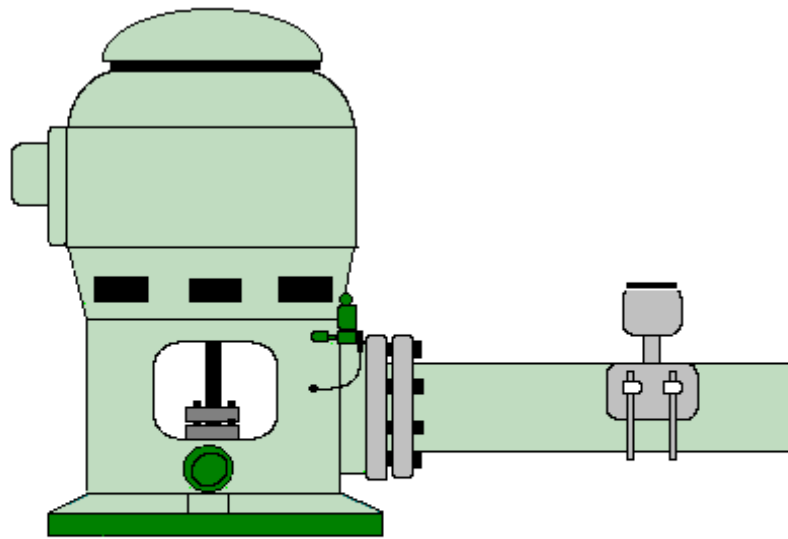


# ROSWELL BASIN WATER MASTER

49th

ANNUAL REPORT

2014



DAVID L. THOMAS, WATER MASTER

1900 WEST SECOND STREET

ROSWELL, NEW MEXICO 88201

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## INTRODUCTION

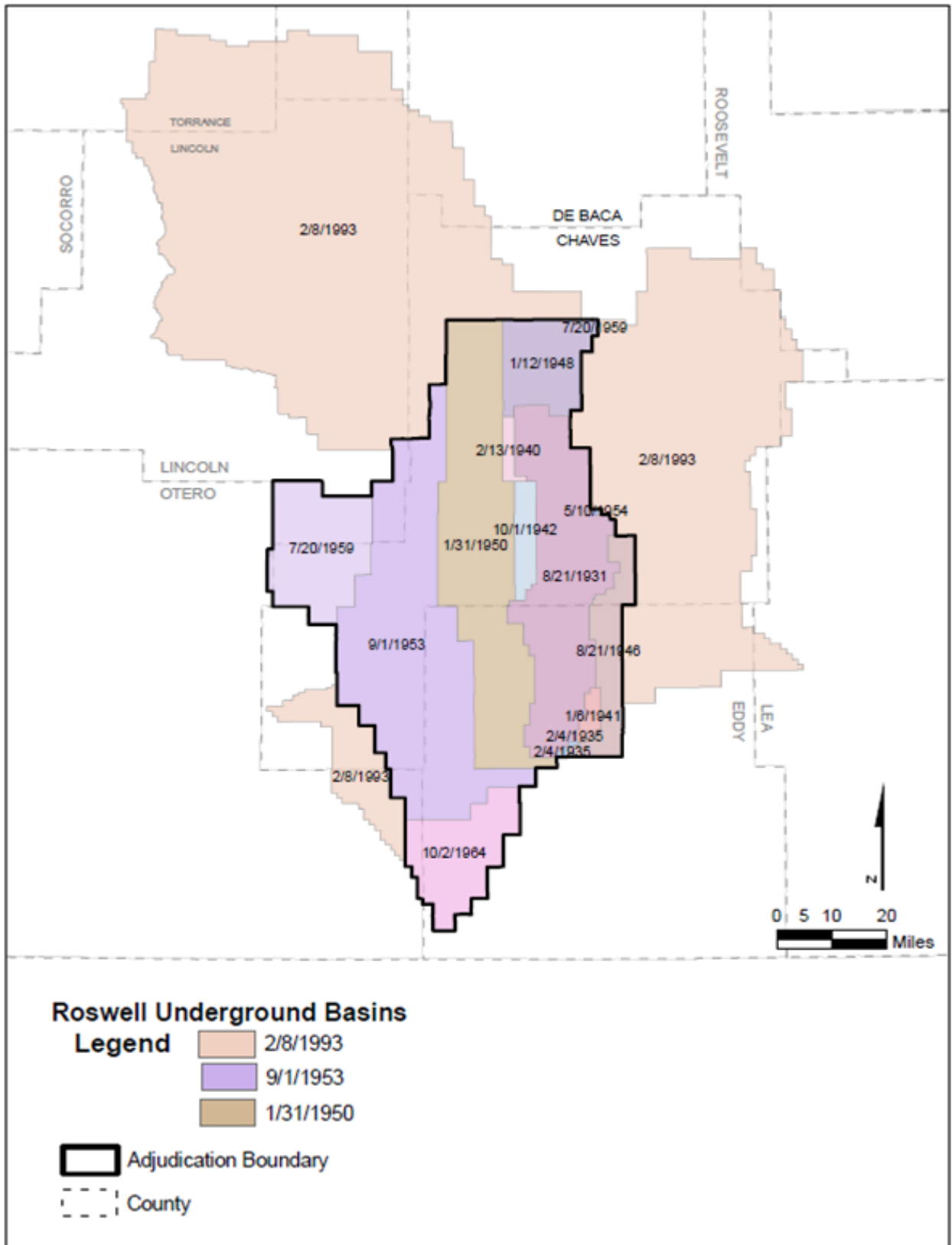
On January 10, 1966 Partial Judgment and Decree was entered under Cause No. 20294 and No. 22600 Consolidated in Chaves County, New Mexico. This Decree, which adjudicated all ground water rights for irrigation, municipal, and industrial purposes in the Roswell Artesian Basin in Chaves and Eddy Counties,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

**“5. The State Engineer shall appoint and employ a Water Master and such assistants as are necessary in the administration and enforcement of this Judgment and Decree, provided that the appointment of the Water Master shall be subject to the approval of the Court. Such Water Master shall be appointed to commence work not later than July 1, 1966. The Water Master 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 Water Master on February 2, 1966. The present Water Master, David L. Thomas, was appointed by the Honorable Harl D. Byrd, District Judge, on July 20, 2001.

This is the 49<sup>th</sup> Annual Report of the Water Master’s Office.

# ADJUDICATION MAP OF THE ROSWELL UNDERGROUND BASIN



## 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 equaling a distance of approximately eighty miles. The principal use of water in the area is for agricultural purposes, which accounts for about 91.17% of the total water diverted. Municipal use of water accounts for about 7.58% and about 1.25% 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 the 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, diversions of water for rights under the Hagerman Canal were accounted by the Roswell Basin Water Master 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, which 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 Raymond Romero served during the 2014 reporting period.

Personnel of the Water Master Office at the beginning of the 2014 season consisted of David L. Thomas as Roswell Basin Water Master, Brad Todd and David DePaola Assistant Water Masters.

Azucena Ramirez begin working in the Water Master's Office on May 25, 2013

Eric Boyda begin working in the Water Master's Office on January 18, 2014

David DePaola Left the Water Master's Office on March 1, 2014

Preciliano Pino begin working in the Water Master's Office on September 13, 2014

Eric Boyda left the Water Master's Office on September 27, 2014

Iain Mason begin working in the Water Master's Office on October 11, 2014

The operations of the Water Master Office are financed through the PVACD. Under the terms of the Adjudication Decree, the Office of the State Engineer (OSE) annually submits to the PVACD a budget for the operations of the Water Master Office. The PVACD Board then moves the Court to approve or modify the budget submitted. The PVACD reimburses the OSE for monthly expenses incurred. The funds for the PVACD are derived from a levy of lands from within the district.

## METERING PROGRAM

One hundred forty four meters were found inoperative during the 2014 irrigation season. Based on a total of 1548 (primary)\*\* meters installed on irrigation, feed pen, dairy, and Hagerman Canal wells, this is 0.90% as compared to 15.3% found inoperative in 2013. Each meter was read an average of 6.0 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 2014 irrigation season are listed as followed:

MAKE OF METER	TOTAL OF MAKE	% OF TOTAL	TOTAL IN-OP	% MAKE IN-OP	% OF TOTAL INSTALLED
McCROMETER	1344	87.0	138	10.0	0.90
ROCKWELL/SENSUS	127	8.0	6	0.5	0.00
MISCELLANEOUS	77	5.0	0	0.0	0.0
TOTALS	1548	100	144		0.90

Adjustments in the amount of water diverted through inoperative meters for 2014 totaled 1249.03 acre-feet, where 510.64 acre-feet was Artesian underground water and 738.39 acre-feet was Shallow underground water diverted for irrigation use.

The problem of having a large percentage of the water meters inoperative at the onset of spring pumping remains. Primary meters are being maintained, repaired and/or replaced by field personnel of the PVACD.

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\*\* Primary meters are meters the PVACD will repair or replace in the field.

## **CHANGES IN THE ADJUDICATION DECREE**

There were no changes in the Adjudication Decree during the 2014 water year.



## **VIOLATIONS/ACTIONS**

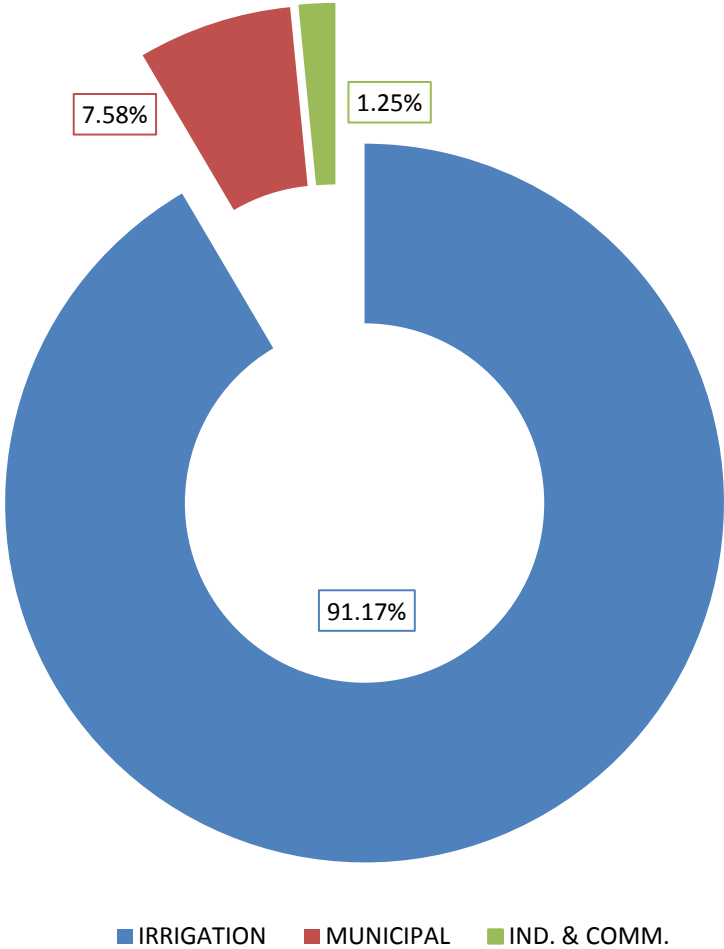
There were **No** instances of overuse in 2014.

## **ACCOUNTING PROCEDURE REVISION**

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

**PERCENT OF USE FOR IRRIGATION, COMMERCIAL, AND INDUSTRIAL**

# Water useage for 2014



## USE OF WATER IN THE ROSWELL BASIN IN 2014

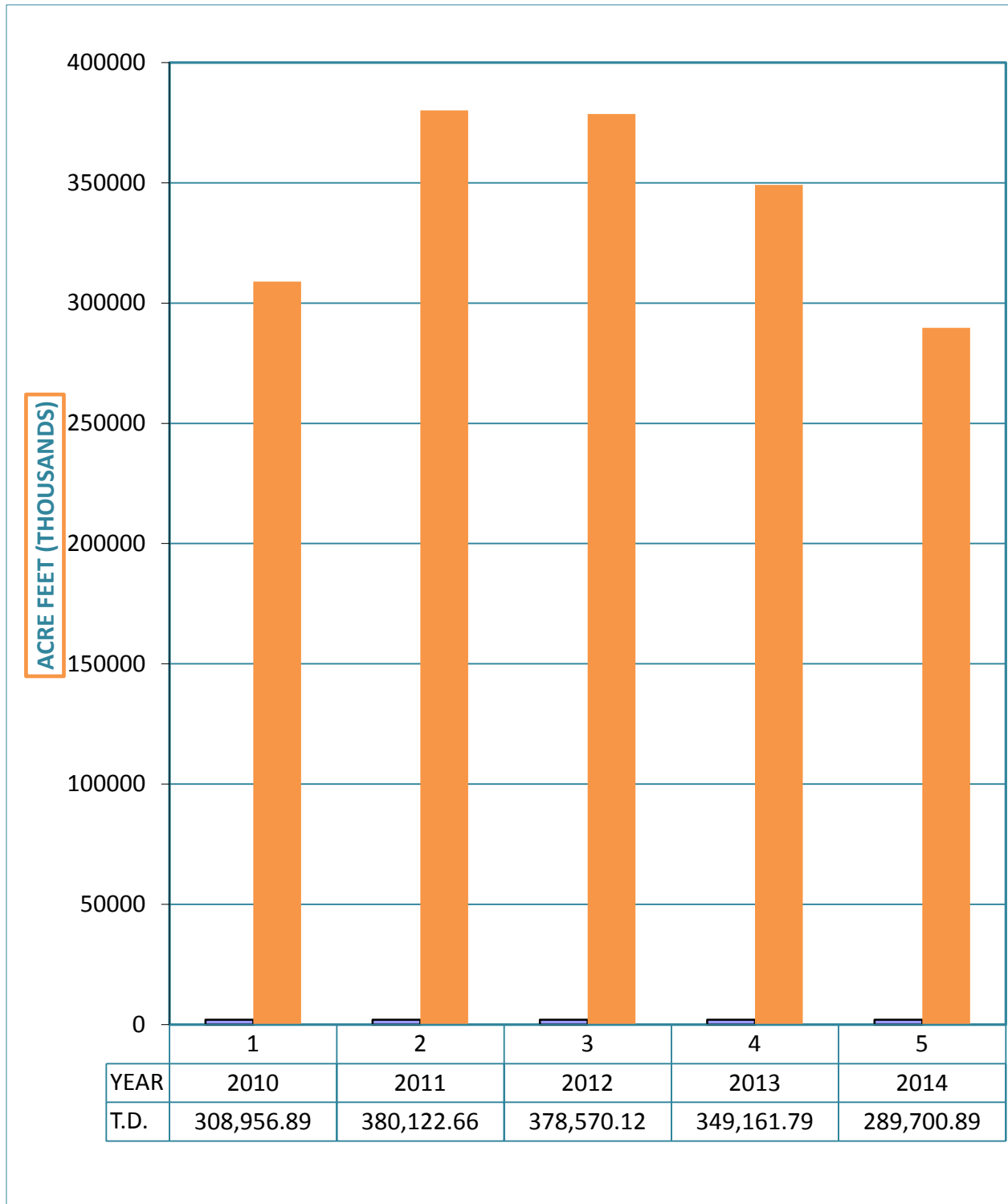
The total water diverted in the Roswell Ground Water Basin for the water year 2014 (November 1, 2013 – October 31, 2014) under the administrative jurisdiction of the Roswell Basin Water Master was 289,700.89 acre-feet. Under the decree for adjudicating water rights in the basin, discrete five-year periods were set-up for accounting of the metered water. The third year of the tenth five-year period was 2013.

Of the total diversion, 210,516.13 acre-feet (72.7%) was from the Artesian source, 76,589.17 acre-feet (26.4%) was from the Shallow source and 2595.59 acre-feet (0.9%) was diverted from combined underground and surface sources primarily under the Hagerman Canal and the Rio Hondo.

Irrigation use accounted for 91.17% of the total diverted, Municipal type use accounted for 7.58% and Miscellaneous, Industrial and Commercial uses accounted for the remaining 1.25%. The irrigation use on 118,530.84 equivalent water right acres (acres as originally adjudicated) permitted an average diversion of 2.70 acre-feet per acre for the basin as a whole varying from a high of 2.53 acre-feet per acre, in the Dexter - Hagerman area to a low of 0.98 acre-feet per acre in the Lakewood – Seven Rivers Area.

The equivalent acreage figures and diversion figures do not include unmetered stock and domestic uses or water right acreage retired from irrigation under the program of the PVACD. There were eight hundred twenty seven farming units.

## FIVE YEAR COMPARISON OF TOTAL DIVERSION



## ANNUAL DIVERSION VALUES FROM 1967 – PRESENT

TABULATION OF ANNUAL WATER DIVERSION						
1967 TO PRESENT						
YEAR	IRRIGATION	IRRIGATION	ACRE FEET	MUNICIPAL	INDL./COML.	TOTAL
	ACRE FEET	EQ. AC.	PER ACRE	ACRE FEET	ACRE-FEET	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	IRRIGATION	ACRE FEET	MUNICIPAL	INDL./COML.	TOTAL
	ACRE FEET	EQ. AC.	PER ACRE	ACRE FEET	ACRE-FEET	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	IRRIGATION	ACRE FEET	MUNICIPAL	INDL./COML.	TOTAL
	ACRE FEET	EQ. AC.	PER ACRE	ACRE FEET	ACRE-FEET	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	318,906.87	112,822.24	2.83	24,236.01	4,655.21	347,798.09
2010	281,768.05	113,156.44	2.49	22,767.73	4,421.11	308,956.89
2011	347,523.28	115,624.74	3.01	27,823.83	4,775.55	380,122.66
5-YEAR AVG.	311,125.61	113,770.89	2.73	23,664.45	4,766.29	339,556.35
2012	346,477.82	118,661.20	2.92	26,201.48	5,890.82	378,570.12
2013	319,938.55	118,631.50	2.70	24,686.17	4,537.07	349,161.79
2014	264,132.42	118,530.84	2.23	21,953.72	3,614.75	289,700.89
2015						
2016						
5-YEAR AVG.						
2017						
2018						
2019						
2020						
2021						
5-YEAR AVG.						
2022						
2023						
2024						
2025						
2026						
5-YEAR AVG.						



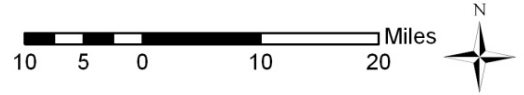
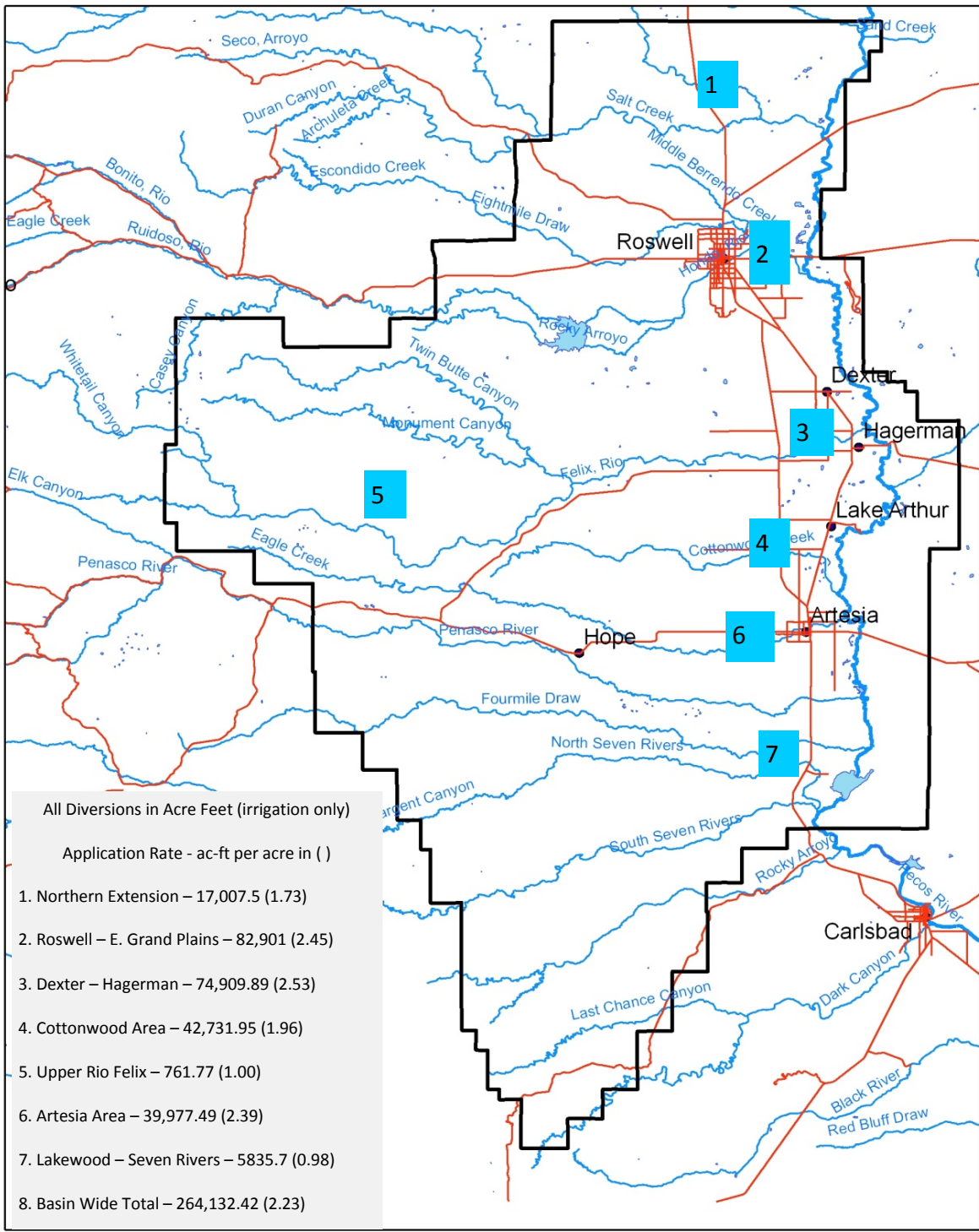
## MUNICIPAL DIVERSION FOR 2014

MUNICIPAL & MUNICIPAL TYPE USE	PUMPAGE IN ACRE-FEET			REMARKS
	SHALLOW	ARTESIAN	TOTAL	
ROSWELL	0.00	12,888.23	12,888.23	
DEXTER	757.11	501.39	1,258.50	
HAGERMAN	0.00	449.44	449.44	
LAKE ARTHUR	2.05	83.25	85.30	
ARTESIA	0.00	4,521.30	4,521.30	
HOPE	0.00	50.16	50.16	
CO OPS	0.00	2,255.48	2,255.48	
DOMESTIC UTILITIES	30.72	303.47	334.19	
SCHOOL SYSTEMS	13.10	98.02	111.12	DEXTER & ROSWELL
TOTAL MUNICIPAL USE	802.98	21,150.74	21,953.72	

## COMMERCIAL AND INDUSTRIAL USE 2014

	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.)	32.12	0.00	32.12	Farm Connected
DAIRIES (F. C.) **	10,199.85	28,023.58	38,223.43	**Included in IRR. Total
DAIRIES ( N. F. C. )	300.57	579.00	879.57	Not Included in IRR. Total
<b>TOTALS</b>	<b>332.69</b>	<b>579.00</b>	<b>911.69</b>	
MISC. INDUSTRIAL & COMMERCIAL	SHALLOW	ARTESIAN	TOTAL	
CHAVES COUNTY	1,834.24	77.71	1,911.95	
EDDY COUNTY	16.71	774.40	791.11	
<b>TOTALS</b>	<b>1,850.95</b>	<b>852.11</b>	<b>2,703.06</b>	
<b>TOTAL ALL COML. &amp; INDUST.</b>	<b>2,183.64</b>	<b>1,431.11</b>	<b>3,614.75</b>	
<b>TOTAL ALL MUNICIPAL (pg.17), COMMERCIAL AND INDUSTRIAL USE</b>	<b>2,986.62</b>	<b>22,581.85</b>	<b>25,568.47</b>	<b>** EXCLUDES FARM CONNECTED DAIRIES</b>

## MAP INDICATING AREAS OF IRRIGATION USE



## BREAKDOWN OF IRRIGATION BY AREA 2014

DESCRIPTION	RIGHT IN ACRE-FEET	DIVERSION ACRE FEET				APP. RATE
		SURF	SHALLOW	ARTESIAN	TOTAL	
NORTHERN EXTENSION	29,485.16		0.00	17,007.50	17,007.50	1.73
ROSWELL - EAST GRAND PLAINS	101,424.35		21,689.85	61,211.33	82,901.18	2.45
DEXTER - HAGERMAN	88,991.00	2,595.59	26,148.68	46,165.62	74,909.89	2.53
HAGERMAN IRR. COMPANY	24,996.21		1,691.23	5,954.24	7,645.47	0.92
NON SUPPLEMENTAL CANAL USE		4,486.99			4,486.99	
PECOS RIVER AUGMENTATION AT LAKE ARTHUR					0.00	
COTTONWOOD AREA	65,298.70	0.00	12,114.02	30,617.93	42,731.95	1.96
	AC/FT incl. P.R.A.					
UPPER RIO FELIX	2,280.39	0.00	0.00	761.77	761.77	1.00
ARTESIA AREA	50,200.96		11,991.77	27,985.72	39,977.49	2.39
PECOS RIVER AUGMETATION AT SEVEN RIVERS					6.94	
LAKWOOD - SEVEN RIVERS	17,911.97		1,658.23	4,184.41	5,835.70	0.98
	AC/FT incl. P.R.A.					
TOTAL ALL AREAS	355,592.52	7,082.58	73,602.55	187,934.28	264,132.42	2.23
(DOES NOT INCLUDE H.I.C.)						

## APPROVED BUDGET FOR 2014

FY 2014 Roswell Water Master Operating Budget

Employees:

David Thomas  
Robert Todd  
Aaron Buffington  
Azucena Ramirez  
Eric Boyda

<u>Object Item</u>	<u>Amount</u>
Permanent Position F/T	239,400.00
Group Insurance	26,200.00
Retirement	37,100.00
FICA	17,100.00
Workers Compensation	0.00
Retiree Health Care Act	4,500.00
Salaries and Benefits:	324,300.00
Contractual Services	0.00
I/S Meals and Lodging	2000.00
Gas & Oil Transportation	10,700.00
State Transportation Pool	10,500.00
Employee Training	0.00
Office Supplies	3,000.00
Field Supplies	4,800.00
IT Inventory	1,300.00
IT Maintenance	1,300.00
Postage & Mail Service	5,100.00
Rent/Land & Buildings	21,700.00
Telecommunications	4,000.00
Other Costs	64,400.00
Grand Total:	388,700.00

## EXPENDITURES FOR 2014

### ROSWELL BASIN WATER MASTER EXPENDITURES FOR CALENDAR YEAR 2014 JANUARY - DECEMBER 2014

	January - June 2014	July - December 2014	Total
Salaries/Benefits	96,881.20	134,283.81	231,165.01
Travel	0.00	0.00	0.00
Vehicle Leases/Gasoline	7,566.60	5,557.08	13,123.68
Supplies - Office/Field Inv. Exempt	1,141.25	1,139.39	2,280.64
Postage & Mail/Printing	4,000.00	0.00	4,000.00
Rent	9,078.61	12,861.38	21,939.99
Telecommunications	546.99	550.42	1,097.41
Data Processing Equipment	7,767.88	0.00	7,767.88
Total Expenditures	<u>126,982.53</u>	<u>154,392.08</u>	<u>281,374.61</u>

## SUMMARY

Metered use of water during 2014 resulted in an average use, for irrigation purposes, of 2.23 acre-feet per water right acre. The total quantity diverted for all uses was the second lowest since metering began in 1967.

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