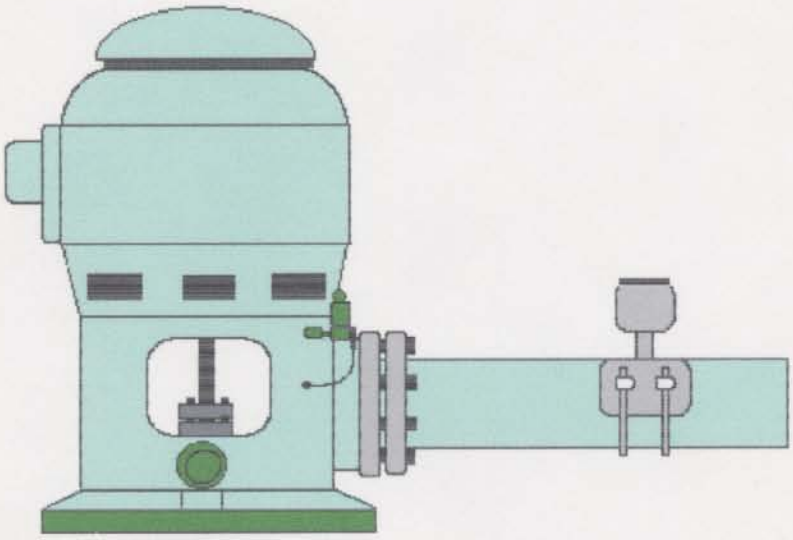
ROSWELL BASIN WATERMASTER

43rd

ANNUAL REPORT

2008



DAVID L. THOMAS, WATERMASTER

1900 WEST SECOND STREET

ROSWELL, NEW MEXICO 88203

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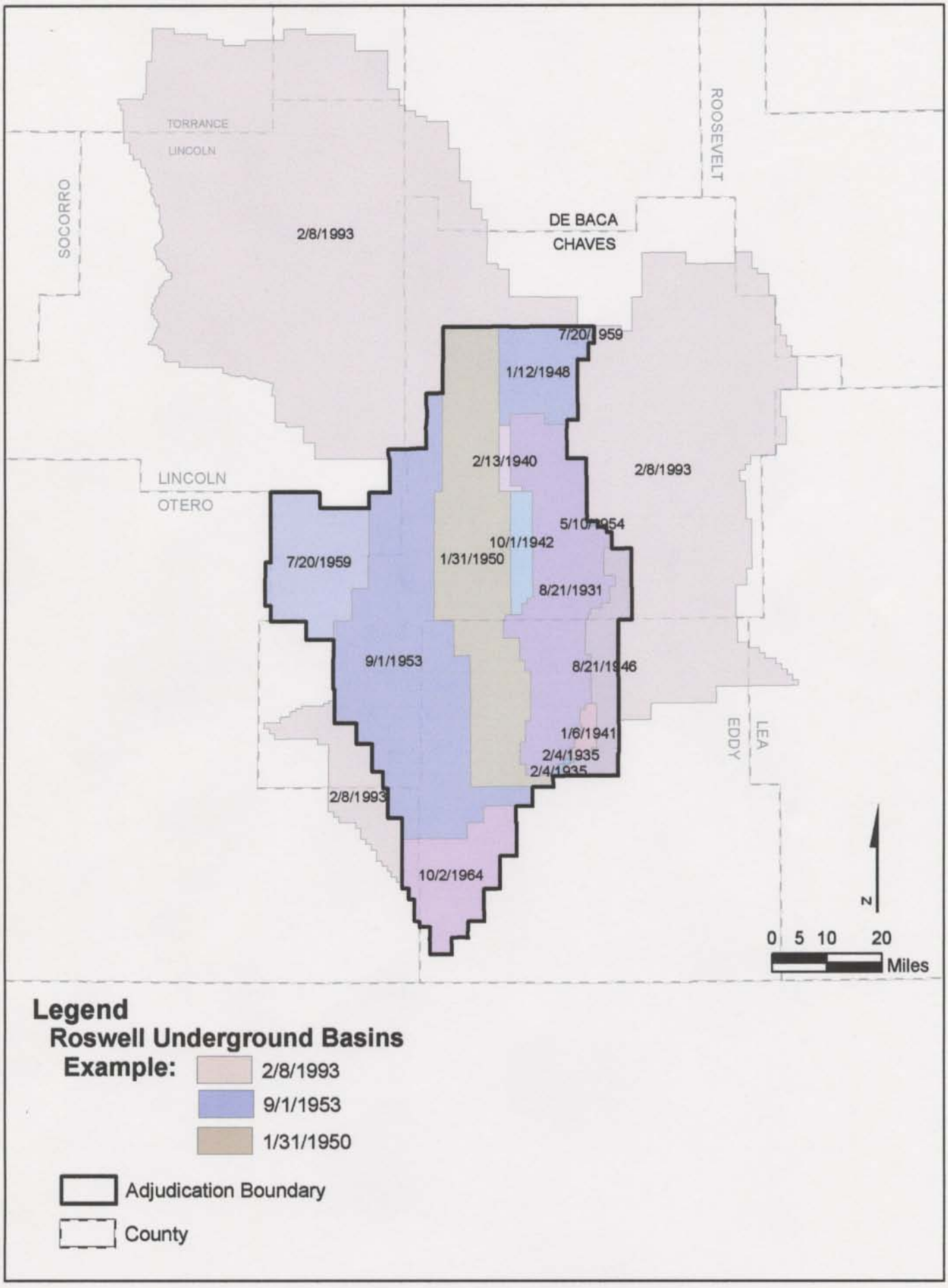
INTRODUCTION

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. The present Watermaster David L. Thomas was appointed by the Honorable Harl D. Byrd, District Judge, on July 20, 2001.

This is the 43rd Annual Report of the Watermaster's Office.



Legend

Roswell Underground Basins

Example:

- 2/8/1993
- 9/1/1953
- 1/31/1950

Adjudication Boundary

County

GENERAL

The Roswell Basin Water Master administers the diversion of water under the Adjudication Decree in an area existing, 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 92.01% of the total water diverted. Municipal use of water accounts for about 6.68% and about 1.31% 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 acreage. Some rights have been transferred to Municipal and Industrial uses, while the Pecos Valley Artesian Conservancy District (PVACD) has retired some rights 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. 20294 and No. 22600 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 non-supplemented canal right and only the supplemented right shall be accounted unless otherwise indicated by conditions of approval of an individual permit.**

The Honorable Judge David W. Bonem served during the 2008 reporting period.

Personnel of the Watermaster Office at the beginning of the 2008 season consisted of David L. Thomas, Roswell Basin Water Master, Angela Molinar, Secretary-Clerk, Phillip Fields, Assistant Water Master, Mike Hunter, Assistant Water Master, and Brad Todd, Assistant Water Master.

The operations of the Watermaster Office are financed through the Pecos Valley Artesian Conservancy District. Under the terms of the Adjudication Decree, the Office of 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 reimburses the Office of the State Engineer for monthly expenses incurred. The funds of PVACD are derived from a levy of lands from within the district.

METERING PROGRAM

Four hundred and eighty meters were found inoperative during the 2008 irrigation season. Based on a total of 1554 (primary)** meters installed on irrigation, feed pen, dairy, and Hagerman Canal Wells, this is 30.8% as compared to 44.2% found inoperative in 2007. Each meter was read an average of 7.0 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 2008 irrigation season, are listed as follows:

MAKE OF METER	TOTAL OF MAKE	% OF TOTAL	TOTAL IN-OP	% MAKE IN-OP	% OF TOTAL INSTALLED
McCROMETER	1412	90.8	470	33.3	30.2
ROCKWELL/SENSUS	121	7.8	10	8.2	0.6
MISCELLANEOUS	21	1.4	0	0	0
TOTALS	1554	100	480		30.8

Adjustments in amount of water diverted through inoperative meters for 2008 totaled 9480.68 acre-feet of which 6223.64 acre-feet was Artesian underground water and 3257.04 acre-feet of which was Shallow underground water diverted for irrigation use.

** Primary meters are meters the P.V.A.C.D. will repair or replace in the field.

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

Primary meters are being maintained, repaired and/or replaced by field personnel of the PVACD.

CHANGES IN THE ADJUDICATION DECREE

There were no changes in the Adjudication Decree during the 2008 water year.

VIOLATIONS ACTIONS

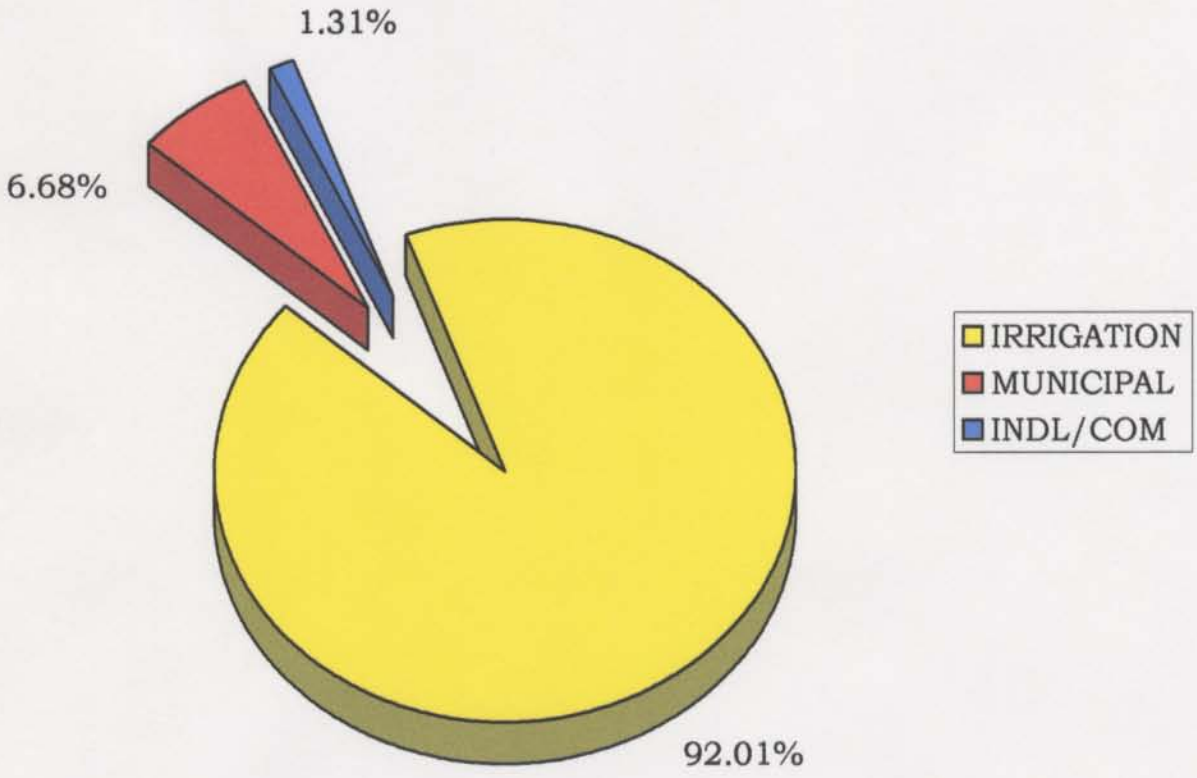
There were no instances of overuse in 2008.

ACCOUNTING PROCEDURE REVISION

Beginning in 1998 total diversion of water shown for commercial and industrial use and percentages there of, will be based on "actual" diversions. In the past, diversion amounts were multiplied by 1.43 or 1.67 where applicable; to compensate for carriage loss and/or lack of return flow. Although this is the amount charged against the water right it is not actual diversion amounts. This pertains to commercial or industrial operations that are farm connected.

PERCENT OF WATER USED IN 2008 FOR

IRRIGATION, MUNICIPAL, INDUSTRIAL & COMMERCIAL



USE OF WATER IN THE ROSWELL BASIN IN 2008

The total water diverted in the Roswell Ground Water Basin for the water year 2008 (November 1, 2007 – October 31, 2008) under the administrative jurisdiction of the Roswell Basin Water Master, was 361,415.06 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 second year of the ninth five-year period was 2008.

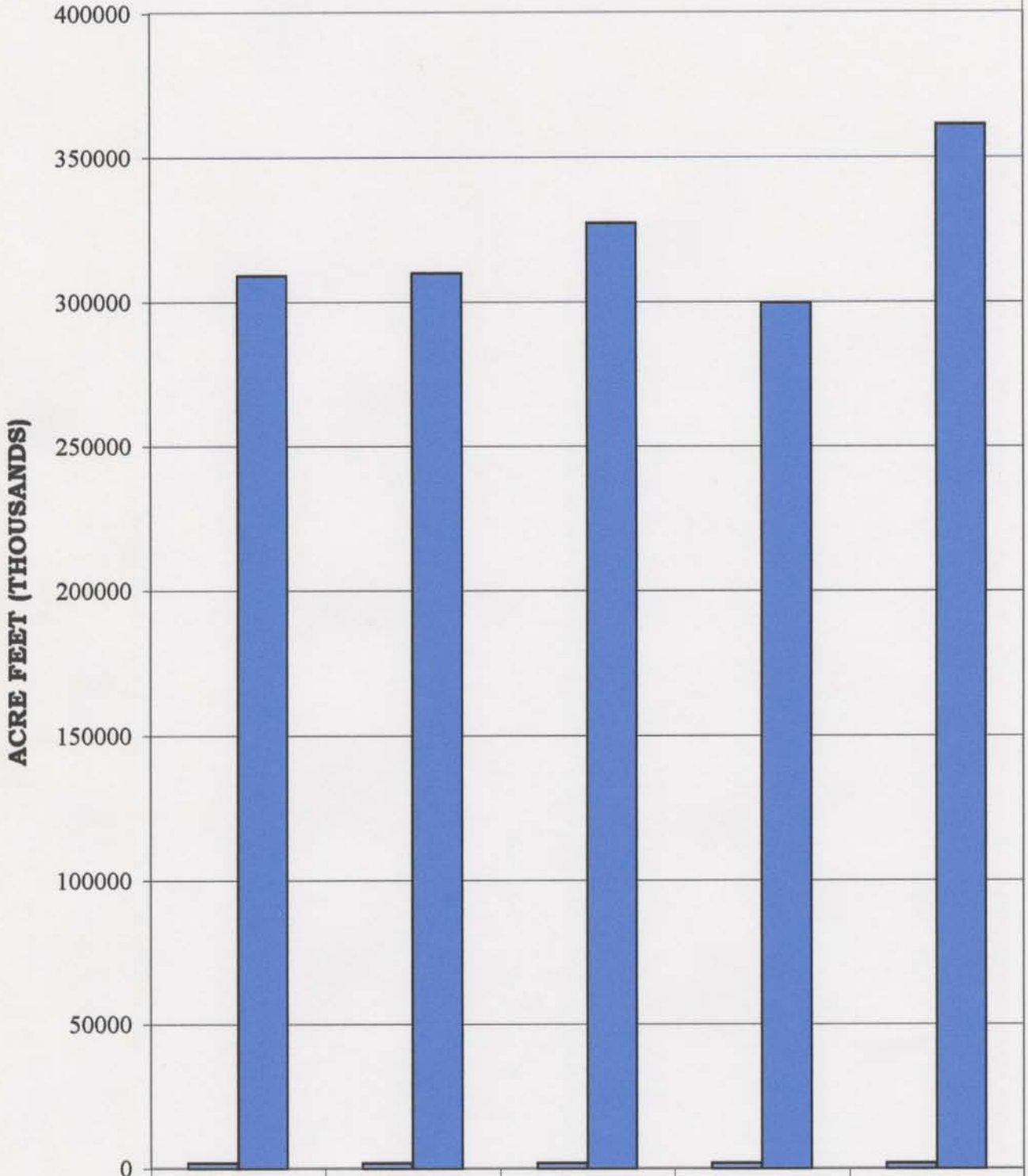
Of the total diversion, 262,228.45 acre-feet (72.6%) was from the Artesian source, 95,025.39 acre-feet (26.3%) was from the Shallow source and 4,161.22 acre-feet (1.1%) was diverted from combined underground and surface sources primarily under the Hagerman Canal and the Rio Hondo.

Irrigation use accounted for 92.01% of the total diverted, Municipal type use accounted for 6.68% and Miscellaneous, Industrial and Commercial uses accounted for the remaining 1.31%.

The irrigation use on 113,301.16 equivalent water right acres (acres as originally adjudicated) permitted, an average diversion of 2.93 acre-feet per acre for the basin as a whole varying from a high of 3.44 acre-feet per acre in the Roswell – East Grand Plains area to a low of 1.69 acre-feet per acre in the Upper Rio Felix.

The equivalent acreage figures and diversion figures do not include un-metered stock and domestic uses or water right acreage retired from irrigation under the program of the PVACD. There are eight hundred and ninety farming units

FIVE YEAR COMPARISON OF TOTAL DIVERSION



	1	2	3	4	5
Year	2004	2005	2006	2007	2008
Acre-Feet	309,082.01	309,914.76	327,140.00	299,489.06	361,415.06

TABULATION OF ANNUAL WATER DIVERSION

1967 TO PRESENT

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
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
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
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
5-YEAR AVG.	318,382.46	119,718.46	2.66	18,429.16	2,705.26	339,516.88

TABULATION OF ANNUAL WATER DIVERSION (CONT.)

1967 TO PRESENT

YEAR	IRRIGATION ACRE FEET	IRRIGATION EQ. AC.	ACRE FEET PER ACRE	MUNICIPAL ACRE FEET	INDL./COML. ACRE-FEET	TOTAL ACRE-FEET
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
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	380,191.30
1995	356,806.30	114,507.90	3.12	24,009.90	5,827.80	386,644.00
1996	345,278.53	113,481.60	3.04	22,245.70	5,781.10	373,305.33
5-YEAR AVG.	343,129.21	114,671.78	2.99	21,777.52	5,854.92	370,761.65
1997	346,681.00	113,568.02	3.05	21,076.10	5,316.80	373,073.90
1998	368,057.77	113,691.05	3.24	22,308.50	5,995.40	396,361.67
1999	317,652.73	113,686.18	2.79	20,275.90	5,765.18	343,693.81
2000	374,090.19	116,364.42	3.21	23,887.60	3,665.50	401,643.29
2001	310,134.69	113,497.67	2.73	22,315.80	3,789.40	336,239.89
5-YEAR AVG.	343,323.28	114,161.47	3.01	21,972.78	4,906.46	370,202.51
2002	348,596.69	113,325.27	3.08	22,815.18	5,473.95	376,885.82
2003	344,034.63	113,537.16	3.03	24,161.26	4,490.87	372,686.76
2004	282,067.23	114,493.28	2.46	21,631.54	5,383.24	309,082.01
2005	283,360.59	114,209.79	2.48	21,864.83	4,689.34	309,914.76
2006	299,201.31	113,967.87	2.63	23,035.87	4,902.82	327,140.00
5-YEAR AVG.	311,452.09	113,906.67	2.74	22,701.74	4,988.04	339,141.87

TABULATION OF ANNUAL WATER DIVERSION (CONT.)

1967 TO PRESENT

YEAR	IRRIGATION ACRE FEET	IRRIGATION EQ. AC.	ACRE FEET PER ACRE	MUNICIPAL ACRE FEET	INDL./COML. ACRE-FEET	TOTAL ACRE-FEET
2007	274,911.45	113,949.88	2.41	19,340.93	5,236.68	299,489.06
2008	332,518.41	113,301.16	2.93	24,153.77	4,742.88	361,415.06
2009						
2010						
2011						
5-YEAR AVG.						
2012						
2013						
2014						
2015						
2016						
5-YEAR AVG.						
2017						
2018						
2019						
2020						
2021						
5-YEAR AVG.						
2022						
2023						
2024						
2025						
2026						
5-YEAR AVG.						

MUNICIPAL USE

FOR 2008

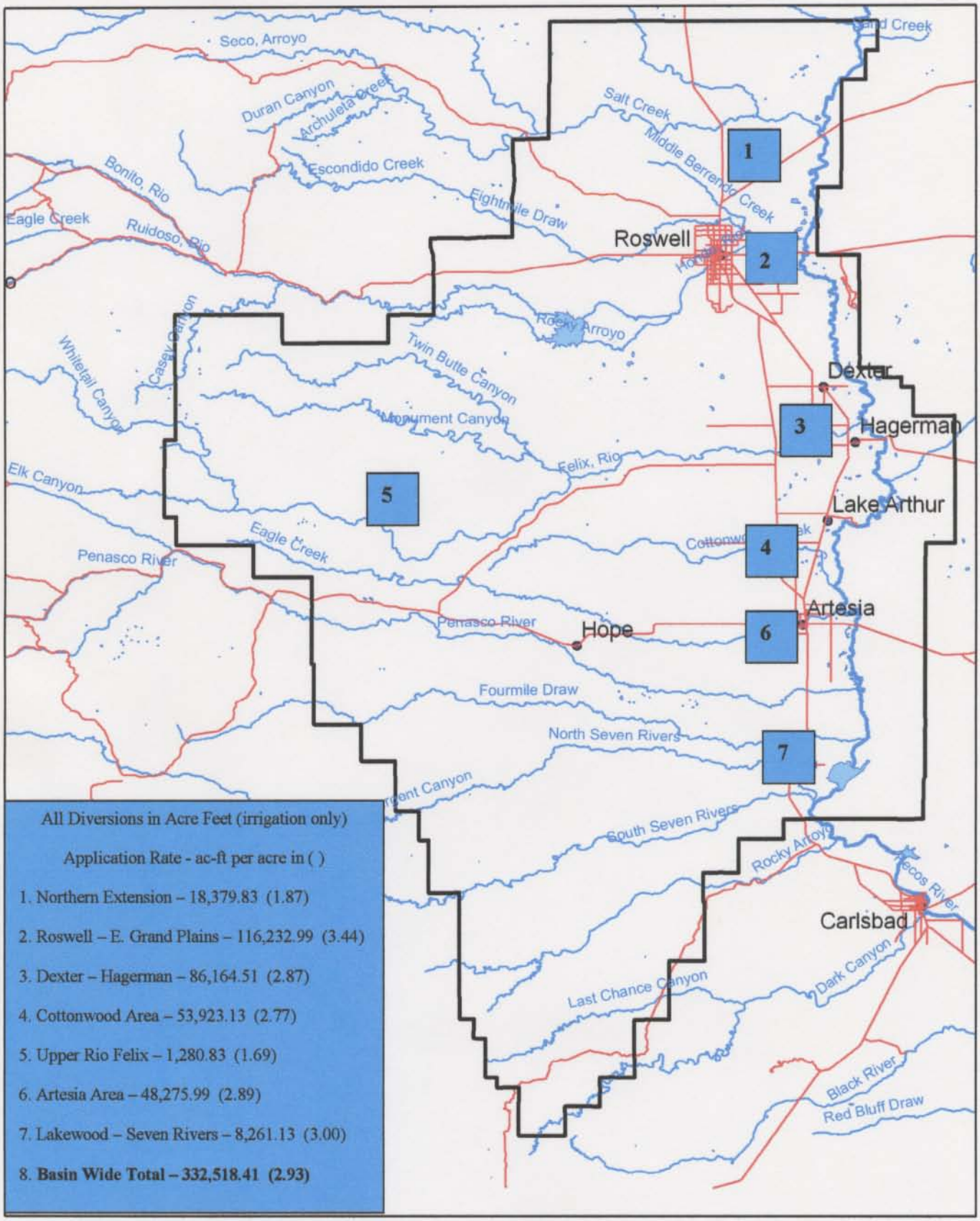
MUNICIPAL & MUNICIPAL TYPE USE	PUMPAGE IN ACRE-FEET			REMARKS
	SHALLOW	ARTESIAN	TOTAL	
ROSWELL	0.00	13,350.28	13,350.28	
DEXTER	612.90	437.18	1,050.08	
HAGERMAN	0.00	616.85	616.85	
LAKE ARTHUR	8.90	121.35	130.25	
ARTESIA	0.00	4,984.39	4,984.39	
HOPE	0.00	44.82	44.82	
CO OPS	0.00	3,542.50	3,542.50	
DOMESTIC UTILITIES	70.69	265.06	335.75	
SCHOOL SYSTEMS	34.47	64.38	98.85	DEXTER & ROSWELL
TOTAL MUNICIPAL USE	726.96	23,426.81	24,153.77	

COMMERCIAL AND INDUSTRIAL USE

FOR 2008

	PUMPAGE IN ACRE FEET			
COMMERCIAL DAIRY & FEED PEN USE	SHALLOW	ARTESIAN	TOTAL	REMARKS
FEED PEN OPERATIONS (N. F. C.)	0.00	0.00	0.00	Not Farm Connected
FEED PEN OPERATIONS (F. C.)	0.43	0.00	0.43	Farm Connected
DAIRIES (F. C.) **	11,870.89	29,031.44	40,902.33	**Included in IRR. Total
DAIRIES (N. F. C.)	115.29	1,737.24	1,852.53	Not Included in IRR. Total
TOTALS	**115.72**	**1,737.24**	**1,852.96**	
MISC. INDUSTRIAL & COMMERCIAL	SHALLOW	ARTESIAN	TOTAL	
CHAVES COUNTY	1,768.30	186.44	1,954.74	
EDDY COUNTY	54.01	881.17	935.18	
TOTALS	**1,822.31**	**1,067.61**	**2,889.92**	
TOTAL ALL COML. & INDUST.	**1,938.03**	**2,804.85**	**4,742.88**	
TOTAL ALL MUNICIPAL (pg.16), COMMERCIAL AND INDUSTRIAL USE	**2,664.99**	**26,231.66**	**28,896.65**	** EXCLUDES FARM CONNECTED DAIRIES

ROSWELL UNDERGROUND WATER BASIN MAP
INDICATING GENERAL AREAS OF IRRIGATION



All Diversions in Acre Feet (irrigation only)

Application Rate - ac-ft per acre in ( )

1. Northern Extension – 18,379.83 (1.87)
2. Roswell – E. Grand Plains – 116,232.99 (3.44)
3. Dexter – Hagerman – 86,164.51 (2.87)
4. Cottonwood Area – 53,923.13 (2.77)
5. Upper Rio Felix – 1,280.83 (1.69)
6. Artesia Area – 48,275.99 (2.89)
7. Lakewood – Seven Rivers – 8,261.13 (3.00)
8. **Basin Wide Total – 332,518.41 (2.93)**

Miles
10 5 0 10 20

N

2008

AREA BREAKDOWN

DESCRIPTION	ACRE-FEET	PUMPAGE IN ACRE-FEET				APP. RATE
		SURF	SHALLOW	ARTESIAN	TOTAL	
NORTHERN EXTENSION	29,489.66		0.00	18,379.83	18,379.83	1.87
ROSWELL - EAST GRAND PLAINS	101,271.19		25,735.46	90,497.53	116,232.99	3.44
DEXTER - HAGERMAN	90,146.19	4,161.22	31,746.50	50,256.79	86,164.51	2.87
HAGERMAN IRR. COMPANY	24,996.21		1,461.95	6,753.05	8,215.00	0.99
NON SUPPLEMENTAL CANAL USE		4,057.48			4,057.48	
COTTONWOOD AREA	58,340.38	0.00	16,362.43	37,560.70	53,923.13	2.77
UPPER RIO FELIX	2,280.39	0.00	0.00	1,280.83	1,280.83	1.69
ARTESIA AREA	50,111.78		16,119.64	32,156.35	48,275.99	2.89
LAKEWOOD - SEVEN RIVERS	8,263.90		2,396.37	5,864.76	8,261.13	3.00
TOTAL ALL AREAS (DOES NOT INCLUDE H.I.C.)	339,903.49	8,218.70	92,360.40	235,996.79	332,518.41	2.93

FY 2008 Roswell Watermaster Operating Budget

Employees:

David L. Thomas
Angela Molinar
Phillip Fields
Robert B. Todd
Mike Hunter

Object Code	Object Item	Amount
2031	Permanent Position F/T	214,900.00
2111	Group Insurance	41,800.00
2121	Retirement	35,600.00
2131	FICA	16,400.00
2141	Workers Compensation	0.00
2171	Retiree Health Care Act	2,800.00
2191	Other Employee Benefits	0.00
	Salaries and Benefits	311,500.00
3522	Professional Services Contract	1,300.00
4221	In-State Travel	200.00
4251	Gas & Oil	10,000.00
4281	State Transportation Pool	16,800.00
	In-State Travel	27,000.00
4321	Furniture Fixtrues & Equipment	1,300.00
4382	IT Maintenance Rept.	1,900.00
	Maintenance & Repair	3,200.00
4411	Office Supplies	1,100.00
4441	Field Supplies	1,400.00
4491	Inventory Exempt	400.00
	Supplies	2,900.00
4571	ISD Services	800.00
4592	Printing & Photographic	300.00
4612	Postage & Mail Service	600.00
4642	Rent/Land & Building	18,300.00
4662	Telecommunications	2,500.00
4681	Employee Train & Educator	100.00
		22,600.00
4831	Data Processing	0.00
		0.00
	Grand Total	368,500.00

Roswell Basin Watermaster
Expenditures For Calendar Year 2008
January - December 2008

	January - June 2008	July - December 2008	Total
Salaries/Benefits	157,889.25	162,106.56	319,995.81
Travel	0.00	0.00	0.00
Vehicle Leases/Gasoline	19,291.89	9,115.76	28,407.65
Supplies - Office/Field Inv. Exempt	427.25	2,391.90	2,819.15
Postage & Mail/Printing	600.00	1,200.00	1,800.00
Rent	7,625.00	10,670.44	18,295.44
Telecommunications	2,005.79	796.03	2,801.82
Data Processing Equipment	1,478.78	0.00	1,478.78
Total Expenditures	189,317.96	186,280.69	375,598.65

SUMMARY

Metered use of water during 2008 resulted in an average use, for irrigation purposes, of 2.93 acre-feet per water right acre. The total quantity diverted for all uses was the twenty-third 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.