

ROSWELL BASIN WATERMASTER

29th

ANNUAL REPORT

1994

GLENN W. BRIM, WATERMASTER  
1900 WEST SECOND STREET  
ROSWELL, NEW MEXICO 88201

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## INTRODUCTION

On January 10, 1966 Partial Judgment and Decree was entered under Cause No. 20294 and No. 22600 Consolidated in Chaves County, New Mexico. This Decree which adjudicated all ground water rights for irrigation, municipal, and industrial purposes in the Roswell Artesian Basin in Chaves and Eddy Counties, further provided for the metering of wells to commence January 1, 1967 and the establishment of a watermaster as follows:

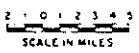
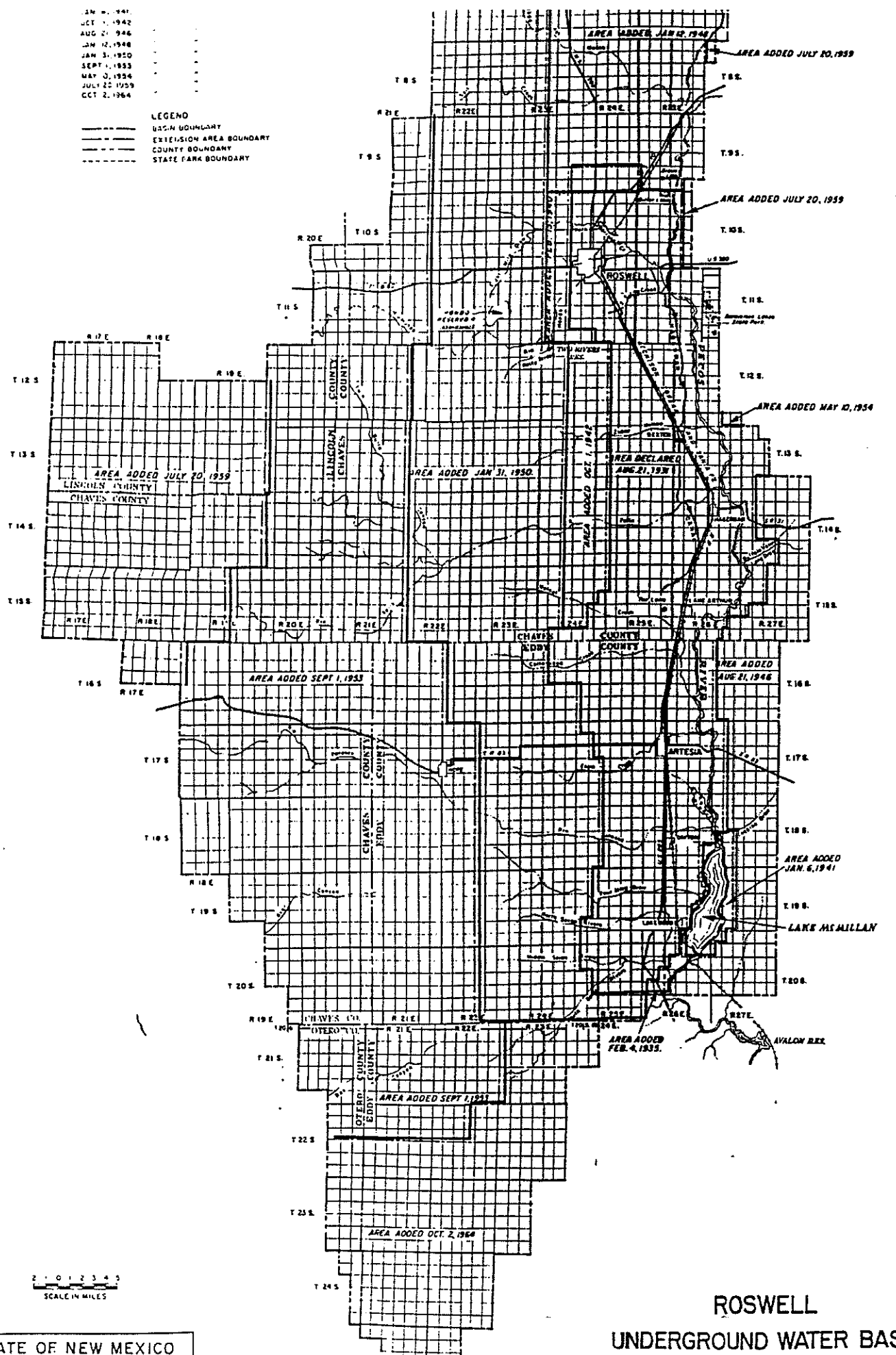
"5. The state engineer shall appoint and employ a watermaster and such assistants as are necessary in the administration and enforcement of this judgment and decree, provided that the appointment of the watermaster shall be subject to the approval of the Court. Such watermaster shall be appointed to commence work not later than July 1, 1966. The watermaster and any assistants appointed shall serve under the direction of the state engineer and under the general supervision of the Court."

The office was established with the appointment of a watermaster on February 2, 1966. Roswell Basin Watermaster Robert R. Marr passed away August 21, 1994. The Court appointed Glenn W. Brim, Interim Watermaster.

This is the 29th Annual Report of the Watermaster Office.

JAN. 1, 1941  
 OCT. 1, 1942  
 AUG. 21, 1946  
 JAN. 12, 1948  
 JAN. 31, 1950  
 SEPT. 1, 1953  
 MAY 10, 1954  
 JULY 20, 1959  
 OCT. 2, 1964

LEGEND  
 --- BASIN BOUNDARY  
 --- EXTENSION AREA BOUNDARY  
 --- COUNTY BOUNDARY  
 --- STATE PARK BOUNDARY



STATE OF NEW MEXICO  
 STATE ENGINEER OFFICE  
 S. E. REYNOLDS, STATE ENGINEER  
 ROSWELL ARTESIAN BASIN

ROSWELL  
 UNDERGROUND WATER BASIN

## GENERAL

The Roswell Basin Watermaster administers the diversion of water under the Adjudication Decree in an area extending, in general, six to eighteen miles west of the Pecos River and twenty miles north of Roswell in Chaves County to twenty miles south of Artesia, in Eddy County. A distance of approximately eighty miles. The principal use of water in the area is for agricultural purposes which accounts for about 92.6% of the total water diverted. Municipal use of water accounts for about 5.5% and the remainder is used for commercial and industrial purposes.

Ground water is the principal source of water diverted under the Decree and this is further divided into artesian and shallow ground water. Generally, a little less than two-thirds of the water is diverted from the artesian source, about one-third is diverted from the shallow source. A small portion is diverted from a combination of surface and well waters primarily through the Hagerman Canal.

Approximately, 130,000 acres of land were adjudicated irrigation rights under this Decree. The amount of acreage actually irrigated, however, varies from year to year as some rights have, under permit, been spread over larger acreages. Some rights have been transferred to municipal and industrial uses, while some rights have been retired by the Pecos Valley Artesian Conservancy District, and some acreage is fallow.

Procedures for accounting of water diverted under the Hagerman Canal were revised in January 1977. Rights under the Hagerman Canal not having a supplemental source from individually owned shallow or artesian wells are considered by this office to be adjudicated under the Hope Community Ditch Decree and not under Chaves County Cause No. 22600 and No. 20294 Consolidated. Thereafter, diversion of water for rights under the Hagerman Canal were accounted by the Roswell Basin Watermaster as follows:

- (1) Water diverted to farms having canal rights only will not be accounted
- (2) Water diverted to farms having an underground right adjudicated or permitted to supplement the entire canal right shall be accounted as other adjudicated ground water rights with appropriate provisions for 5-year accounting, carriage loss and carryover.
- (3) Water diverted to farms having a combined or comingled right (either as decreed or permitted) where part of the canal right is not supplemented by ground water shall be accounted by considering the canal water diverted to be in direct proportion to the ratio of the unsupplemented canal right and only the supplemented right shall be accounted unless otherwise indicated by conditions of approval of an individual permit.

The Honorable Judge Harl Byrd served during the 1994 reporting period. Personnel of the watermaster office at the beginning of the 1994 season consisted of Robert R. Marr, Watermaster; Rita Valdez, Secretary-Clerk, and David Thomas, Assistant Roswell Basin Watermaster.

On April 4, 1994, Ramon L. Torres and Phillip Fields transferred from the Water Rights Division to the Watermaster Office to assist during the irrigation season.

On December 31, 1994 Phillip Fields transferred from the watermaster's office back to the Water Rights Division.

The operations of the Watermaster office are financed through the Pecos Valley Artesian Conservancy District. Under the terms of the Adjudication Decree the state engineer annually submits to PVACD a budget for the operations of the watermaster office and the PVACD Board then moves the Court to approve or modify the budget submitted. PVACD then reimburses the state engineer for monthly expenses incurred. The funds of PVACD are derived from a levy of lands within the district.

METERING PROGRAM

Four hundred and eighty one meters were found inoperative during the 1994 irrigation season. Based on a total of 1572 meters installed on irrigation, feed pen, dairy, and Hagerman Canal wells, this is 30.6% as compared to 43.8% found inoperative in 1993. Each meter was read an average of 9.0 times, including the beginning and year end readings.

The number of totalizing meters, by brand installed on these wells and the number of each brand found to be inoperative during the 1994 irrigation season, are listed as follows:

Make of Meter	Total	% of Total	Total Inoper.	Make Inoper.	% of Total Installed
Brand A	68.00	4.33	21.00	30.88	1.34
Brand B	1,414.00	89.95	448.00	31.68	28.50
Brand C	74.00	4.71	12.00	16.22	0.76
Brand D	16.00	1.02	0.00	0.00	0.00
Totals	1,572.00	100.00	481.00		30.60

Adjustments in amounts of water diverted through inoperative meters for 1994 totaled 6,934.2 acre-feet of which 4,530.6 acre-feet was artesian and 2,403.6 diverted for irrigation use.



The problem remains of having a large percentage of the water meters inoperative at the onset of spring pumping.

Meters are being maintained, repaired and/or replaced by field personnel of the PVACD at no cost to the water user.

CHANGES IN THE ADJUDICATION DECREE

There were no changes in the Adjudication Decree during the 1994 water year.

VIOLATIONS ACTIONS

There was one instance of overuse in 1994

## USE OF WATER IN THE ROSWELL BASIN IN 1994

The total water diverted in the Roswell Ground Water Basin for the water year 1994 (November 1, 1993 - October 31, 1994) under the administrative jurisdiction of the Roswell Basin Watermaster, was 380,220.3 acre-feet. Under the decree adjudicating water rights in the basin, discrete five-year periods were set-up for accounting of the metered water. The third year of the sixth five-year period was 1994.

Of the total diversion, 257,570.0 acre-feet (67.7%) was from the artesian source, 112,060 acre-feet (29.5%) was from the shallow source and 10,589.9 acre-feet (2.8%) was diverted from combined underground and surface sources primarily under the Hagerman Canal and the Rio Hondo.

Irrigation use accounted for 92.6% of the total diverted, municipal type use accounted for 5.5% and miscellaneous, industrial and commercial uses accounted for the remaining 1.9%.

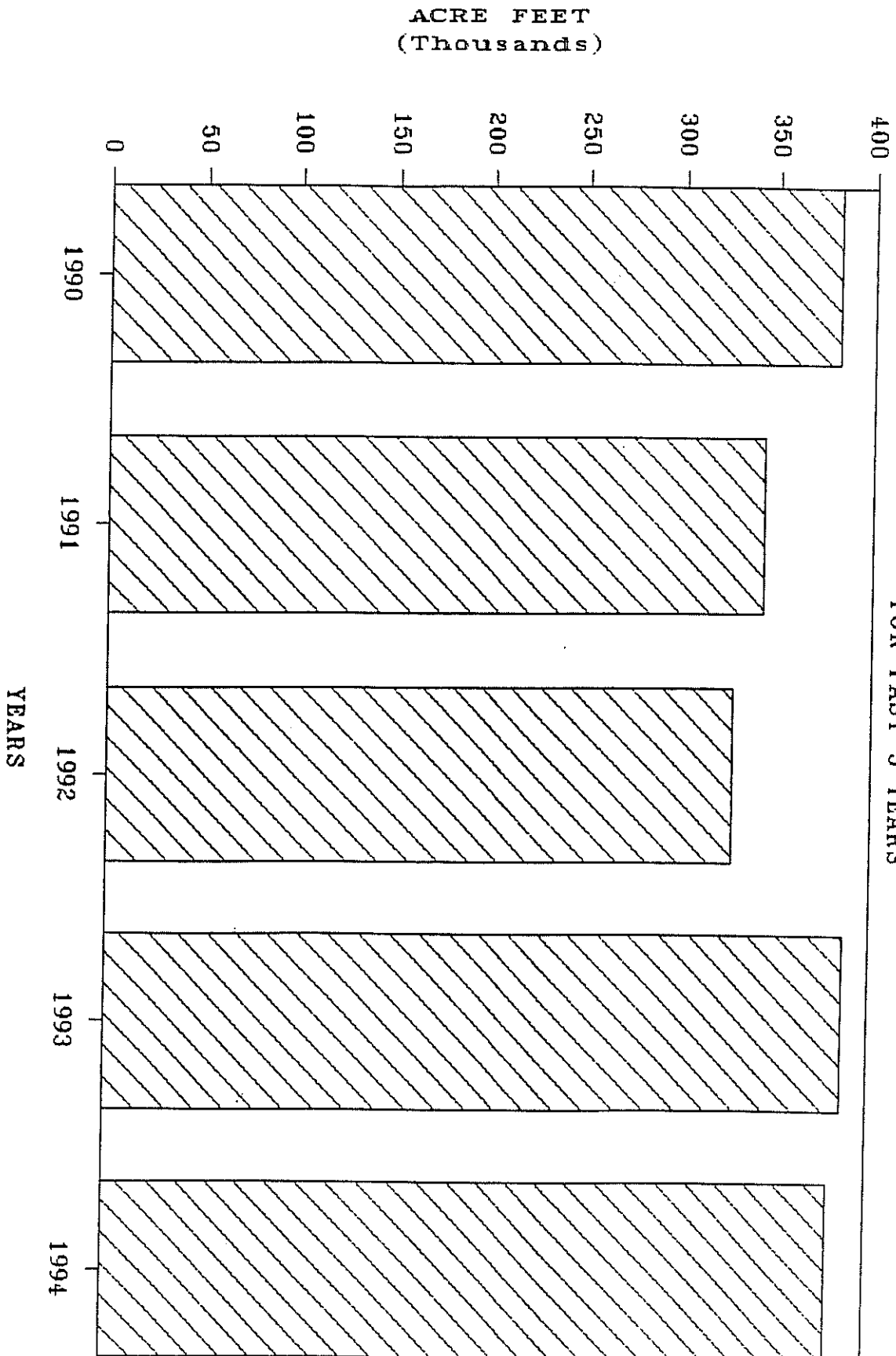
The irrigation use on 114,604.2 equivalent water right acres (acres as originally adjudicated) permitted an average diversion of 3.07 acre-feet per acre for the basin as a whole varying from a high of 3.43 acre-feet per acre in the Artesia area to a low of 1.11 acre-feet per acre in the Upper Rio Felix. The equivalent acreage figures and pumpage figures do not include unmetered stock and domestic uses of water right acreage retired from irrigation under the program of the Pecos Valley Artesian Conservancy District. There are eight hundred and seventy eight farming units.

ROSWELL BASIN WATERMASTER  
TABULATION OF ANNUAL WATER DIVERTED

1967--1994

YEAR	IRRIGATION ACRE-FEET	IRRIGATION EQ. AC.	ACRE-FEET PER ACRE	MUNICIPAL ACRE-FEET	INDL./COML. ACRE-FEET	TOTAL ACRE-FEET
1967	371,250.60	130,132.70	2.85	14,528.30	1,582.60	387,361.50
1968	323,917.10	128,245.00	2.53	13,596.30	1,611.10	339,124.50
1969	345,087.10	128,330.60	2.69	15,586.90	899.10	361,573.10
1970	358,686.80	126,002.40	2.85	15,888.50	916.30	375,491.60
1971	384,228.10	126,121.00	3.05	16,439.60	3,082.00	403,749.70
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5-YEAR AVG.	356,633.94	127,766.34	2.79	15,207.92	1,618.22	373,460.08
1972	367,363.60	125,233.80	2.93	14,821.20	2,398.90	384,583.70
1973	386,288.80	125,293.00	3.08	15,335.00	2,983.00	404,606.80
1974	392,413.30	124,240.10	3.16	18,318.50	3,646.30	414,378.10
1975	368,512.60	123,740.70	2.98	16,145.90	3,083.90	387,742.40
1976	419,491.90	123,170.10	3.41	18,182.20	3,271.90	440,946.00
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5-YEAR AVG.	386,814.04	124,335.54	3.11	16,560.56	3,076.80	406,451.40
1977	387,858.00	122,703.70	3.16	18,422.70	3,071.40	409,352.10
1978	359,011.00	122,233.70	2.94	15,569.70	3,270.70	377,851.40
1979	355,163.80	122,002.40	2.91	16,181.90	2,853.00	374,198.70
1980	360,484.40	121,763.30	2.96	17,804.30	2,388.60	380,677.30
1981	317,225.20	121,530.00	2.61	14,558.10	2,340.80	334,124.10
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5-YEAR AVG.	355,948.48	122,046.62	2.92	16,507.34	2,784.90	375,240.72
1982	377,179.40	120,932.00	3.12	18,292.10	2,747.20	398,218.70
1983	356,836.00	120,277.70	2.97	19,312.30	2,818.30	378,966.60
1984	304,691.90	119,415.20	2.55	19,246.40	2,424.10	326,362.40
1985	293,465.10	119,333.30	2.46	17,494.40	2,863.70	313,823.20
1986	259,739.90	118,634.10	2.19	17,800.60	2,673.00	280,213.50
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AVG.	318,382.46	119,718.46	2.66	18,429.16	2,705.26	339,516.88
1987	285,389.60	118,324.90	2.41	15,775.50	2,892.50	304,057.60
1988	306,838.70	115,696.10	2.65	16,734.60	4,887.40	328,460.70
1989	364,436.70	115,088.00	3.17	17,771.40	4,566.50	386,774.60
1990	356,612.10	115,433.00	3.09	20,569.60	4,733.20	381,914.90
1991	314,893.30	115,378.30	2.73	18,887.10	9,768.90	343,549.30
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5-YEAR AVG.	325,634.08	115,984.06	2.81	17,947.64	5,369.70	348,951.42
1992	305,168.40	115,510.40	2.64	17,765.70	4,389.80	327,323.90
1993	356,286.10	115,456.10	3.09	23,841.70	6,215.90	386,343.70
1994	352,106.70	114,402.90	3.08	21,024.60	7,060.00	380,220.00

# ACRE FEET COMPARISON FOR PAST 5 YEARS



SUMMARY SHEET  
1994

PUMPAGE IN ACRE FEET

MUNICIPAL & MUNICIPAL TYPE USE	SHALLOW	ARTESIAN	TOTAL	REMARKS
ROSWELL		12,913.20	12,913.20	
DEXTER	567.90	434.70	1,002.60	
HAGERMAN		493.10	493.10	
LAKE ARTHUR	8.30	47.70	56.00	
ARTESIA		3,972.10	3,972.10	
HOPE		55.60	55.60	
CO OPS		2,341.90	2,341.90	
DOMESTIC UTILITIES	48.80	141.30	190.10	
<b>TOTALS</b>	<b>625.00</b>	<b>20,399.60</b>	<b>21,024.60</b>	
FEED PEN OPERATIONS (M.F.C.)	55.60		55.60	Not Farm Connected
FEED PEN OPERATIONS (F.C.)	300.50		300.50	Farm Connected
DAIRIES (F.C.)**	7,462.70	22,943.80	30,406.50	**Included in IRR. Total
DAIRIES (M.F.C.)	1,038.30	1,586.30	2,624.60	Not Included in IRR. Total
SCHOOL SYSTEMS	8.00	183.30	191.30	DEXTER & ROSWELL
<b>TOTALS</b>	<b>1,402.40</b>	<b>1,769.60</b>	<b>3,172.00</b>	
<b>MISC. INDUSTRIAL &amp; COMMERCIAL</b>				
*****				
CHAVES COUNTY	2,072.70	177.00	2,249.70	
EDDY COUNTY	20.00	1,618.30	1,638.30	
<b>TOTALS</b>	<b>2,092.70</b>	<b>1,795.30</b>	<b>3,888.00</b>	
<b>TOTAL ALL MUNICIPAL &amp; COMMERCIAL &amp; INDUSTRIAL</b>				
	4,120.10	23,964.50	28,084.60	** EXCLUDES FARM CONNECTED DAIRY

1994 METERED USE  
(IRRIGATION)

NORTHERN EXTENSION

20,327.9 AC.FT.  
2.06 AC.FT./AC

ROSWELL  
EAST GRAND PLAINS

104,475.0 AC.FT.  
3.08 AC.FT./AC

DEXTER-HAGERMAN

90,476.5 AC.FT.  
2.92 AC.FT./AC

UPPER FELIX  
843.7 AC.FT.  
1.11 AC.FT./AC

COTTONWOOD

64,305.8 AC.FT.  
3.26 AC.FT./AC

ARTESIA

57,544.0 AC.FT.  
3.43 AC.FT./AC

LAKWOOD  
SEVEN RIVERS

7,822.4 AC.FT.  
3.17 AC.FT./AC

BASIN WIDE

352,106.7 AC.FT.  
3.08 AC.FT./AC



SUMMARY SHEET  
 1994  
 AREA BREAKDOWN  
 PUMPAGE -- IN ACRE FEET

DESCRIPTION	ACRE-FEET	SURF	SHALLOW	ARTESIAN	TOTAL	A/R
NORTHERN EXTENSION	29,536.45		507.10	19,820.80	20,327.90	2.06
ROSWELL EAST GRAND PLAINS	101,609.29		26,073.50	78,401.50	104,475.00	3.08
DEXTER-HAGERMAN	92,892.24	4,278.50	38,111.80	48,086.20	90,476.50	2.92
NON SUPPLEMENTAL CANAL USE		6,311.40			6,311.40	
COTTONWOOD AREA	59,195.69	0.00	18,936.70	45,369.10	64,305.80	3.26
UPPER RIO FELIX	2,281.00	0.00	0.00	843.70	843.70	1.11
ARTESIA AREA	50,297.70	0.00	20,473.90	37,070.10	57,544.00	3.43
LAKWOOD-SEVEN RIVERS	7,396.20	0.00	3,837.00	3,985.40	7,822.40	3.17
<b>TOTAL ALL BREAKDOWN AREAS</b>	<b>343,208.57</b>	<b>10,589.90</b>	<b>107,940.00</b>	<b>233,576.80</b>	<b>352,106.70</b>	<b>3.08</b>

ROSWELL BASIN WATER MASTER

FY95 BUDGET

JULY 1, 1994 THROUGH JUNE 30, 1995

SALARIES:	101,020.00
BENEFITS:	31,286.00
GAS & OIL	3,500.00
VEHICLE MAINT. & REPAIRS:	2,500.00
SUPPLIES:	250.00
POSTAGE:	750.00
RENT & UTILITIES:	9,654.00
COPIER & POSTAGE MACHINE:	450.00
TELEPHONE:	1,500.00
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TOTAL BUDGET	150,910.00

It is anticipated that object codes will vary, but that the total should not exceed \$150,910.0 for Fiscal Year 95.

ROSWELL BASIN WATER MASTER

Expenditures for Calendar Year 1994

Expenditure Type	Jan-June (Fiscal Year 94)	July-Dec (Fiscal Year 94)
Salaries	36,762.41	35,305.46
Benefits	11,540.29	11,237.15
Gas & Oil	1,179.40	2,062.59
Maintenance & Repairs	919.42	1,267.86
Supplies	183.05	0.00
Postage	488.30	598.63
Rent & Utilities	6,232.86	7,169.27
Rent-Copier & Postage Machine	268.92	167.97
Telephone	691.85	486.16
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TOTAL	58,266.50	58,295.09

## SUMMARY

Metered use of water during 1994 resulted in an average use, for Irrigation purposes, of 3.08 acre-feet per water right acre. The total quantity diverted for all uses was the ninth highest since metering began in 1967.

Inoperative meters continued to present some problems, however, under the present system of making adjustments essentially all of the water diverted through inoperative meters is accounted for. The program of checking and rating meters with the present staff seems to be working satisfactorily.