

ROSWELL BASIN WATERMASTER

18th

ANNUAL REPORT

1983

Glenn W. Brim, Watermaster

909 East Second Street

Roswell, New Mexico

TABLE OF CONTENTS

| | |
|--|----|
| INTRODUCTION..... | 1 |
| MAP of ROSWELL UNDERGROUND BASIN..... | 2 |
| ADMINISTRATION | |
| General..... | 3 |
| Metering Program..... | 6 |
| Changes in the Adjudication Decree..... | 8 |
| Violations..... | 9 |
| WATER DIVERSION | |
| Use of Water in the Roswell Basin in 1983..... | 10 |
| Tabulations of Annual Diversions 1967 thru 1983..... | 12 |
| Summary of Annual Diversions..... | 13 |
| Map Indicating Areas of Irrigation Use..... | 15 |
| FINANCIAL STATEMENTS | |
| Approved Budget July, 1983-June 30, 1984..... | 16 |
| Actual Expenditures January 1,-June 30, 1983..... | 17 |
| Actual Expenditures July 1,-Dec. 31, 1983..... | 18 |
| Summary..... | 19 |

Introduction

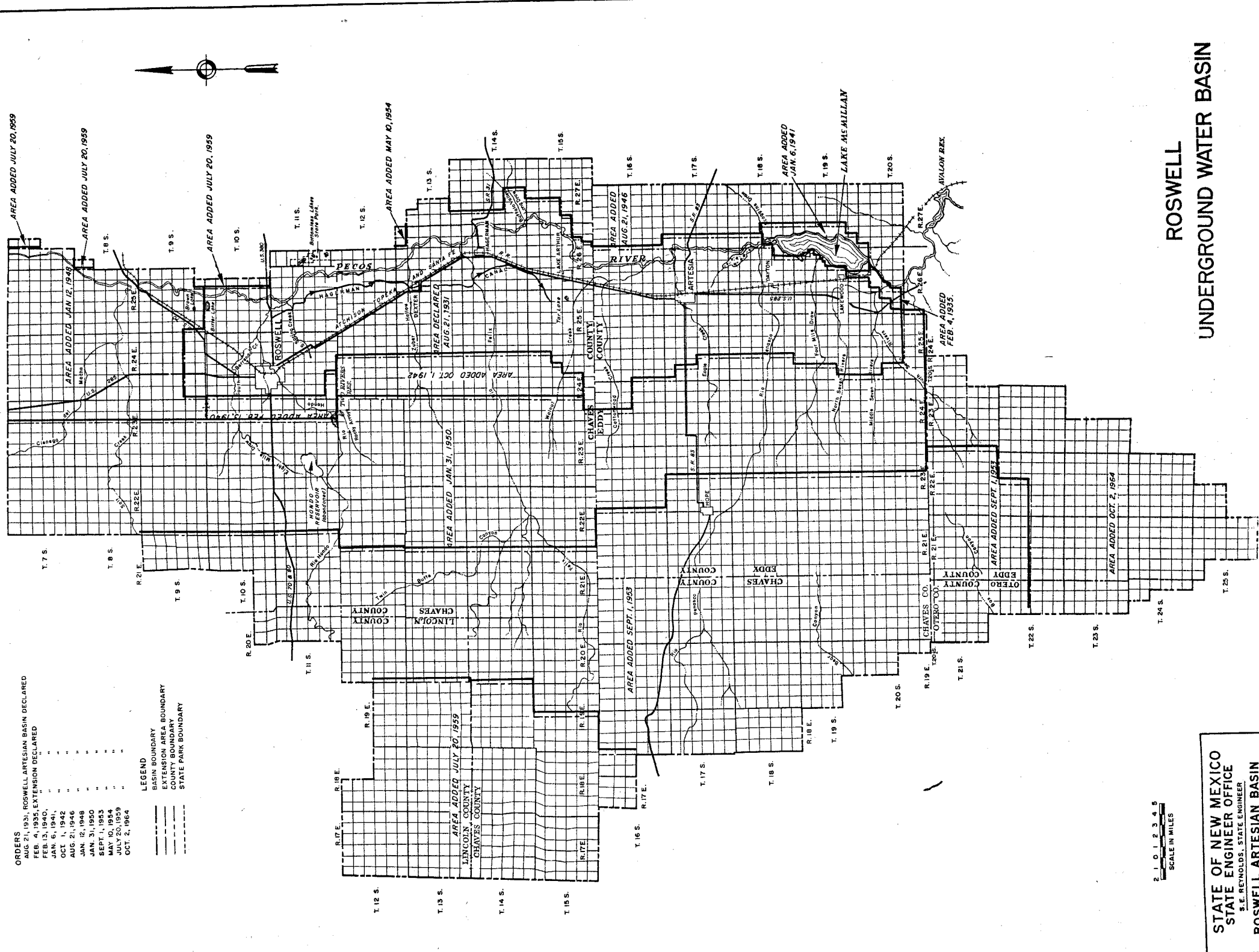
On January 10, 1966, Partial Judgment and Decree was entered under Causes Nos. 20294 and 22600 Consolidated in Chaves County, New Mexico. This Decree, which adjudicated all ground water rights for irrigation, municipal, and industrial purposes in the Roswell Artesian Basin in Chaves and Eddy Counties, 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. The present Watermaster, Glenn W. Brim, was appointed by State Engineer, S. E. Reynolds, on January 31, 1969.

This is the 18th Annual Report of the Watermaster Office.

ROSWELL UNDERGROUND WATER BASIN



- ORDERS**
- AUG. 21, 1931, ROSWELL ARTESIAN BASIN DECLARED
 - FEB. 4, 1935, EXTENSION DECLARED
 - FEB. 13, 1940, " " " " " "
 - OCT. 6, 1942, " " " " " "
 - AUG. 21, 1946, " " " " " "
 - JAN. 2, 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

2 1 0 1 8 3 4 5
SCALE IN MILES

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

DATE OCT. 2, 1964
TRACED M. H. BOYCE
APPROVED

SHEET NO.
FILE NO.

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 from twenty miles north of Roswell in Chaves County to twenty miles south of Artesia, in Eddy County, a distance of about eighty miles. The principal use of water in the area is for agricultural purposes which accounts for about 95% of the total diverted. Municipal use accounts for less than 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 and 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 the Decree. The amount of acreage actually irrigated, however, varies from year to year as some rights have, under permit, been spread over larger acreages, a few rights have been "stacked" to permit larger diversions on reduced acreages, some rights have been transferred to municipal and industrial uses, some rights have been retired by the Pecos Valley Artesian Conservancy District, and some acreage is fallowed.

Procedures for accounting of water diverted under the Hagerman Canal were revised in January of 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 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 commingled 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 Lafel Oman, retired State Supreme Court Chief Justice, sitting by designation as judge in the adjudication suit, served during the 1983 reporting period.

Personnel of the watermaster office at the beginning of the 1983 season consisted of Glenn W. Brim, watermaster; Rita Valdez, secretary-clerk; and Robert Marr, as an assistant to the watermaster.

On April 4, 1982, Ramon Torres and Mary Nunez were transferred from the water rights division to the watermaster's office to assist during the irrigation season. Ramon Torres and Mary Nunez transferred to the water rights division on October 3, 1983.

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 the Pecos Valley Artesian Conservancy District a budget for the operations of the watermaster office and the District Board then moves the Court to approve or modify the budget submitted. The District then reimburses the State Engineer for monthly expenses incurred. The funds of the Conservancy District are derived from a levy of lands within the District.

METERING PROGRAM

Five hundred and fifty seven meters were found inoperative during the 1983 irrigation season. Based on a total of 1611 meters installed on irrigation, feed pen, dairy, and Hagerman Canal wells, this is 34.58 % as compared to 33.06 % found inoperative in 1982. Each meter was read an average of 10.6 times, including the beginning and year ending readings.

The number of totalizing meters, by brand, installed on these wells and the number of each brand found to be inoperative during the 1983 irrigation season, are listed as follows:

| Make of Meter | Total | % of Total | Total Inoperative | Make % Inoperative | % of Total Installed |
|---------------|-----------|-------------|-------------------|--------------------|----------------------|
| Brand A | 54 | 3.35 | 20 | 37.04 | 1.24 |
| Brand B | 1044 | 64.80 | 345 | 33.05 | 21.42 |
| Brand C | 384 | 23.84 | 145 | 37.76 | 9.00 |
| Brand D | 93 | 5.77 | 32 | 34.41 | 1.99 |
| Misc. | <u>36</u> | <u>2.24</u> | <u>15</u> | 41.67 | <u>0.93</u> |
| | 1611 | 100.0 | 557 | | 34.58 |

Adjustments in amounts of water diverted through inoperative meters for 1983 totaled 7031.5 acre-feet; 3654.8 acre-feet of which was artesian and 3376.7 acre-feet of which was shallow. The total adjustment is 1.97 % of the total diverted for irrigation use.

The problem remains of having a large percentage of the water meters

inoperative at the onset of spring pumping. It is believed that the maintenance program initiated by the Pecos Valley Artesian Conservancy District will alleviate most of this problem.

Meters are being maintained, repaired and/or replaced by field personnel of the Pecos Valley Artesian Conservancy District, at no cost to the water user.

CHANGES IN THE ADJUDICATION DECREE

There were no changes in the Adjudication Decree during the 1983 water year.

VIOLATION ACTIONS

There were no violations requiring court action in 1983.

USE OF WATER IN THE ROSWELL BASIN IN 1983

The total water diverted in the Roswell Ground Water Basin for the water year 1983 (November 1, 1982 - October 31, 1983) under the administrative jurisdiction of the Roswell Basin Watermaster, was 378,966.6 acre-feet. Under the decree adjudicating water rights in the basin, discrete five year periods were set up for accounting of the metered water. 1983 was the second year of the fourth five year period.

Of the total diversion, 244,081.5 acre-feet (64.41%) was from the artesian source, 121,502.0 acre-feet (32.06%) was from the shallow source and 13,383.1 acre-feet (3.53%) was diverted from combined underground and surface sources primarily under the Hagerman Canal and the Rio Hondo.

Irrigation use accounted for 94% of the total diverted, municipal type use accounted for 5% and miscellaneous, industrial and commercial uses accounted for the remaining 1%.

The irrigation use on 120,277.67 equivalent water right acres (acres as originally adjudicated) permitted an average diversion of 2.97 acre-feet per acre for the basin as a whole varying from a high of 3.49 acre-feet per acre in the Lakewood-Seven Rivers area to a low of 1.48 acre-feet per acre in the Upper Felix area. The equivalent acreage figures and pumpage figures do not include unmetered stock and domestic uses, water right acreage retired from

irrigation under the program of the Pecos Valley Artesian Conservancy District. Eight hundred and fifty-one farming units are included. Included in the totals are 7031.5 acre-feet (1.97% of the total irrigation diversion) which was computed for periods when meters were inoperative.

Roswell Basin Watermaster Office
December 1983

ROSWELL BASIN WATERMASTER

Tabulation of Annual Water Diverted

1967-1983

| :Year | : Ac. Ft. | : Irrigation : : Eq. Ac. | : Ac. Ft./Ac. | : Municipal : : Ac. Ft. | : Ind. & Com.: : Ac. Ft. | : TOTAL : : Ac. Ft. |
|--------|-------------|-----------------------------|---------------|----------------------------|-----------------------------|------------------------|
| :1967 | : 371,250.6 | : 130,132.7 | : 2.85 | : 14,528.3 | : 1,582.6 | : 387,361.5 |
| :1968 | : 323,917.1 | : 128,245.0 | : 2.53 | : 13,596.3 | : 1,611.1 | : 339,124.5 |
| :1969 | : 345,087.1 | : 128,330.6 | : 2.69 | : 15,586.9 | : 899.1 | : 361,573.1 |
| :1970 | : 358,686.8 | : 126,002.4 | : 2.85 | : 15,888.5 | : 916.3 | : 375,491.6 |
| :1971 | : 384,228.1 | : 126,121.0 | : 3.05 | : 16,439.6 | : 3,082.0 | : 403,749.7 |
| :5 Yr. | : | : | : | : | : | : |
| :Aver. | : 356,633.9 | : 127,766.3 | : 2.79 | : 15,207.9 | : 1,618.2 | : 373,460.0 |
| :1972 | : 367,363.6 | : 125,233.8 | : 2.93 | : 14,821.2 | : 2,398.9 | : 384,583.7 |
| :1973 | : 386,288.8 | : 125,293.0 | : 3.08 | : 15,335.0 | : 2,983.0 | : 404,606.8 |
| :1974 | : 392,413.3 | : 124,240.1 | : 3.16 | : 18,318.5 | : 3,646.3 | : 414,378.1 |
| :1975 | : 368,512.6 | : 123,740.7 | : 2.98 | : 16,145.9 | : 3,083.9 | : 387,742.4 |
| :1976 | : 419,491.9 | : 123,170.1 | : 3.41 | : 18,182.2 | : 3,271.9 | : 440,946.0 |
| :5 Yr. | : | : | : | : | : | : |
| :Aver. | : 386,814.0 | : 124,335.5 | : 3.11 | : 16,560.6 | : 3,076.8 | : 406,451.4 |
| :1977 | : 387,858.0 | : 122,703.7 | : 3.16 | : 18,422.7 | : 3,071.4 | : 409,352.2 |
| :1978 | : 359,011.0 | : 122,233.7 | : 2.94 | : 15,569.7 | : 3,270.7 | : 377,851.4 |
| :1979 | : 355,163.8 | : 122,002.4 | : 2.91 | : 16,181.9 | : 2,853.0 | : 374,198.7 |
| :1980 | : 360,484.4 | : 121,763.3 | : 2.96 | : 17,804.3 | : 2,388.6 | : 380,677.3 |
| :1981 | : 317,225.2 | : 121,530.0 | : 2.61 | : 14,558.1 | : 2,340.8 | : 334,124.1 |
| :5 Yr. | : | : | : | : | : | : |
| :Aver. | : 355,948.5 | : 122,046.6 | : 2.92 | : 16,507.3 | : 2,784.9 | : 375,240.7 |
| :1982 | : 377,179.4 | : 120,932.0 | : 3.12 | : 18,292.1 | : 2,747.2 | : 398,218.7 |
| :1983 | : 356,836.0 | : 120,277.7 | : 2.97 | : 19,312.3 | : 2,718.3 | : 378,966.6 |

6,297,717
 11,183,000
 11,183,000
 2.95

TOWNSHIP _____ RANGE _____ SECTIONS _____

| | Location | Right Acre Feet | PUMPAGE - ACRE FEET | | | | Date | Rate of Application |
|--|------------------|--------------------|---------------------|-----------|-----------|-----------|------|---------------------|
| | | | Surface | Shallow | Artesian | Total | | |
| T 7,8,9 S; R 23 Thru 26 E | Northern | 30,275.3 | | 413.3 | 20,174.5 | 20,587.8 | | 2.04 |
| | Extension | | | | | | | |
| T 10,11,12 S; R 22,23,24 E | Roswell - East | 103,050.3 | | 26,560.1 | 73,436.0 | 99,996.1 | | 2.91 |
| T 10,11,N $\frac{1}{2}$ 12 S; R 25,26 E | Grand Plains | | | | | | | |
| T 13,14, N $\frac{1}{2}$ 15 S; R 23,24 E | Dexter-Hagerman | 102,217.1 | 13,383.1 | 42,938.9 | 46,950.2 | 103,272.2 | | 3.03 |
| T S $\frac{1}{2}$ 12,13,14; N $\frac{1}{2}$ 15 S; R 25,26,27 E | Area | | | | | | | |
| T S $\frac{1}{2}$ 15; N 2/3 16 S; R 23 thru 26 E | Cottonwood | 59,773.5 | | 22,055.3 | 43,910.3 | 65,965.6 | | 3.31 |
| | Area | | | | | | | |
| T 15 S; R 17, 18 E | Upper Rio | 2,281.0 | | | 1,122.3 | 1,122.3 | | 1.48 |
| | Felix | | | | | | | |
| T S 1/3 16,17,18 S; R 25,26 E | Artesia | 51,574.3 | | 19,058.5 | 33,270.0 | 52,328.5 | | 3.04 |
| | Area | | | | | | | |
| T 19,20 S; R 25,26 E | Lakewood - | 11,661.5 | | 8,016.2 | 5,547.3 | 13,563.5 | | 3.49 |
| | Seven Rivers | | | | | | | |
| | Total Irrigation | 360,833.0 | 13,383.1 | 119,042.3 | 224,410.6 | 356,836.0 | | 2.97 |
| | Use | | | | | | | |

METERED PUMPAGE SUMMARY SHEET

TOWNSHIP _____

RANGE _____

SECTIONS _____

| Water Right No. | Well No. | Source | Use | Well Location | Right Acre Feet | PUMPAGE - ACRE FEET | | | | Date | Remarks |
|-----------------|----------|--------|-----|--|-----------------|---------------------|---------|----------|----------|------|-------------------------------|
| | | | | | | Surface | Shallow | Artesian | Total | | |
| | | | | MUNICIPAL & MUNICIPAL TYPE USE | | | | | | | |
| | | | | Roswell | | | | 10918.9 | 10918.9 | | |
| | | | | Dexter | | | 422.8 | 305.2 | 728.0 | | |
| | | | | Hagerman | | | | 428.0 | 428.0 | | |
| | | | | Lake Arthur | | | | 62.3 | 62.3 | | |
| | | | | Artesia | | | | 5120.1 | 5120.1 | | |
| | | | | Hope | | | | 64.5 | 64.5 | | |
| | | | | Co-ops | | | | 1858.2 | 1858.2 | | |
| | | | | Domestic Utilities | | | 42.2 | 90.1 | 132.3 | | |
| | | | | TOTAL | | | 465.0 | 18847.3 | 19312.3 | | |
| | | | | FEED PEN OPERATIONS (NOT FARM CONNECTED) | | | | 263.6 | 263.6 | | |
| | | | | FEED PEN OPERATIONS (FARM CONNECTED) | | | * 55.3 | * 259.1 | * 314.4 | | * Not to be included in Total |
| | | | | DAIRIES- FARM CONNECTED- CHARGED TO | | | | | | | |
| | | | | IRRIGATION WATER RIGHTS | | | * 721.0 | * 450.0 | * 1171.0 | | * Not to be included in Total |
| | | | | SCHOOL SYSTEMS: ROSWELL | | | | 88.6 | 88.6 | | |
| | | | | MISCELLANEOUS INDUSTRIAL & COMMERCIAL | | | | | | | |
| | | | | Chaves County | | | 1606.3 | 349.5 | 1955.8 | | |
| | | | | Eddy County | | | 124.8 | 385.5 | 510.3 | | |
| | | | | TOTALS | | | 2459.7 | 19670.9 | 22130.6 | | |

TWP _____ RNG _____

1983 METERED USE
(IRRIGATION)

Basin-Wide: 356,836.00 Acre Feet
2.97 Acre Feet Per Acre

Northern Extension
20,587.80 Acre Feet
2.04 Acre Feet Per Acre

Roswell-East Grand Plains
99,996.10 Acre Feet
2.91 Acre Feet Per Acre

Dexter-Hagerman
103,272.20 Acre Feet
3.03 Acre Feet Per Acre

Upper Felix
1,122.30 Ac. ft
1.48 Ac. ft/Ac

Cottonwood
65,965.60 Acre Feet
3.31 Acre Feet Per Acre

Artesia
52,328.50 Acre Feet
3.04 Acre Feet Per Acre

Lakewood-Seven Rivers
13,563.50 Acre Feet
3.49 Acre Feet Per Acre

ROSWELL BASIN WATERMASTER OFFICE
Glenn W. Brim, Watermaster

Approved Budget for the
72nd Fiscal Year
(1983 - 1984)

SALARIES:

| | |
|-----------------|---------------------|
| Watermaster | \$ 32,184.00 |
| Assistant | 17,064.00 |
| Secretary | 11,544.00 |
| Aide (6 months) | 7,740.00 |
| Aide (6 months) | 4,986.00 |
| TOTAL: | <u>\$ 73,518.00</u> |

BENEFITS:

| | |
|---------------------------------------|---------------------|
| Group Insurance | \$ 3,602.00 |
| Retirement @7.85% | 5,772.00 |
| FICA @6.70% | 5,036.00 |
| Workman's Compensation @1.46/\$100.00 | 796.00 |
| Liability Insurance @0.39/\$100.00 | 184.00 |
| Unemployment Compensation | 116.00 |
| TOTAL: | <u>\$ 15,506.00</u> |

Personnel Assessment \$170.00 per employee x 4 \$680.00

TRAVEL:

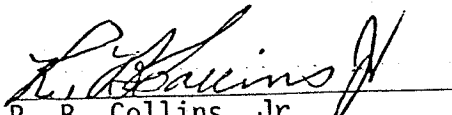
| | |
|--|---------------------|
| Mileage 86,000 miles @.22 mi. | \$ 18,920.00 |
| Meals & Lodging (605 quarter days @9.00) | 5,445.00 |
| TOTAL: | <u>\$ 24,365.00</u> |

| | |
|----------------------|--------------------|
| Postage | \$ 250.00 |
| Maintenance Supplies | 150.00 |
| Communications | 600.00 |
| Rent and Utilities | 1,800.00 |
| TOTAL: | <u>\$ 2,800.00</u> |

GRAND TOTAL

\$116,869.00

It is anticipated that line items will vary, but that the total will not exceed \$116,869.00 for the 72nd Fiscal Year.


R. B. Collins, Jr.
District II Supervisor
May 16, 1983

ROSWELL BASIN WATERMASTER

ITEMIZED EXPENDITURES

| | January | February | March | April | May | June | 1983 First Half | 1982 Last Half |
|--------------------------------|----------|----------|----------|-----------|-----------|-----------|--------------------|-------------------|
| Salaries: | | | | | | | | |
| Watermaster | 2,237.28 | 2,237.28 | 2,237.28 | 3,470.40 | 2,466.24 | 3,576.05 | 16,224.53 | 13,203.06 |
| Assistant Watermaster | 1,129.12 | 1,218.32 | 1,307.52 | 1,961.28 | 1,307.52 | 1,895.90 | 8,819.66 | 6,852.18 |
| Secretary | 802.72 | 802.72 | 802.72 | 1,204.08 | 802.72 | 1,163.94 | 5,578.90 | 4,812.44 |
| Other | 184.86 | 82.64 | 82.64 | 2,666.49 | 2,015.12 | 2,910.72 | 7,942.47 | 8,148.18 |
| Insurance, State Share | 109.60 | 98.22 | 98.22 | 262.93 | 195.74 | 283.54 | 1,048.25 | 988.79 |
| Social Security | 291.72 | 290.84 | 296.82 | 623.25 | 441.64 | 639.61 | 2,583.88 | 2,191.99 |
| Retirement | 341.79 | 340.77 | 347.76 | 730.23 | 517.44 | 749.40 | 3,027.39 | 2,582.10 |
| Workman's Compensation | | | | | | | | |
| Unemployment | | | | | | | | |
| Mileage, Gas, Maint. & Repairs | 1,130.14 | 1,157.64 | 1,429.12 | 2,161.50 | 2,292.84 | 2,044.68 | 10,215.92 | 7,656.88 |
| Per Diem | 126.00 | 360.00 | 405.00 | 522.00 | 450.00 | 657.00 | 2,520.00 | 2,260.00 |
| Liability Insurance | | | | | | | | |
| Communications | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 300.00 | 300.00 |
| Rent | 150.00 | 150.00 | 150.00 | 150.00 | 150.00 | 150.00 | 900.00 | 900.00 |
| Maint., Fixt., Supplies | | | | 54.47 | | | 54.47 | |
| Service to other Agency | | | | | | | | |
| TOTALS | 6,553.23 | 6,788.43 | 7,207.08 | 13,856.63 | 10,689.26 | 14,120.84 | 59,215.47 | 49,895.62 |

SUMMARY

Metered use of water during 1983 resulted in an average use, for irrigation purposes, of 2.97 acre-feet per water right acre. The total quantity diverted for all uses was eleventh from the highest^{IN} sixteen years.

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 satisfactory.