

WARREN VALLEY BASIN WATERMASTER

FOR

HI DESERT WATER DISTRICT

VS.

YUCCA WATER COMPANY, LTD, ET AL

CASE NO. 172103 - COUNTY OF SAN BERNARDINO

ANNUAL REPORT

OF THE

WARREN VALLEY BASIN WATERMASTER

FOR THE PERIOD

OCTOBER 1, 2000 THROUGH SEPTEMBER 30, 2001

DECEMBER 1, 2001

JAMES C. HANSON

CONSULTING CIVIL ENGINEER

A CORPORATION

444 NORTH THIRD STREET, SUITE 400

SACRAMENTO, CA 95814

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HI-DESERT WATER DISTRICT
VS.
YUCCA WATER COMPANY, LTD. ET AL
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December 1, 2001

TO: Clerk of the San Bernardino Superior Court
Desert District, Department 4
14455 Civic Drive
Victorville, CA 92392

RE: Watermaster Report for Water Year 2000-01

Pursuant to the Judgment in the case of Hi-Desert Water District vs. Yucca Water Company, Ltd., and by Order of Judge Phillip Schaefer, February 10, 1992, submitted herewith is the Tenth Annual Report of the Warren Valley Basin Watermaster for Water Year 2000-01.

Watermaster findings are as follows:

- The total amount of water pumped from within the Warren Valley Basin during Water Year 2000-01 is reported to be 2,415 acre-feet, a 2% decrease from the 1999-2000 production of 2,470 acre-feet. Total water demand within the Warren Valley Basin increased by about 2% over the 1999-2000 level.
- Deliveries of State Water Project (SWP) to the Warren Valley Basin for spreading during 2000-01 totaled 3530 acre-feet. Adjusted for agreed upon losses of 2%, the amount accruing to the basin was 3,459 acre-feet. No water was credited to the Mojave Water Agency (MWA) storage account during 2000-01.
- In addition to SWP water, 751 acre-feet was supplied to the Hi-Desert Water District from the Means Valley Basin during Water Year 2000-01 accounting for 26 percent of the total water produced from the HDWD service area.
- Water levels in all three of the Hydrogeologic Units show an increase or remained relatively constant during 2000-01.

Clerk of the San Bernardino Superior Court
December 1, 2001
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The Warren Valley Basin Watermaster continued its program to monitor water production and water levels pursuant to the Judgement.

Respectfully submitted

WARREN VALLEY BASIN WATERMASTER

By: _____
Robert L. Armstrong, President

WARREN VALLEY BASIN WATERMASTER

FOR

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INTRODUCTION

Pursuant to the Judgment in the matter of Hi-Desert Water District vs. Yucca Water Company Ltd., Case Number 172103, San Bernardino, California, dated September 16, 1977, (Judgment) Hi-Desert Water District (HDWD) through its Board of Directors was appointed by the Court as Watermaster to administer the provisions of the Judgment. The Watermaster was directed to formulate a proposal for a physical solution to the continuing overdraft of the Warren Valley Basin. The Judgment did not specifically require annual reporting of water levels or water production information, but instead required only that a solution to the overdraft be developed. A solution was formulated and presented by Kennedy/Jenks/Chilton as the Warren Valley Basin Management Plan, dated January 31, 1991 which was adopted by the Watermaster on May 10, 1991. Subsequently, on February 10, 1992, Judge Phillip Schaefer of the West District for the County of San Bernardino Superior Court ordered the Warren Valley Basin Watermaster to report to the Court on an annual basis the water levels in the basin and any matters that might impact the safe yield of the basin.

In December 1997 the Watermaster petitioned the Court to modify its Order of February 10, 1992 which required the annual determination of the safe yield of the Warren Valley Basin, and instead to require that the Watermaster report to the Court annually on conditions affecting water supply, use and disposal and to implement a groundwater monitoring program for basin management. The Watermaster undertook this action because, in general, a safe yield determination is made for the purpose of allocating water resources among competing claims of right. In this case, HDWD is solely responsible for purchasing supplemental water. Securing supplemental supplies and monitoring water levels to insure that there is adequate water in storage to meet the demands of the basin is consistent with good water management practices and is a better use of available funds than preparing safe yield determinations. The Court subsequently approved the requested change.

COMPILATION AND ANALYSIS OF BASIC DATA

The Annual Report of the Warren Valley Basin Watermaster for the water year 1992-93 established that the hydrologic reporting period for the initial and subsequent reports would be on a water year basis (i.e. October 1 through September 30 of the following year). Presented herein are data pertaining to and the analysis of the following items of water supply and utilization for water year 2000-01:

- Precipitation
- Water Demand and Production
- Water Deliveries from Sources Located Outside the Warren Valley Basin
- Existing Water Levels and Trends

In preparation of this report, the Watermaster has considered information from various sources including the following:

- Records and data on file at the office of the HDWD
- Records and data on file at the office of the Mojave Water Agency (MWA)
- Records and data on file at the State Water Resources Control Board
- Climatological records from the Yucca Valley California Department of Forestry (CDF)

The water production and water level data is collected as part of the ongoing groundwater monitoring program administered by HDWD. The hydrographs included with this report were prepared for selected wells considered representative of the water level trends throughout the Warren Valley Basin.

Precipitation

The average precipitation recorded at the Yucca Valley California Department of Forestry (CDF) station for water years 1957-58 through 1992-93 was 6.77 inches. This amount represents the Base Period average against which subsequent seasonal precipitation amounts are compared. Precipitation during 2000-01, shown on Table 1, was 3.17 inches which is 47% of the thirty-six year Base Period average. Most of the precipitation occurred during the months of January through April. The maximum monthly precipitation of 1.43 inches occurred in February.

Figure 1 shows the seasonal precipitation from 1957-58 through 2000-01 and the accumulated departure from the 1957-58 through 1992-93 Base Period average.

TABLE 1

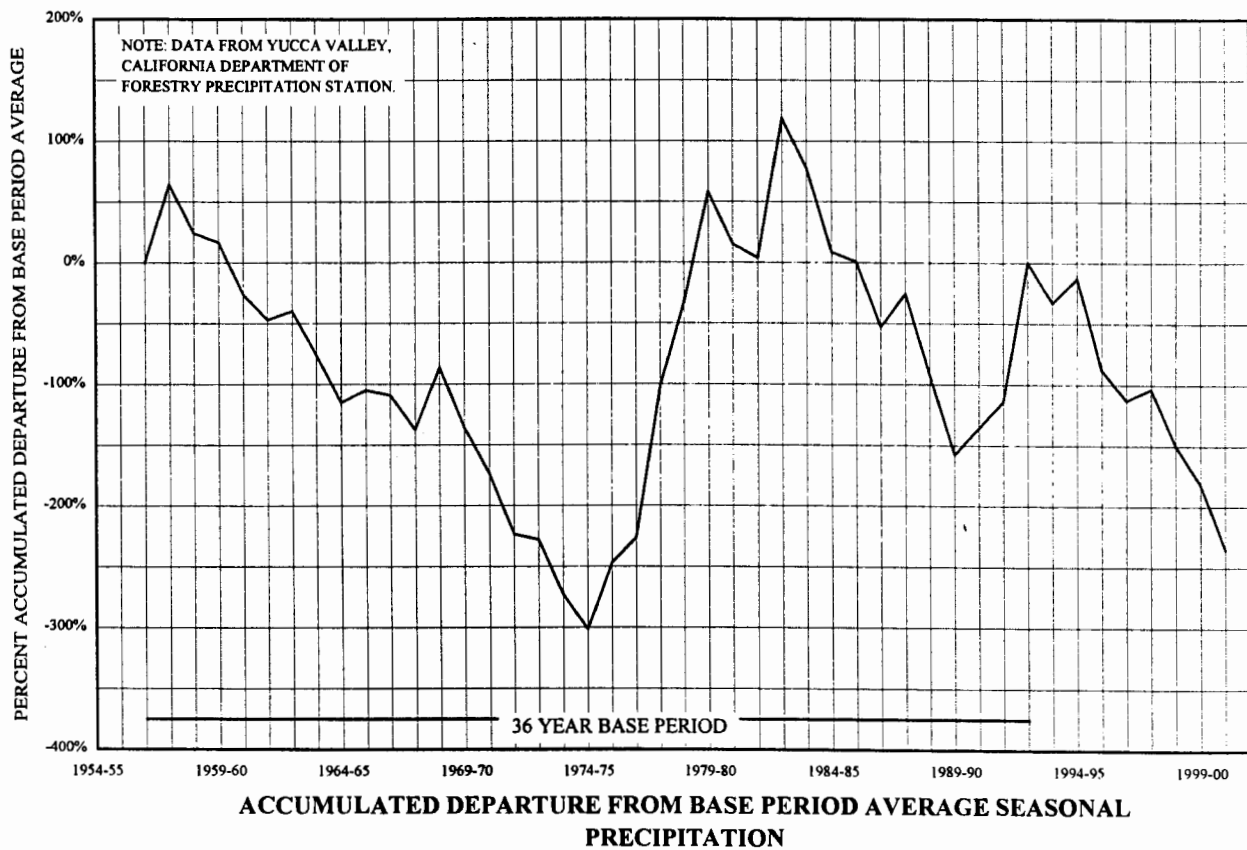
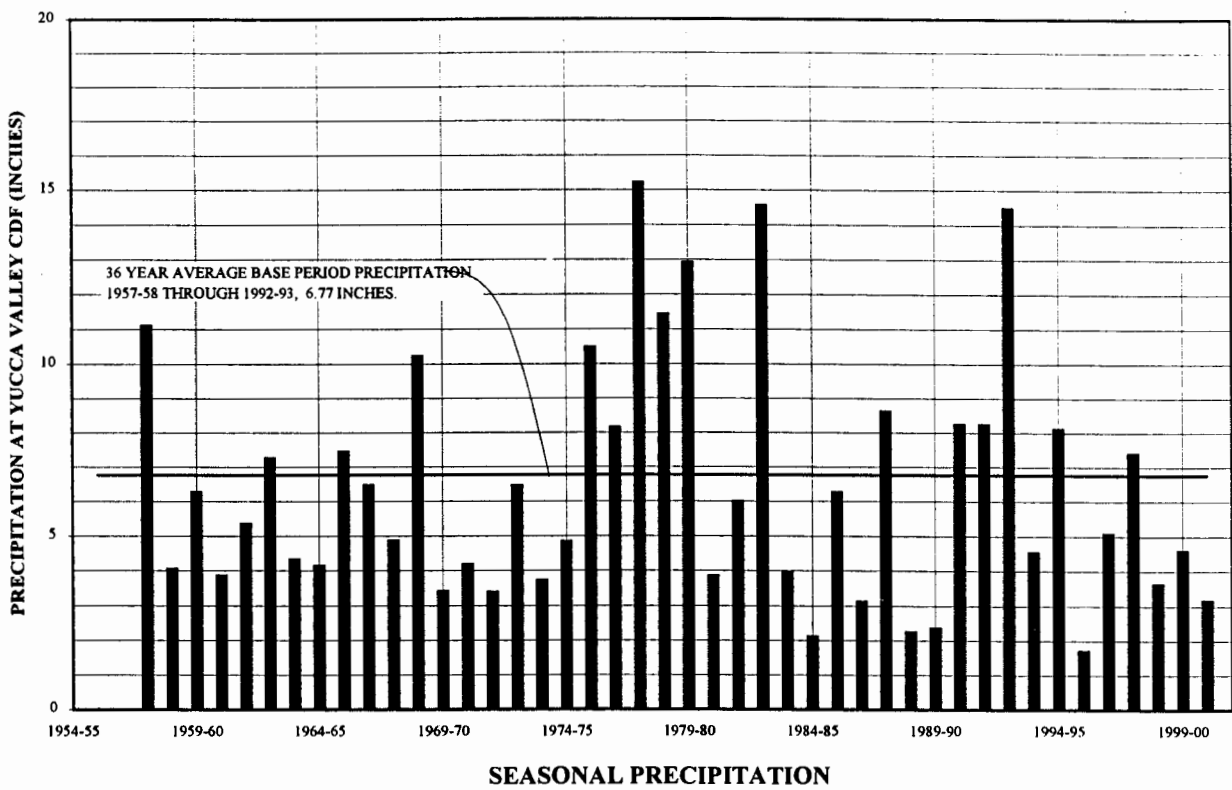
HI-DESERT WATER DISTRICT
PRECIPITATION AT YUCCA VALLEY CDF
 (INCHES)

WATER YEAR	TOTAL	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1957-58	11.11	1.19	0.22	0.69	0.54	2.59	2.64	2.61	0.14	0.06	0.20	0.09	0.14
58-59	4.06	0.32	0.32	0.00	0.87	2.10	0.00	0.04	0.00	0.00	0.13	0.02	0.26
1959-60	6.27	0.37	1.83	1.36	1.26	0.15	0.00	0.59	0.00	0.00	0.05	0.00	0.66
60-61	3.86	0.17	0.78	0.45	0.50	0.00	0.01	0.00	0.00	0.00	0.00	1.95	0.00
61-62	5.35	0.00	0.58	1.26	0.90	1.97	0.45	0.00	0.19	0.00	0.00	0.00	0.00
62-63	7.26	1.02	0.00	0.27	0.66	1.13	0.02	0.02	0.00	0.00	0.00	1.30	2.84
63-64	4.33	1.40	1.04	0.04	0.41	0.01	0.97	0.19	0.00	0.00	0.20	0.05	0.02
1964-65	4.14	0.00	1.22	0.00	0.03	0.00	0.94	1.54	0.02	0.00	0.22	0.17	0.00
65-66	7.45	0.00	4.00	2.56	0.16	0.34	0.29	0.00	0.00	0.00	0.01	0.00	0.09
66-67	6.47	0.78	0.52	2.23	0.48	0.00	0.00	1.02	0.00	0.00	0.00	0.38	1.06
67-68	4.87	0.00	0.86	1.50	0.10	0.03	1.30	0.34	0.00	0.00	0.74	0.00	0.00
68-69	10.23	0.00	0.00	0.00	3.50	3.96	0.00	0.00	1.50	0.00	1.27	0.00	0.00
1969-70	3.42	0.00	0.96	0.00	0.00	1.48	0.76	0.00	0.00	0.00	0.22	0.00	0.00
70-71	4.19	0.22	1.03	1.24	0.00	0.21	0.05	0.20	0.37	0.00	0.18	0.69	0.00
71-72	3.39	0.27	0.08	2.12	0.00	0.00	0.00	0.12	0.00	0.22	0.00	0.57	0.01
72-73	6.46	0.43	1.81	0.07	0.32	1.80	1.91	0.00	0.00	0.00	0.00	0.12	0.00
73-74	3.72	0.00	0.14	0.00	2.88	0.00	0.64	0.00	0.06	0.00	0.00	0.00	0.00
1974-75	4.84	1.00	0.25	0.95	0.00	0.28	0.82	0.78	0.00	0.00	0.00	0.00	0.76
75-76	10.49	0.07	0.13	0.00	0.00	3.52	2.13	0.13	0.06	0.00	0.00	0.12	4.33
76-77	8.15	0.00	0.21	0.00	1.74	0.00	0.37	0.01	1.22	0.11	0.12	4.33	0.04
77-78	15.21	0.00	0.00	1.68	5.55	2.28	4.95	0.44	0.16	0.00	0.00	0.00	0.15
78-79	11.44	0.17	1.90	1.06	2.22	1.18	2.49	0.00	0.00	0.00	1.53	0.79	0.10

TABLE 1

HI-DESERT WATER DISTRICT
PRECIPITATION AT YUCCA VALLEY CDF
 (INCHES)

WATER YEAR	TOTAL	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1979-80	12.92	0.10	0.00	0.01	3.91	5.91	1.85	0.18	0.70	0.11	0.15	0.00	0.00
80-81	3.85	0.33	0.00	0.00	1.11	0.48	1.51	0.00	0.24	0.00	0.00	0.00	0.18
81-82	6.00	0.00	0.47	0.00	0.23	1.47	1.52	0.55	1.21	0.00	0.00	0.35	0.20
82-83	14.56	0.00	1.42	2.67	1.60	2.50	1.25	0.16	0.00	0.00	0.00	4.27	0.69
83-84	3.95	0.79	0.02	0.59	0.00	0.00	0.00	0.00	0.00	0.00	1.36	0.33	0.86
1984-85	2.11	0.00	0.23	0.57	0.33	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.48
85-86	6.26	0.00	1.36	0.64	0.28	1.83	1.43	0.07	0.00	0.00	0.14	0.42	0.09
86-87	3.13	0.00	0.64	0.06	0.45	0.18	1.09	0.08	0.18	0.00	0.00	0.00	0.45
87-88	8.62	1.71	0.77	1.37	1.47	0.68	0.32	0.78	0.00	0.00	0.00	1.52	0.00
88-89	2.25	0.00	0.00	0.82	0.94	0.06	0.27	0.00	0.03	0.00	0.00	0.00	0.13
1989-90	2.36	0.02	0.00	0.37	0.44	0.93	0.13	0.20	0.00	0.00	0.00	0.27	0.00
90-91	8.24	0.01	0.00	0.03	0.00	2.75	4.53	0.00	0.00	0.00	0.79	0.00	0.13
91-92	8.24	0.00	0.00	0.90	0.40	3.65	2.34	0.33	0.32	0.00	0.05	0.25	0.00
92-93	14.48	0.46	0.00	2.05	6.27	5.61	0.08	0.00	0.00	0.01	0.00	0.00	0.00
93-94	4.54	0.02	0.31	0.15	0.18	2.41	0.87	0.27	0.02	0.00	0.00	0.31	0.00
1994-95	8.11	0.00	0.00	0.76	4.40	1.25	1.38	0.09	0.10	0.06	0.01	0.01	0.05
95-96	1.71	0.00	0.00	0.22	0.95	0.43	0.11	0.00	0.00	0.00	0.00	0.00	0.00
96-97	5.09	0.23	0.65	0.67	1.30	0.00	0.00	0.11	0.00	0.00	0.41	0.00	1.72
97-98	7.40	0.08	0.31	0.79	0.54	3.55	0.82	0.07	0.40	0.00	0.00	0.38	0.46
98-99	3.63	0.07	0.43	0.12	0.07	0.35	0.01	0.64	0.01	0.00	0.76	0.83	0.34
1999-00	4.59	0.00	0.00	0.00	0.00	2.03	1.93	0.23	0.00	0.00	0.00	0.18	0.22
2000-01	3.17	0.06	0.00	0.00	1.01	1.43	0.24	0.43	0.00	0.00	0.00	0.00	0.00



PRECIPITATION CHARACTERISTICS, WARREN VALLEY BASIN

FIGURE 1

Water Demand and Production

HDWD reported 8,655 active and inactive water service connections as of October 2001. This number reflects an increase of 226 connections during the 2000-01 water year. HDWD produced 2,101 acre-feet during 2000-01 from wells located within the Warren Valley Basin. The balance of the water supplied to HDWD was obtained from sources outside the Warren Valley Basin, specifically the Mainstream Well (#24E) and the Mesa Well (#10E). No water was taken from the Bighorn Desert View Intertie during Water Year 2000-01.

Total water production from HDWD wells and from wells owned by Blue Skies Country Club and the Institute of Mentalphysics is shown on Table 2. The production by Blue Skies Country Club and the Institute of Mentalphysics was estimated to be 300 acre-feet and 14 acre-feet respectively. There are no other significant groundwater producers within the Basin.

Water production from the major producing wells within the Warren Valley Basin decreased from 2,456 acre-feet during 1999-2000 to 2,401 acre-feet during 2000-01.

Water Deliveries from Sources Located Outside the Warren Valley Basin

During water year 2000-01, deliveries were made to the HDWD service area in the amount of 751 acre-feet from the Mainstream Well #24E and the Mesa Well #10E, both located in the Means Valley Basin.

During water year 2000-01, deliveries of State Water Project (SWP) water were made to HDWD via the Morongo Basin Pipeline in the amount of 3,530 acre-feet. Adjusted for agreed upon losses of 2%, the amount accruing to the basin was 3,459 acre-feet. There were no deliveries made to the MWA conjunctive use Storage Account leaving the prior balance of 443 acre-feet in the account .

Existing Water Levels and Trends

Hydrographs for key wells from each of the Hydrogeologic Units are shown on Figures 2 through 7. The location of these wells and the approximate limits of the Hydrogeologic Units are shown on Plate 1. The indicated static water levels in the key wells in the three hydrologic Units have risen since 1995-96.

Well #5E in Hydrogeologic Unit #3 shows an increase of about 55 feet from last years level. This is still about 15 feet below the 1998 level which is the highest level in this well since reporting began. Well #7E in Hydrogeologic Unit #2 remained constant with last years level which is about 95 feet below the 1998 level.

Well #9E also in Hydrogeologic Unit #2 shows a significant increase of about 110 feet from last years level. This is about 75 feet above the highest previous reading which occurred in 1997. Well #12E shows an increase of about 90 feet from the 1999 level.

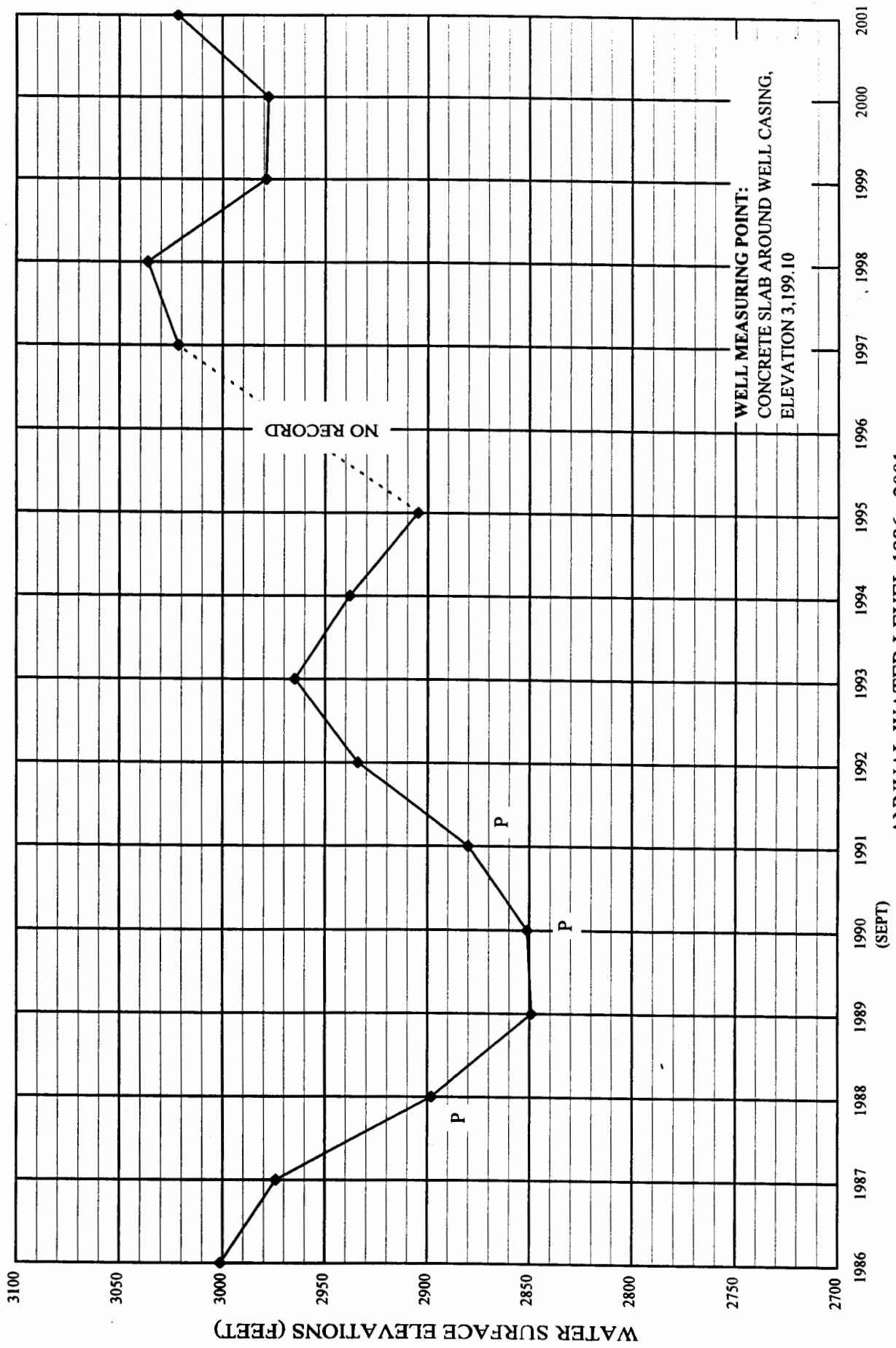
TABLE 2
HI-DESERT WATER DISTRICT
WATER PRODUCTION
(ALL AMOUNTS IN ACRE FEET)

	<u>1996-97</u>	<u>1997-98</u>	<u>1998-99</u>	<u>1999-2000</u>	<u>2000-01</u>
TOTAL PRODUCTION FROM WELLS LOCATED WITHIN THE WARREN VALLEY BASIN					
INSTITUTE OF MENTAL PHYSICS ¹	14	14	14	14	14
BLUE SKIES COUNTRY CLUB ²	394	323	312	228	300
HI-DESERT WATER DISTRICT ³	<u>2,140</u>	<u>1,669</u>	<u>1,875</u>	<u>2,228</u>	<u>2,101</u>
SUBTOTAL	2,548	2,006	2,201	2,470	2,415
TOTAL PRODUCTION FROM WELLS LOCATED OUTSIDE THE WARREN VALLEY BASIN					
MESA WELL #10E	2	7	1	26	45
BIGHORN DESERT VIEW INTERTIE	---	---	---	28	---
MAINSTREAM WELL #24E	<u>599</u>	<u>851</u>	<u>773</u>	<u>575</u>	<u>706</u>
SUBTOTAL	601	858	774	629	751
TOTAL ALL SOURCES	<u>3,149</u>	<u>2,864</u>	<u>2,975</u>	<u>3,099</u>	<u>3,166</u>

NOTES:

- ¹ Water production amounts for 1995-96, 1996-97 and 1997-98 were unavailable and have been estimated for purposes of this report.
- ² Water production by Blue Skies Country Club provided by Mr. Rusty Scott and Mr. Daniel Spicer. The 1997-98 amount was reported by Mr. Scott for the period July 1997 through June 1998. The 1998-99 amount was reported by Mr. Scott for the period July 1998 through August 1999. The 1999-2000 amount was reported by Mr. Scott for the period August 1999 through July 2000. The 2000-01 amount was reported by Mr. Spicer for the period August 2000 through September 2001.
- ³ Based on water production records maintained by Hi-Desert Water District.

WATER SURFACE ELEVATIONS WELL #5 EAST

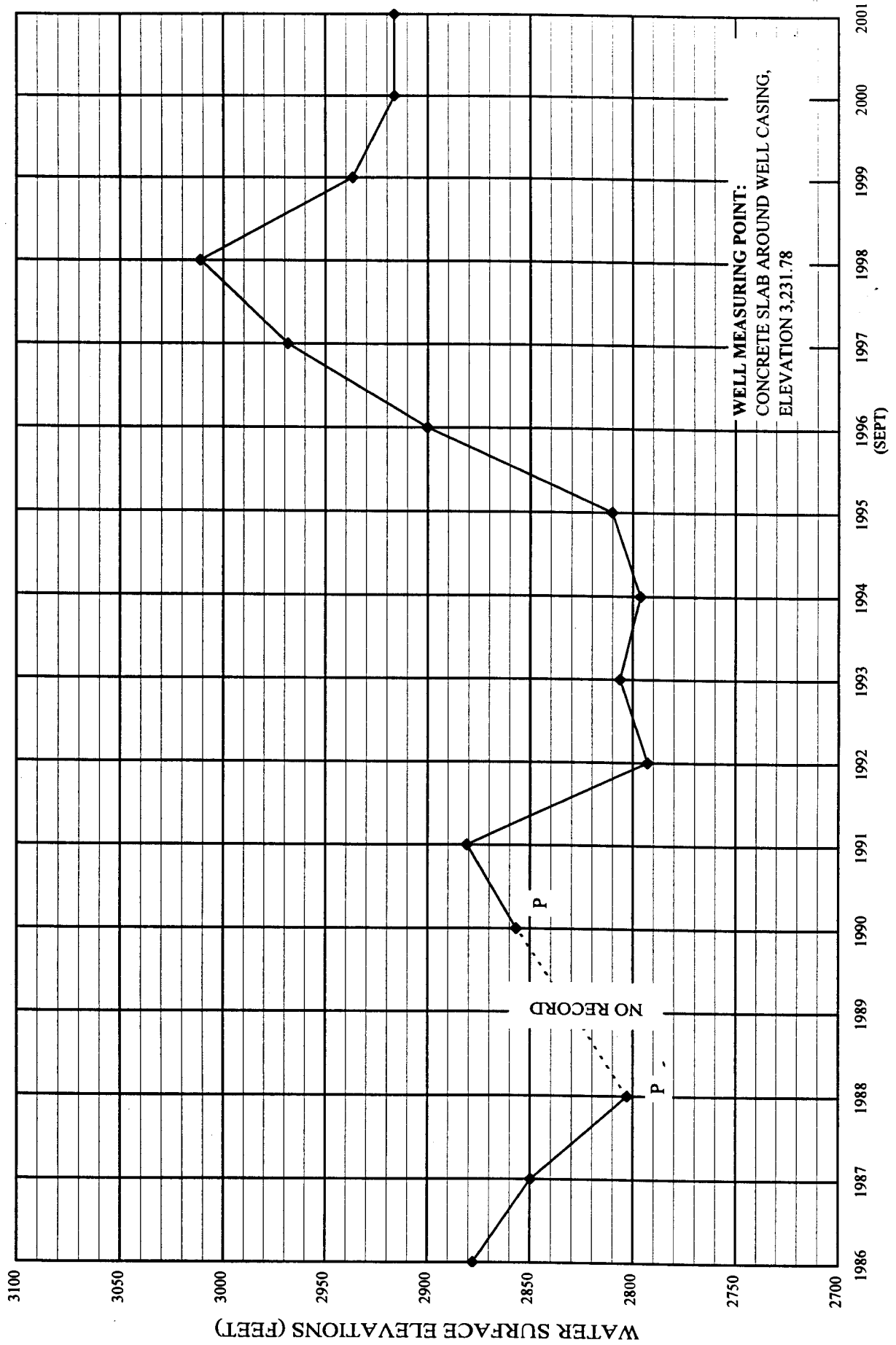


ANNUAL WATER LEVEL 1986 - 2001

Note 1: P indicates pumping water level. All other water levels are assumed to be static.
 Note 2: Water surface elevations reported for the month of October unless otherwise noted.

FIGURE 2

WATER SURFACE ELEVATIONS WELL #7 EAST

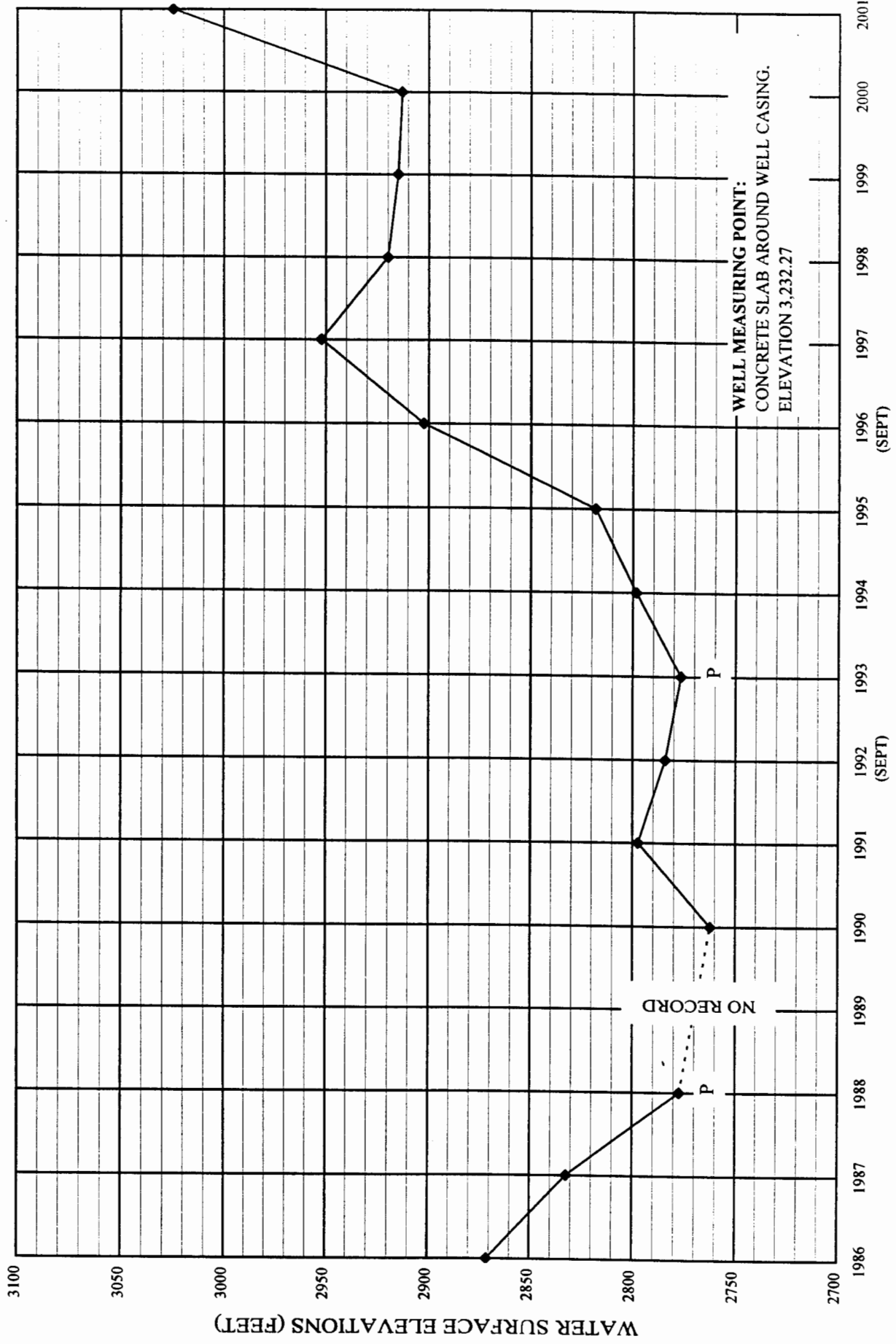


ANNUAL WATER LEVEL 1986 - 2001

Note 1: P indicates pumping water level. All other water levels are assumed to be static.
 Note 2: Water surface elevations reported for the month of October unless otherwise noted.

FIGURE 3

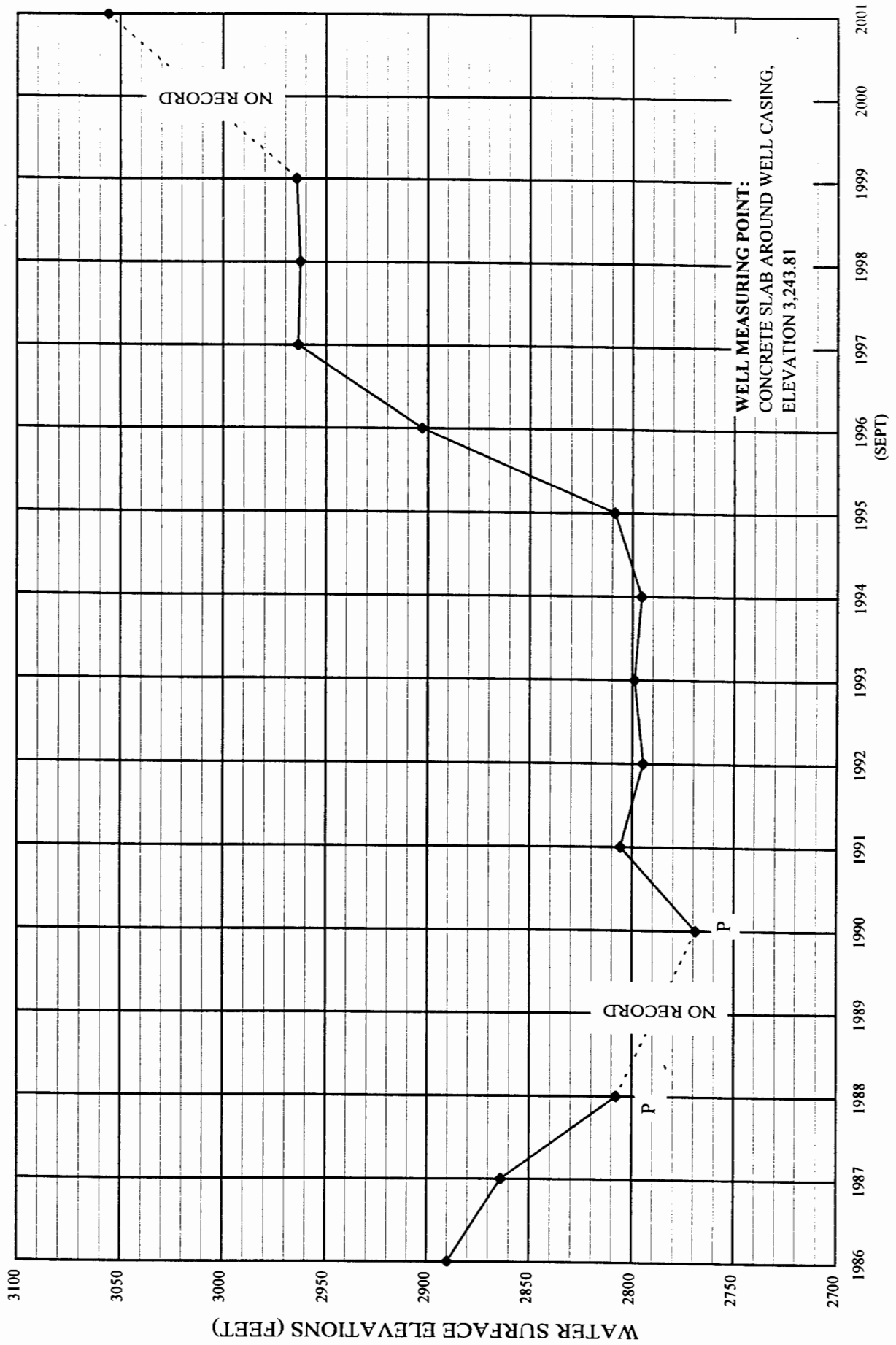
WATER SURFACE ELEVATIONS WELL #9 EAST



ANNUAL WATER LEVEL 1986 - 2001

Note 1: P indicates pumping water level. All other water levels are assumed to be static.
 Note 2: Water surface elevations reported for the month of October unless otherwise noted.

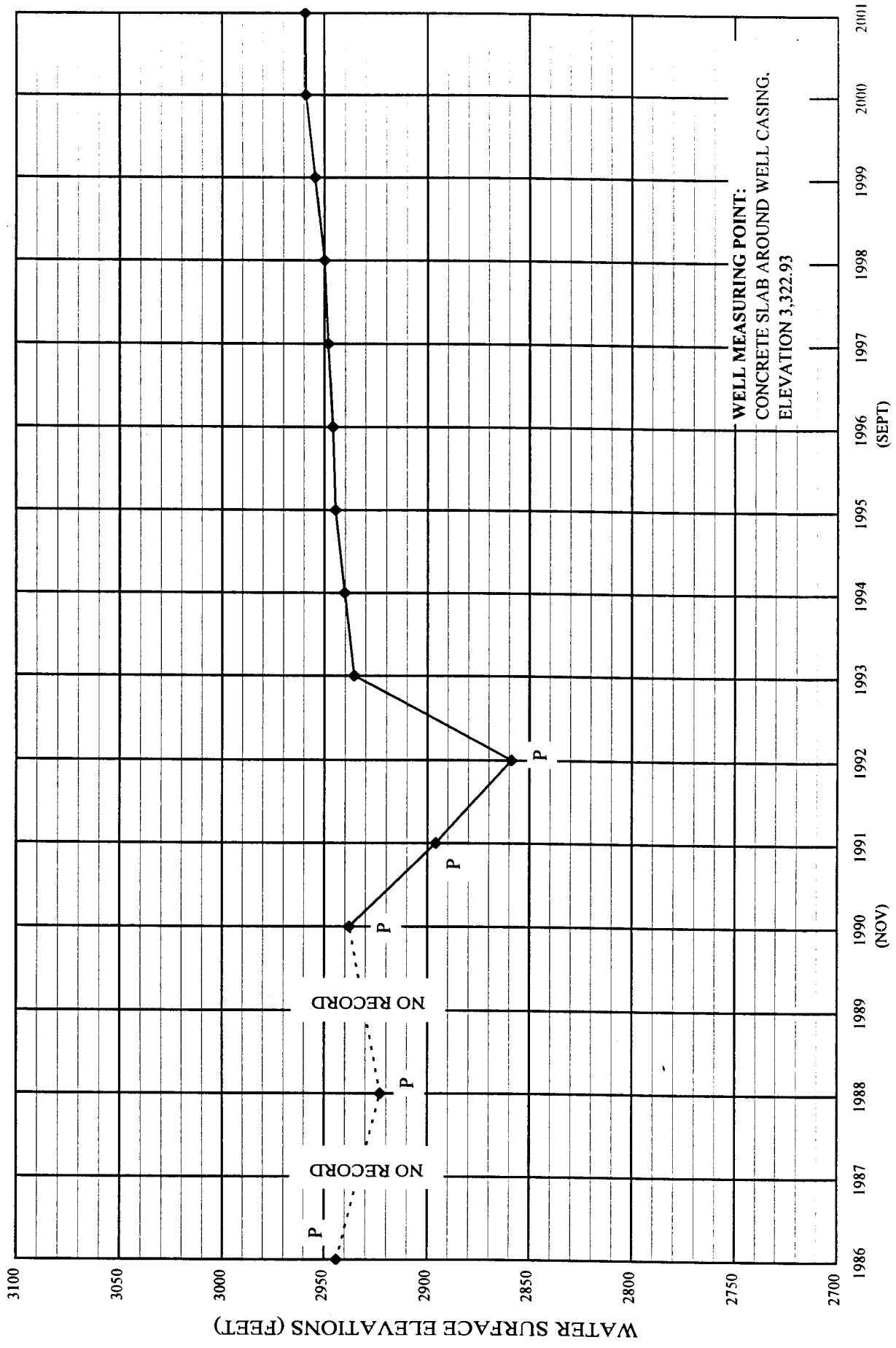
WATER SURFACE ELEVATIONS WELL #12 EAST



ANNUAL WATER LEVEL 1986 - 2001
(SEPT)

Note 1: P indicates pumping water level. All other water levels are assumed to be static.
 Note 2: Water surface elevations reported for the month of October unless otherwise noted.

WATER SURFACE ELEVATIONS WELL #5 WEST

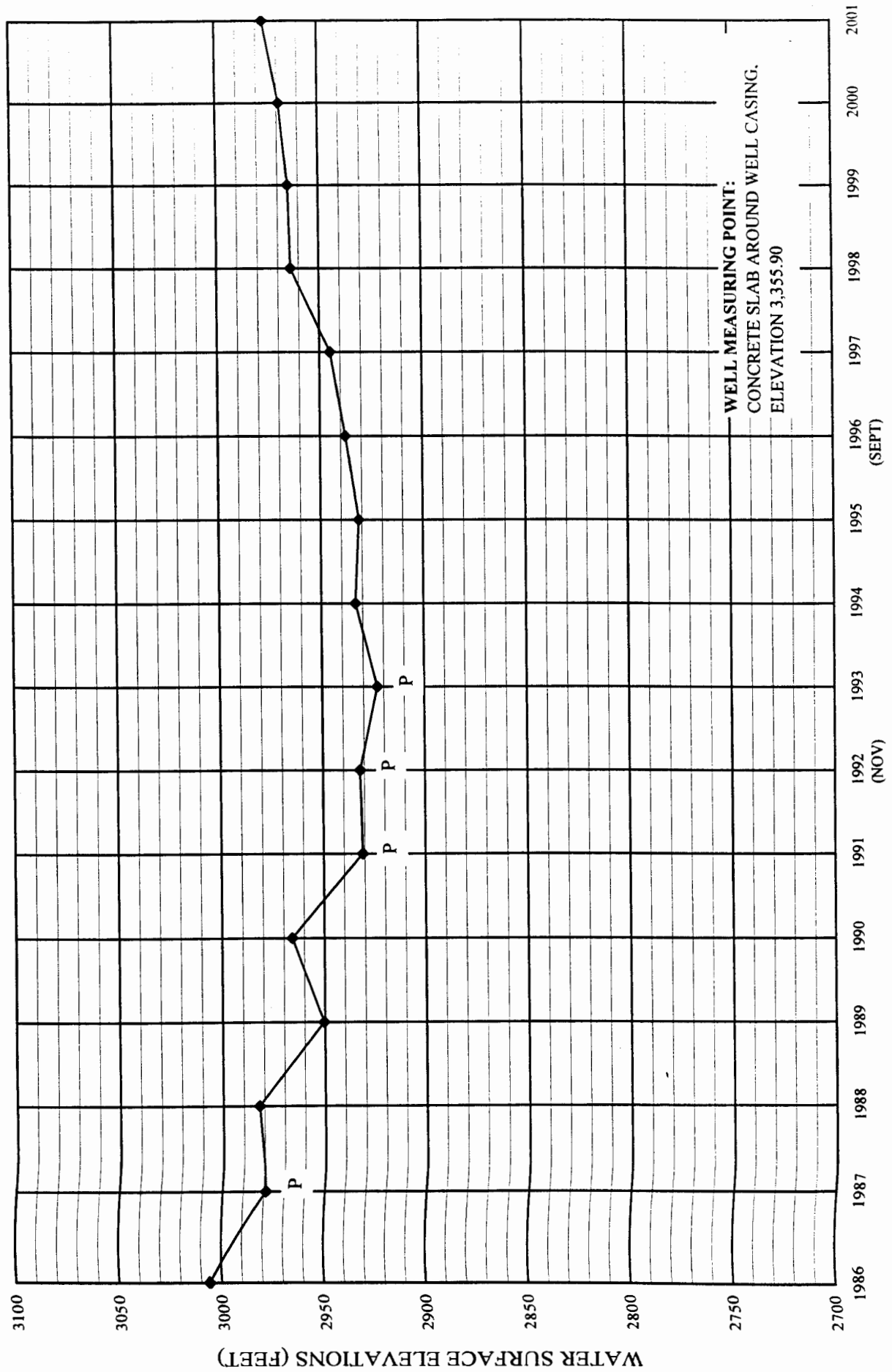


ANNUAL WATER LEVEL 1986 - 2001

Note 1: P indicates pumping water level. All other water levels are assumed to be static.
 Note 2: Water surface elevations reported for the month of October unless otherwise noted.

FIGURE 6

WATER SURFACE ELEVATIONS WELL #6 WEST



Note 1: P indicates pumping water level. All other water levels are assumed to be static.
 Note 2: Water surface elevations reported for the month of October unless otherwise noted.

FIGURE 7