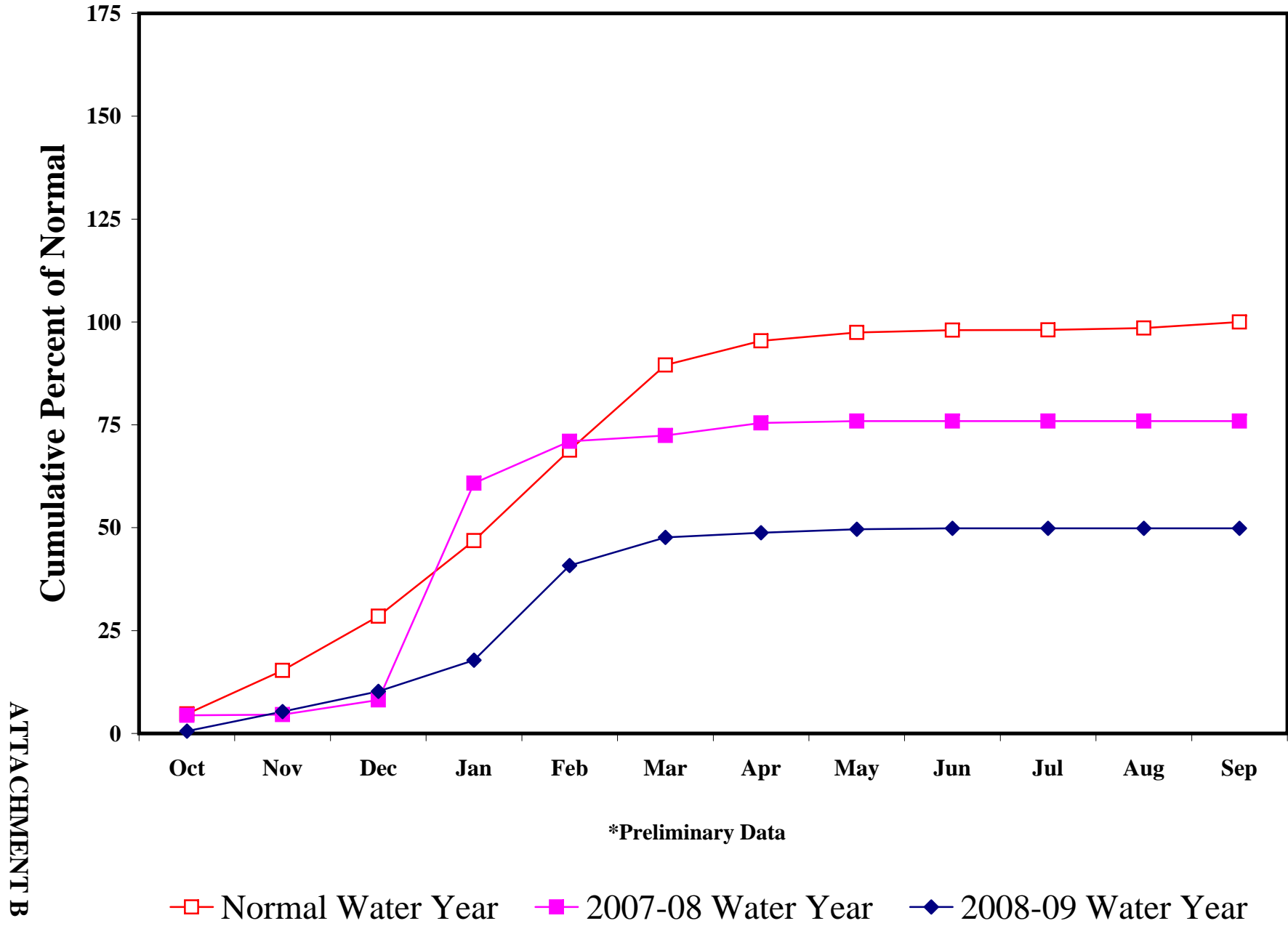
## Water Year 2008-09



—□— Normal Water Year —■— 2007-08 Water Year —◆— 2008-09 Water Year

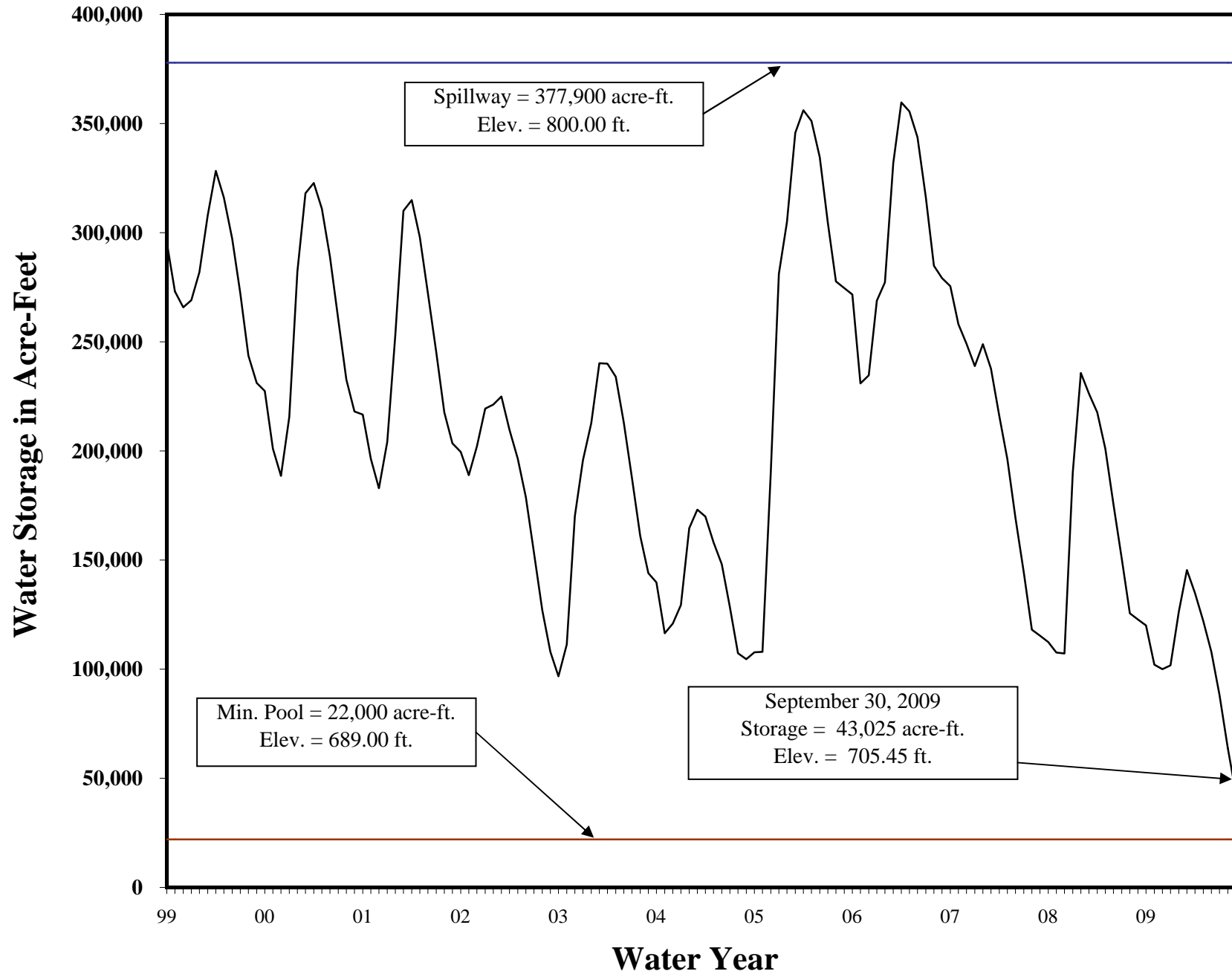
# KING CITY RAINFALL

## Water Year 2008-09



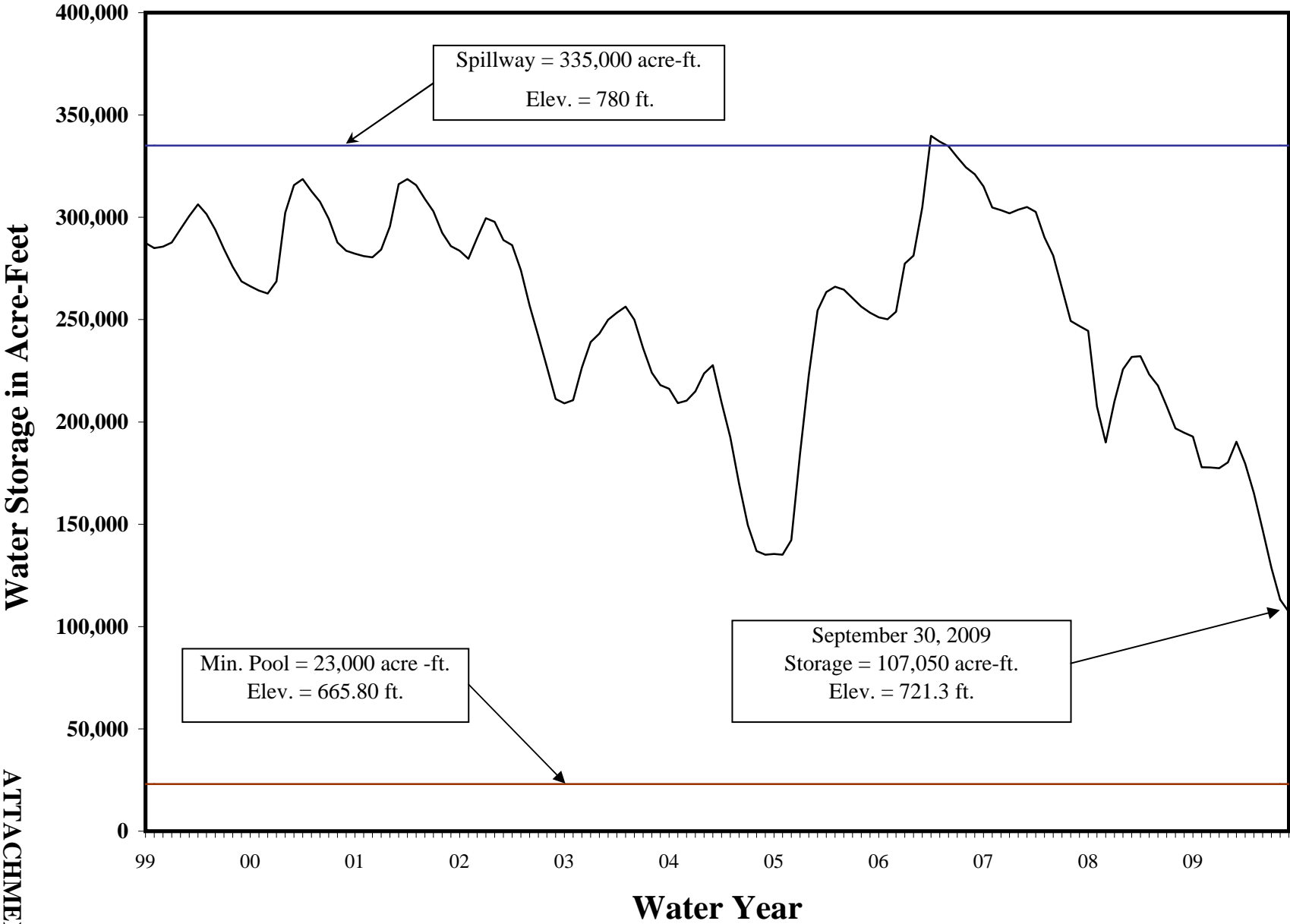
# NACIMIENTO RESERVOIR

## END OF MONTH STORAGE





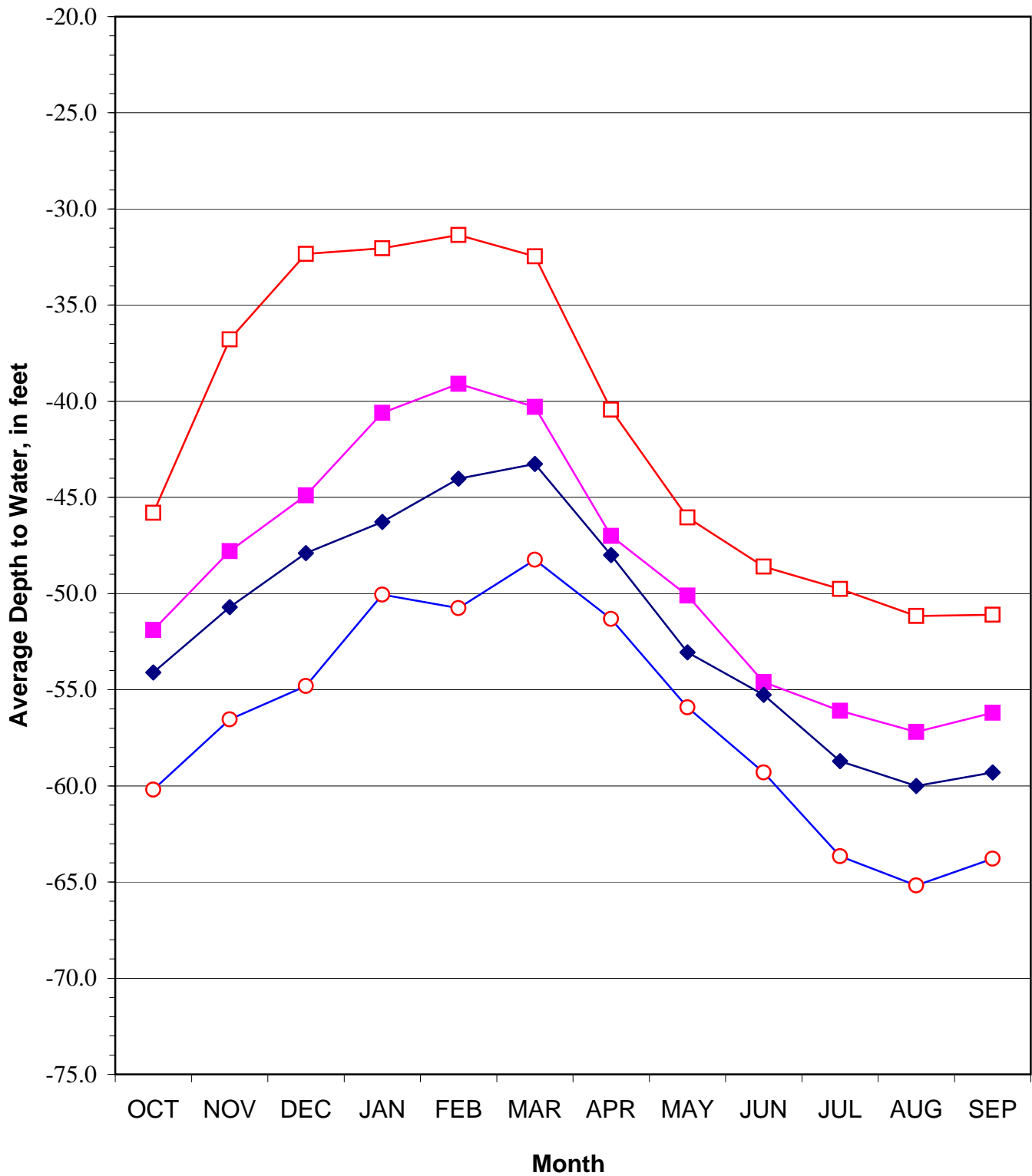
**SAN ANTONIO RESERVOIR**  
**END OF MONTH STORAGE**



# HISTORIC GROUND WATER TRENDS

## PRESSURE AREA-180 FOOT AQUIFER

5 Wells

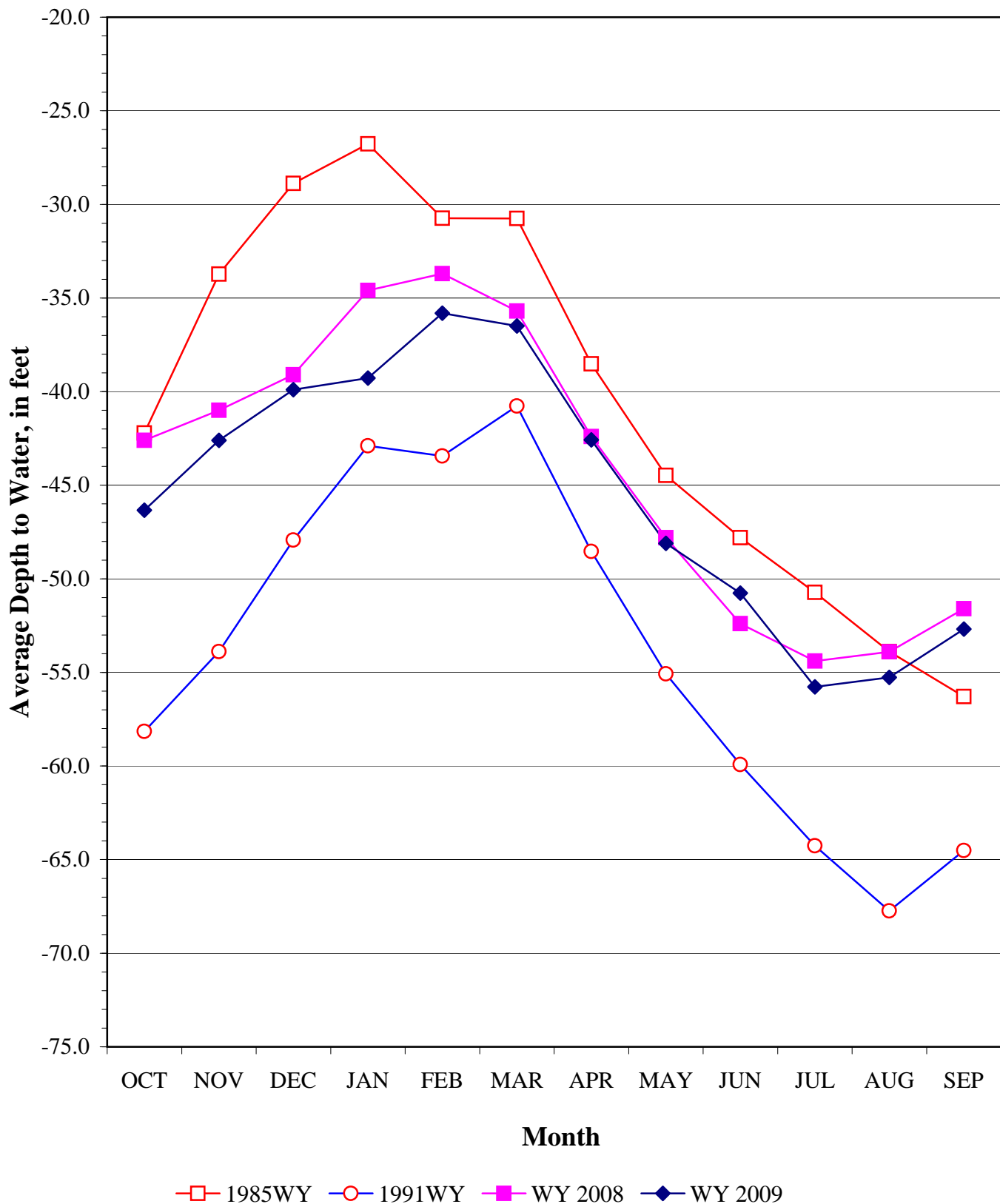


—□— 1985 WY    —○— 1991 WY    —■— WY 2008    —◆— WY 2009

# HISTORIC GROUND WATER TRENDS

## PRESSURE AREA-400 FOOT AQUIFER

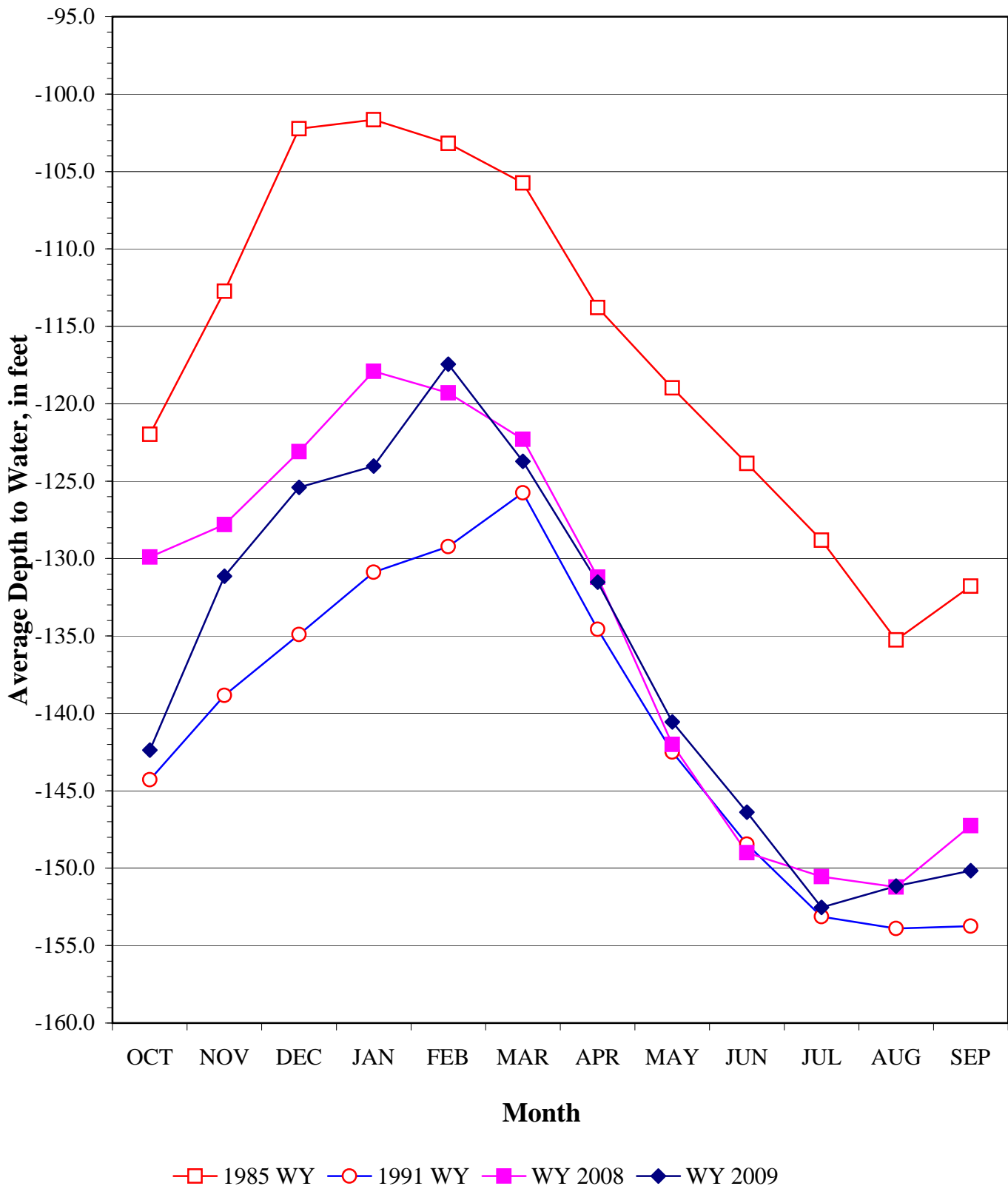
11 Wells



# HISTORIC GROUND WATER TRENDS

## EAST SIDE AREA

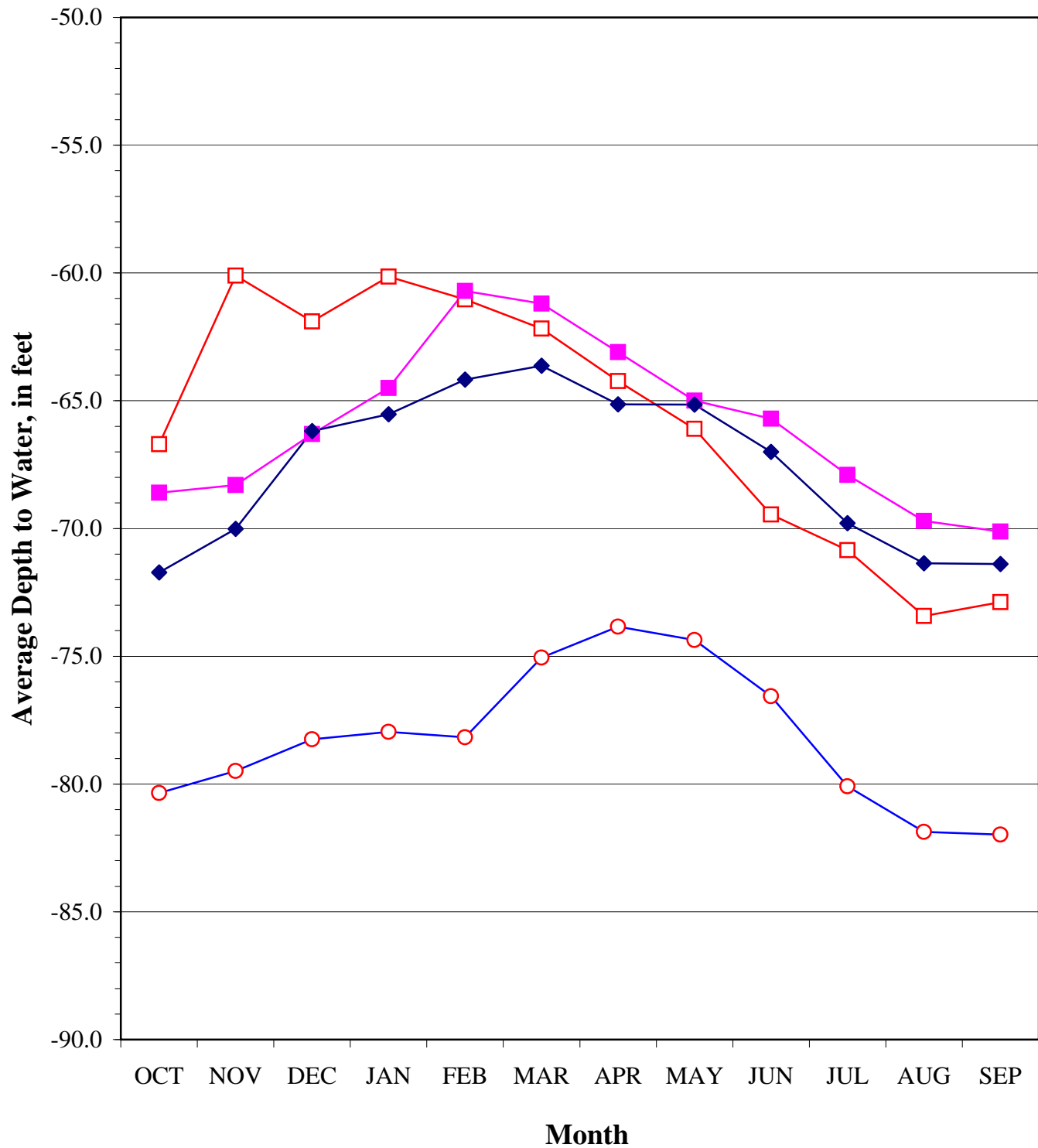
11 Wells



# HISTORIC GROUND WATER TRENDS

## FOREBAY AREA

10 Wells

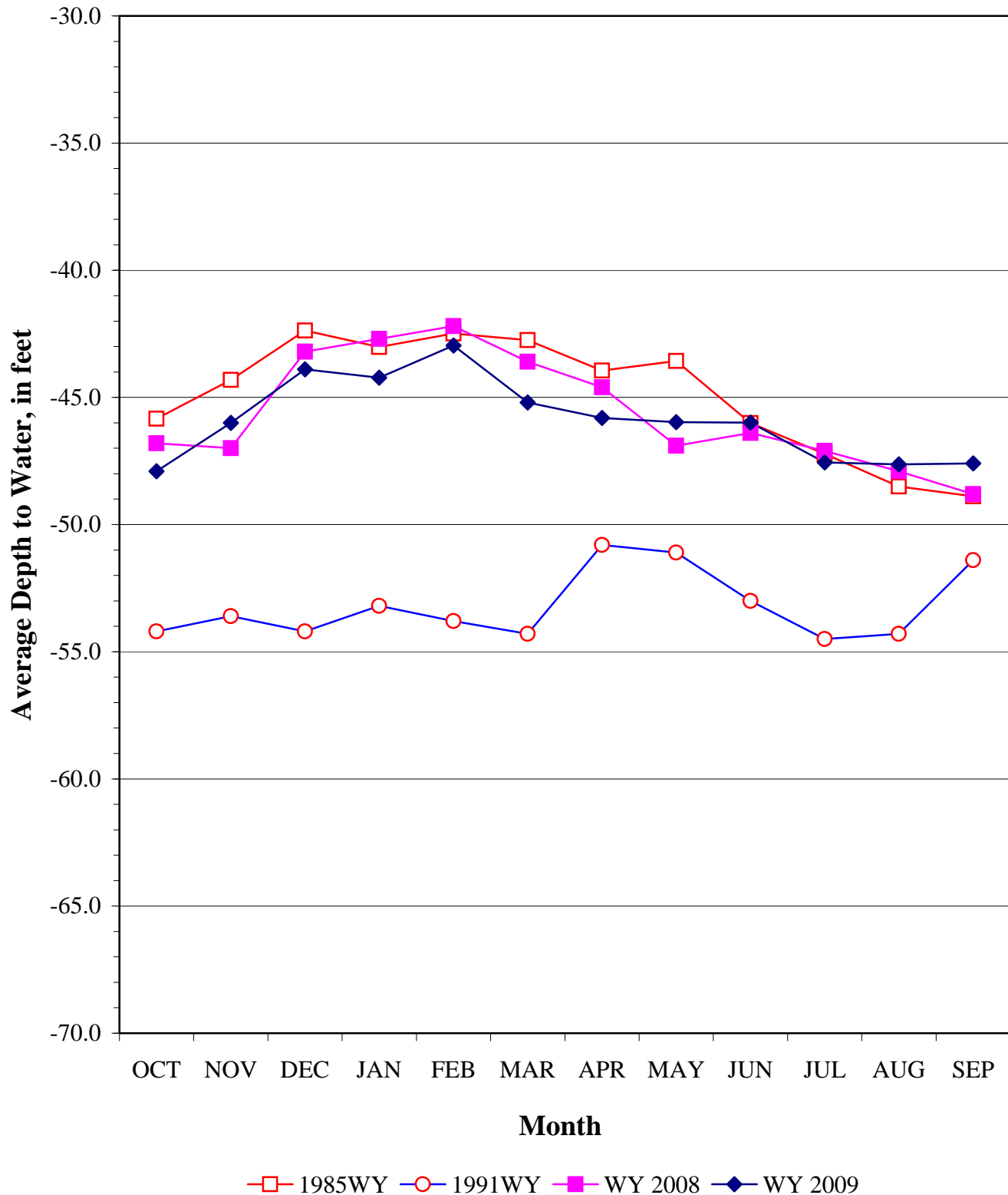


—□— 1985 WY —○— 1991 WY —■— 2008 WY —◆— 2009 WY

# HISTORIC GROUND WATER TRENDS

## UPPER VALLEY AREA

9 Wells



## **Generalized Ground Water Trends**

**September 2009**

<b>AREA</b>	<b>September 2009 Depth to Water</b>	<b>1 Year Change</b>	<b>Change From WY 1985</b>	<b>1 Month Change</b>
<b>180' Aquifer in Pressure Area</b>	<b>59'</b>	<b>down 3'</b>	<b>down 8'</b>	<b>up 1'</b>
<b>400' Aquifer in Pressure Area</b>	<b>53'</b>	<b>down 1'</b>	<b>up 4'</b>	<b>up 3'</b>
<b>East Side Area</b>	<b>150'</b>	<b>down 3'</b>	<b>down 18'</b>	<b>up 1'</b>
<b>Forebay Area</b>	<b>71'</b>	<b>down 1'</b>	<b>up 1'</b>	<b>no change</b>
<b>Upper Valley Area</b>	<b>47'</b>	<b>up 1'</b>	<b>up 2'</b>	<b>no change</b>

**September water levels, compared to last year, range from 3' lower to 1' higher.**

**September water levels, compared to WY 1985, range from 18' lower to 4' higher.**

**September changes in water levels over the last month range from no change to 3' higher.**