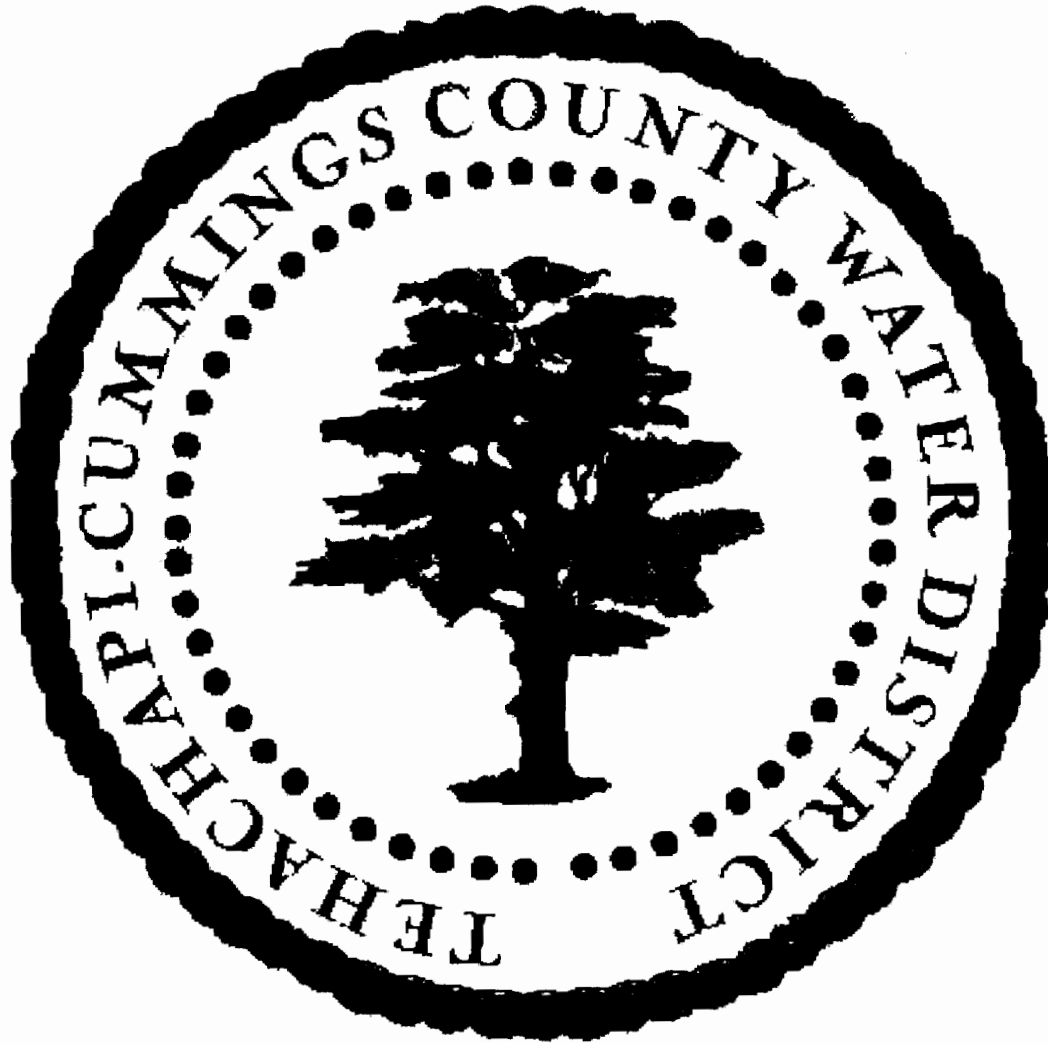


**REPORT OF TEHACHAPI-  
CUMMINGS COUNTY WATER  
DISTRICT AS WATERMASTER FOR  
CALENDAR YEAR 2008**



**THIRTY-FOURTH ANNUAL  
WATERMASTER REPORT  
FOR CUMMINGS BASIN**

**ENDORSED**

**RECEIVED**

APR 30 2009

SUPERIOR COURT  
METROPOLITAN DIVISION

SUPERIOR COURT OF THE STATE OF CALIFORNIA  
FOR THE COUNTY OF KERN

TEHACHAPI-CUMMINGS COUNTY )  
WATER DISTRICT, a Body )  
corporate and politic, )

Plaintiff )

vs. )

FRANK M. ARMSTRONG, et. al., )

Defendants. )

No. 97209

REPORT OF TEHACHAPI-CUMMINGS  
COUNTY WATER DISTRICT AS  
WATERMASTER FOR CALENDAR  
YEAR 2008

Cummings Basin  
Thirty-Fourth Report

## I. PRELIMINARY STATEMENT

The case of "Tehachapi-Cummings County Water District, a body corporate and politic, Plaintiff, vs. Frank M. Armstrong, et al., Defendants", Kern County Superior Court No. 97209, went to trial in December of 1970. The case was duly and regularly continued further for trial to March 1, 1971. The matter was further continued for the remainder of trial to June 14, 1971. Trial continued through June 22, 1971. A Judgment was filed on March 6, 1972, whereupon defendant, State of California and its subsidiary departments and agencies appealed. A partial reversal followed by the Court of Appeal, 49 Ca. App. 3rd, 992 (1975), as modified in 50 Cal. App. 3rd, 528 A (1975), and has been remanded back to the trial court. Further hearing before the trial court was held on April 9, 1976. The April 9 hearing was continued to allow the parties time to review data and make further preparation.

Under the provisions of said Judgment, which appointed the Tehachapi-Cummings County Water District as Watermaster for the Cummings Basin, it is uncertain when the Watermaster Report is due with the Court. The Findings of Fact indicate that the period of administration and enforcement of the Judgment should be on a water year (October 1 through September 30). This report is therefore, submitted in order to bring the history of Cummings Basin up to date as nearly as practicable.

Due to the method of collection of available data, a calendar year appeared to be a more desirable time period for administration and enforcement of the Judgment. The Watermaster asked the Court to amend this provision of the Findings of Fact to place administration on a calendar year basis.

## II. THE CUMMINGS BASIN

### DESCRIPTION OF THE CUMMINGS GROUNDWATER BASIN

The Cummings groundwater basin surface is generally the Cummings Valley floor, bordered on the south by the Tehachapi Mountains, on the north by the Sierra Nevada, with low lying ridges connecting these two ranges on the east and west sides of the basin. The Cummings Basin is generally elongated in a northeasterly manner, approximately 6 miles at the longest point and 4 miles at the widest point.

Inflow of surface and subsurface water from the surrounding watershed including Cummings Creek replenishes the basin. Surface inflow from Chanac Creek draining a portion of the Brite Valley also flows into the Cummings Basin. Surface outflow is by Chanac Creek to the west. Subsurface outflow from the basin does not occur to any appreciable extent due to the rock outcroppings in the channel of Chanac Creek.

The Cummings groundwater basin may be pictured as a bowl, the bottom and sides of which are composed of impervious materials. The bowl is filled with heterogeneous pervious alluvium deposited through geological time by the streams carrying eroded materials from the surrounding water shed areas.

Groundwater is stored within the alluvium of the basin. The average annual safe yield of the groundwater within the basin was established in the Judgment of the Cummings Basin to be 4,090-acre feet as of the time of trial. Figure 1 is a map of the Cummings Basin as defined in said Judgment as originally entered.

## HISTORY OF WATER MANAGEMENT PROGRAM

The Tehachapi-Cummings Water Conservation District was formed in 1961 to carry out basin groundwater and watershed studies. This was a continuation of the Tehachapi Soil Conservation District's efforts in seeking solutions to water shortages within the area.

The Tehachapi-Cummings County Water District was formed February 16, 1965, by popular vote within the district, replacing the Tehachapi-Cummings Water Conservation District. A Citizens Advisory Committee composed of a cross section of community residents was established. This committee worked for more than a year on the basic solution to groundwater overdraft within the three major groundwater basins of the district.

On May 16, 1966, the Citizens Advisory Committee recommended to the Board of Directors of the Tehachapi-Cummings County Water District that three separate adjudication actions be filed on the Tehachapi, the Cummings and the Brite Valley groundwater basins. The purpose of these actions was to establish groundwater rights of all parties and to establish a physical solution and a groundwater management program in each basin when necessary to prevent further damage to the basin and also to allow the integration of imported supplemental water with local groundwater supplies. Plaintiff, Tehachapi-Cummings County Water District filed these actions in the Superior Court, on October 3, 1966.

On December 16, 1966, the Tehachapi-Cummings County Water District Board of Directors signed two contracts with the Kern County Water Agency for entitlement to State project water. One contract for an annual entitlement of 5,000 acre feet of agricultural water and the other for an annual entitlement of 15,000 acre feet of municipal and industrial water.

On June 8, 1971, a special district election was held with 65% of the eligible voters casting ballots. A federal loan under Public Law 984, in the amount of \$6.5 million, and a general obligation bond totaling \$2.5 million were approved by a 91% majority. The purpose of this financing was to construct an imported water system to convey State water to the Tehachapi-Cummings County Water District.

Construction on the water project began in May 1972. On November 4, 1973, the first imported water was pumped from the State Aqueduct near the A. D. Edmonston Pumping Plant through Cummings Valley and into the Tehachapi area. Project water has been delivered within the Cummings Basin during each season since water first arrived within the Tehachapi-Cummings County Water District.

### III. CLAIM BY TEHACHAPI-CUMMINGS COUNTY WATER DISTRICT TO RETURN FLOW FROM IMPORTED WATER

At an adjourned regular meeting on June 13, 1973, the Board of Directors of the Tehachapi-Cummings County Water District adopted its Resolution No. 8-73 entitled "A Resolution of the Board of Directors of Tehachapi-Cummings County Water District Establishing Rates for Water Delivered by Said District, Establishing Other Charges and Rules and Regulations." Part K thereof provides in full as follows:

Part K. DISTRICT'S RIGHT IN WASTE, SEEPAGE AND RETURN FLOW. District has and claims all right, title and interest in and to all return flow into any groundwater basin within District's boundaries resulting from water imported by District, along with the right to later recapture or otherwise utilize the same. The foregoing extends to return flow whether from waste or seepage before any delivery of water by the District, from waste or seepage thereafter, and from percolation after or as a result of use or reuse of imported waters by any water user or other person. District hereby expresses its intention to later recapture or otherwise utilize such return flow. Nothing herein shall prevent any person from engaging in drainage or other activities to protect his land or the use thereof from return flow which otherwise would injure or would threaten injury to the enjoyment or utilization of such land.

Said Part K of said Resolution remains in full force and effect, and said District's claim reflected in said Part K was affirmed by minute motion of its Board of Directors at their regular meeting held on March 17, 1976.

IV. EXTRACTION BY TEHACHAPI-CUMMINGS  
COUNTY WATER DISTRICT OF  
RETURN FLOWS FROM IMPORTED WATER

Pursuant to Part K of Resolution 8-73, the District has exercised its right to extract from the Cummings Basin return flows from State Water Project water imported by the District. As noted in the April, 1991 Watermaster Report, the District extracted approximately 436 acre feet between May 1, 1988 and May 1, 1990 by means of Well #T32S R32E S31 B1, leaving approximately 1,779 acre feet of return flows from imported SWP water in storage in Cummings Basin as of December 31, 1990.

By Resolution No. 14-92, adopted by the Board of Directors of Tehachapi-Cummings County Water District on December 22, 1992, a new Section 3 was added to Part C of Resolution No. 15-76, providing as follows:

“Section 3. Amendment of Term M & I Agreements to Provide for Substitution of Return Flows for Imported Water. The Board of Directors of the District hereby find and determine that substantial savings in treating imported water can be realized by retail purveyors of water purchased pursuant to Term M & I agreements from the District if the District allows such purveyors to pump return flows from imported water which heretofore has percolated into the groundwater basins within the District. Provided that sufficient District return flows are in storage and pumping of same by retail purveyors will not adversely affect other pumpers of groundwater exercising valid rights, the District in its discretion may allow such purveyors to pump District return flows in lieu of imported water provided that such purveyors and the District execute an Amendment to their Term M & I Agreement substantially in the form attached hereto as Appendix 1C.”

As provided in Section 3 of Part C of Resolution No. 15-76, the District and Stallion Springs Community Services District (SSCSD) amended SSCSD's Term M & I Agreement effective July 15, 1993. SSCSD began purchasing return flow and/or artificially recharged SWP water (conjunctive use). Table 5 summarizes the storage and extraction of return flows from imported water.

**TABLE 1. IRRIGATED CROP SURVEY FOR CUMMINGS BASIN  
DURING THE PERIOD OF 2003 THROUGH 2008 (IN ACRES)**

<u>IRRIGATED CROPS</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
Alfalfa Hay	66	100	100	0	0	255
Apples	63	66	50	43	46	68
Broccoli	242	235	256	272	361.5	236
Mixed Lettuce	252	18	225.5	25	0	0
Carrots	0	0	0	0	550	47
Cauliflower	0	0	0	0	0	0
Celery	0	0	0	0	0	0
Oats	0	0	0	0	0	0
Grain Hay	0	0	0	0	0	0
Home Gardens	8	13	15	12	26	6
Home Orchards	0	0	0	0	0	6
Lilacs	7	13	16	16	3	19
Lettuce	0	222	66	357.5	326	284
Non-bearing Apples	0	0	0	0	0	0
Nurseries	0	0	0	0	0	0
Onions	73	0	0	20	0	231
Peaches	2	4	4	4	4	0
Potatoes	6	43	153.5	152	10	0
Raspberries	0	0	0	0	0	0
Spinach	36	0	0	0	0	0
Wine Grapes	5	5	5	5	5	9
Turf Sod	1,796	1,449	1,478	1,416	1,107.5	430
Mixed Vegetables	362	339	358	418	470.5	471
<b>TOTALS</b>	<b>2,918</b>	<b>2,507</b>	<b>2,727</b>	<b>2,740.5</b>	<b>2,909.5</b>	<b>2,062</b>

**TABLE 2. IMPORTED WATER DELIVERIES WITHIN  
CUMMINGS BASIN DURING 2003 THROUGH 2008 (IN ACRE FEET)**

<u>YEAR</u>	<u>AGRICULTURE</u>	<u>MUNICIPAL/ INDUSTRIAL</u>	<u>CONJUNCTIVE USE</u>	<u>TOTAL</u>
2003	3,944	445	1,142	5,531
2004	4,251	350	1,389	5,990
2005	3,742	222	848	4,812
2006	3,610	200	1,485	5,295
2007	3,861	245	1,843	5,949
2008	2,985	254	1,320	4,559

TABLE 5. RETURN FLOWS STORED, ARTIFICIAL REPLENISHMENT AND EXTRACTIONS

YEAR	RETURN FLOWS & ARTIFICIAL REPLENISHMENT IN STORAGE AS OF JANUARY 1 DELIVERED	IMPORTED WATER ARTIFICIALLY REPLENISHED	TOTAL RETURN FLOWS & ARTIFICIAL REPLENISHMENT (15% OF COL. 2 + 100% OF COL. 3)	RETURN FLOWS AND ARTIFICIAL REPLENISHMENT EXTRACTIONS			TOTAL	RETURN FLOWS & ARTIFICIAL REPLENISHMENT IN STORAGE AS OF 31-DEC
				BY SSCSD	BY BVCSO	BY CCI		
1989	1,504	1,846	277	-	-	238	238	1,543
1990	1,543	1,964	295	-	-	59	59	1,779
1991	1,779	2,051	308	-	-	-	-	2,087
1992	2,087	2,202	330	-	-	-	-	2,417
1993	2,417	2,030	305	75	-	-	75	2,647
1994	2,647	2,126	319	102	-	-	102	2,864
1995	2,864	2,080	384	26	-	16	42	3,206
1996	3,206	2,988	489	138	-	-	138	3,557
1997	3,557	3,193	520	120	158	-	278	3,799
1998	3,799	2,477	744	47	55	-	102	4,441
1999	4,402	4,058	717	90	221	-	311	4,808
2000	4,808	4,036	686	122	415	-	537	4,957
2001	4,957	2,659	1,100	123	549	316	988	5,069
2002	5,069	1,046	917	139	723	318	1,180	4,806
2003	4,728	4,389	1,470	124	558	460	1,142	5,056
2004	5,056	4,601	1,780	194	660	535	1,389	5,447
2005	5,447	3,964	1,540	196	652	657	1,505	5,482
2006	5,482	3,810	2,225	191	699	595	1,485	6,222
2007	6,222	4,106	1,886	190	776	877	1,843	6,265
2008	6,265	3,239	1,490	169	723	428	1,320	6,435

**TABLE 3. ESTIMATED PUMPING FROM CUMMINGS BASIN  
DURING THE PERIOD OF 2003 THROUGH 2008**

<u>TYPE OF USE</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
Agriculture	2,728	2,820	2,604	2,848	2,673	3,022
State of California	565	565	565	565	565	565
Other	306	278	339	348	319	321
<b>TOTALS</b>	<b>3,599</b>	<b>3,663</b>	<b>3,508</b>	<b>3,761</b>	<b>3,557</b>	<b>3,908</b>

**TABLE 4. ANNUAL RAINFALL IN CUMMINGS BASIN  
FOR YEAR 2003 THROUGH 2008 (IN INCHES)**

<u>MONTH</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
January	.20	.71	3.33	.55	1.73	1.80
February	2.87	4.43	2.96	.38	2.32	3.01
March	1.13	1.04	2.35	2.00	.98	.46
April	1.97	.02	2.15	1.27	1.74	.61
May	.40	0	1.55	0	0	.25
June	0	0	0	0	0	0
July	.52	0	0	.30	0	.03
August	.17	0	.05	0	0	0
September	.20	0	.10	0	.45	0
October	.07	2.90	1.70	.02	.33	.20
November	.36	.10	.85	.70	.15	2.32
December	1.22	2.62	1.07	.84	1.25	1.72
<b>TOTALS</b>	<b>9.11</b>	<b>11.82</b>	<b>16.11</b>	<b>6.06</b>	<b>8.95</b>	<b>10.40</b>

RAIN GAUGE LOCATION: NEAR THE MOST SOUTHERLY SOUTHWEST  
CORNER OF THE CUMMINGS ORCHARD

## V. CUMMINGS BASIN KEY WELLS

In an attempt to monitor the groundwater level in Cummings Basin in such a manner that it could be observed when groundwater should in the future spill from the basin via Chanac Creek, a key well for monitoring purposes is being considered by the District and the State of California. This well will be known as the Cummings Basin Key Well, State Well No. 35N1. A copy of an updated hydrograph on this well is included herein.

## VI. CUMMINGS BASIN CONJUNCTIVE USE PROJECT

In 1996, the Tehachapi-Cummings County Water District adopted Resolution No. 3-96 adding a new Section 4 to Part C of Resolution No. 15-76, authorizing the pumping of recharged imported water in lieu of surface delivery of imported water. Section 4 provides as follows:

“Section 4. Amendment to Term M & I Agreements to Provide Substitution of Recharged Water for Surface Deliveries of Imported Water. The Board of Directors of the District hereby finds and determines that substantial savings in treating imported water can be realized by retail purveyors of water purchased pursuant to Term M & I agreements from the District if the District allows such purveyors, in lieu of taking surface deliveries of imported water, to pump imported water which the District heretofore has spread in recharge areas and allowed to percolate into the ground water basins within the District (“recharge water”). Provided that sufficient quantities of recharge water are in storage and pumping of same by retail purveyors will not adversely affect other pumpers of ground water exercising valid rights, the District in its discretion may allow such purveyors to pump recharge water in lieu of taking surface deliveries of imported water on condition that such purveyors and the District execute an amendment to their Term M & I Agreement substantially in the form attached hereto as Appendix D.

The Tehachapi-Cummings County Water District constructed groundwater recharge facilities, which enable the District to store imported State Water Project water in the Tehachapi and Cummings groundwater basins for subsequent extraction and beneficial use. This banking program has significantly improved both water supply and quality in the Cummings Basin and has helped insure adequate local water supplies during drought years. The District began recharge operations during 1995.

The Bear Valley Community Services District (BVCS D) constructed new wells in the Cummings Basin and installed a transmission pipeline to convey recovered State Water Project water for delivery within the BVCS D water service area. The BVCS D began its Cummings Basin extraction of imported water in June 1997. The groundwater extracted from the Cummings Basin under this recharge/recovery arrangement is imported State Water Project water and is not a portion of the native safe yield.

In 2004, the District's new lateral extending north from its Mainline was fully operational. SWP water deliveries to the northern end of Cummings Valley helped correct a localized cone of depression which has formed in this area. In addition, the District assisted Bear Valley CSD, CCI, Grimmway Farms and Tehachapi Turf to enter into an In Lieu Agreement whereby the farmers have agreed to use SWP water delivered through the District's new lateral in lieu of groundwater and CCI and BVCS D have agreed to pay the farmers the differential in costs.

In 2004, the District continued to acquire right of way needed for the Cummings Valley Lateral Modifications Project, a new 3.8 mile pipeline connecting the District's Mainline in Brite Valley with the District's new lateral in Cummings Valley, thereby eliminating the need for an additional pump plant. A turnout will be installed where the new line crosses Chanac Creek to enable the District to increase the amount of SWP water discharged into Chanac Creek for recharge of the Cummings Basin.

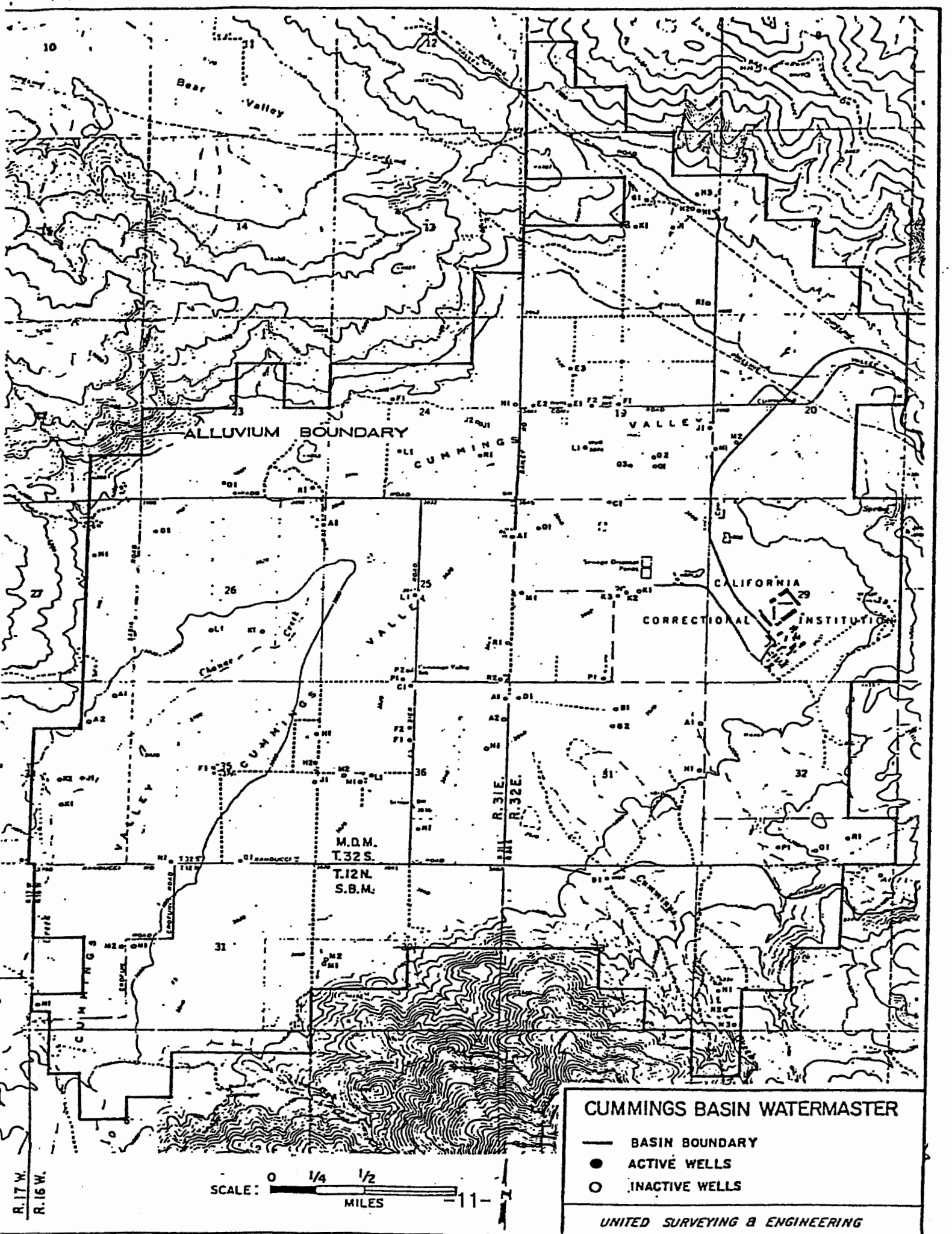
The District continued to monitor the California Department of Corrections' response to remediation orders of the California Regional Water Quality Control Board, Central Valley Region, with respect to the MTBE contamination at CCI, Tehachapi.

The District's consultants, Fugro West, Inc. and Etic Engineering, completed their draft Groundwater Modeling Study for the Cummings Basin as part of the Watermaster's ongoing program to better understand the geohydrology of the Cummings Basin.

In 2004, the District completed construction of additional recharge basins on 20 acres in the Chanac Creek fan immediately west of State Highway 202 acquired by the District in 2003. These additional recharge facilities, together with the District's recharge area along Chanac Creek upstream of State Highway 202 and recharge area on the Cummings Creek Fan in the southeast corner of the Basin now provide the District with ample capability to recharge far more water than required by the District's recharged SWP water customers, namely Stallion Springs CSD, Bear Valley CSD and CCI, Tehachapi.

In 2008, the Term M&I Agreement with the California Department of Corrections and Rehabilitation (CDC&R) was amended to reflect the fact that CCI, Tehachapi is pumping return flows of SWP water either directly or indirectly recharged back into the Basin, in lieu of surface deliveries of SWP water, which CCI no longer can receive since CCI's water treatment plant is inoperable.

In December 2006, the District and the CDC&R executed an agreement whereby Corrections agreed to sell to the District, and the District agreed to purchase from Corrections, all tertiary treated disinfected effluent produced from CCI, Tehachapi's upgraded waste water treatment plant, for a term of 25 years from completion of the new plant. The District also adopted Rules and Regulations Governing the Use of Recycled Water.



ALLUVIUM BOUNDARY

CUMMINGS

VALLEY

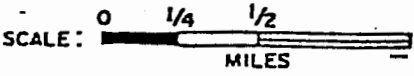
CALIFORNIA  
CORRECTIONAL INSTITUTE

M.D.M.  
T.32S.  
T.12N.  
S.B.M.

**CUMMINGS BASIN WATERMASTER**

- BASIN BOUNDARY
- ACTIVE WELLS
- INACTIVE WELLS

UNITED SURVEYING & ENGINEERING

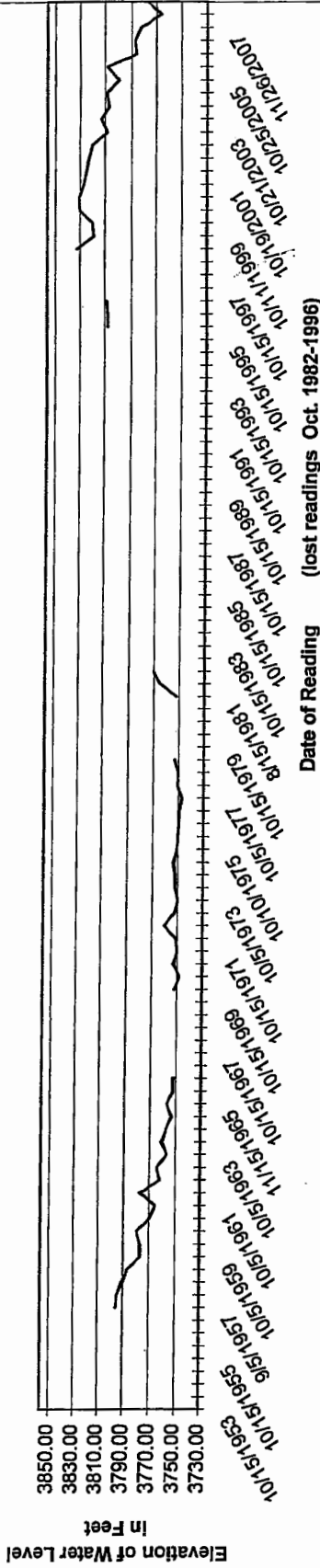


R.17 W.  
R.16 W.

11

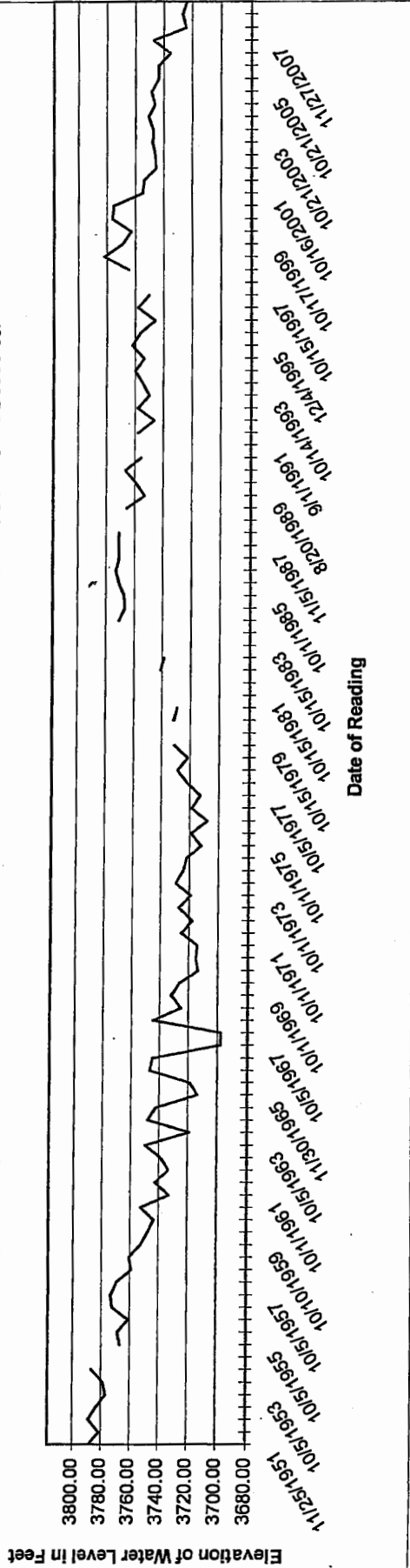
Hydrograph of Well 32S/32E-30K1 (CCI)

Ground Surface Elevation 3856.5 ft.



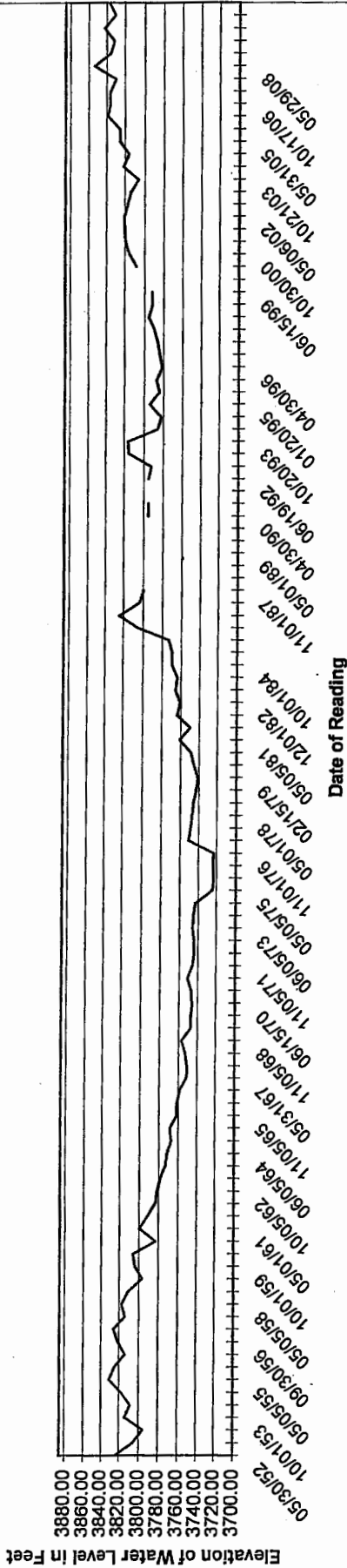
Hydrograph of Well 32S/31E-36M2

Ground Surface Elevation 3817.1 ft.



Hydrograph of Well 32S/32E-20M1

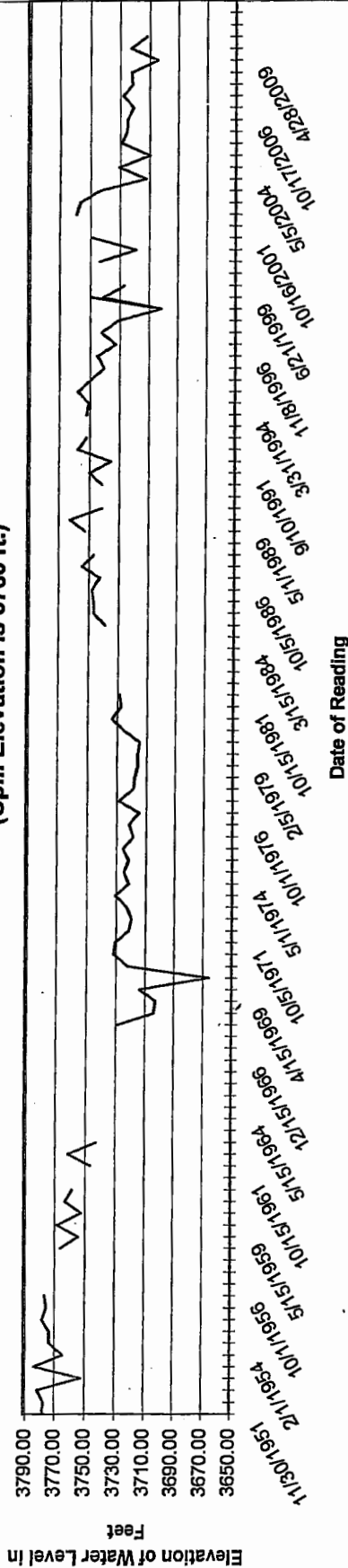
Ground Surface Elevation 3885.5 ft.



Hydrograph of State Well 32S/31E-35N1

Ground Surface Elevation 3791.6 ft.

(Spill Elevation is 3760 ft.)





This Thirty-Fourth annual report is submitted for the Tehachapi-Cummings County Water District as Watermaster for the Cummings Basin.

DATE: April 27, 2009

Assimilation of data and preparation:  
by: Lori A. Bunn, Office Manager

By:

  
\_\_\_\_\_  
Harry M. Cowan, President

  
\_\_\_\_\_  
John A. Martin, General Manager