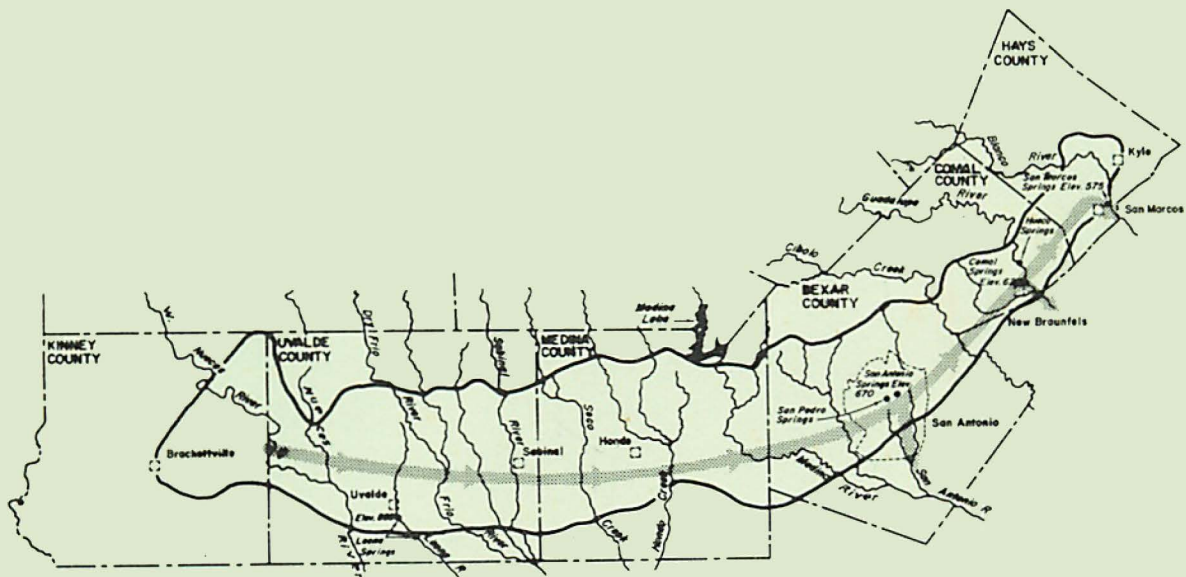


Ground-Water Discharge from the Edwards and Associated Limestones, San Antonio Area, Texas, 1971

Bulletin 29
Edwards Underground Water District
San Antonio, Texas



Prepared in cooperation with the U.S. Geological Survey and the Texas Water Development Board

EDWARDS UNDERGROUND WATER DISTRICT

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San Antonio, Texas 78205

BULLETIN 29

GROUND-WATER DISCHARGE FROM THE EDWARDS AND ASSOCIATED

LIMESTONES, SAN ANTONIO AREA, TEXAS, 1971

Compiled by

Celso Puente

United States Geological Survey

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CONTENTS

	Page
Abstract - - - - -	3
Introduction --- - - - -	3
Methods of investigation - - - - -	4
Ground-water discharge - - - - -	4
References - - - - -	7

TABLE

Table 1. Estimated discharge from the Edwards and associated limestones in the San Antonio area, 1971 - - - - -	6
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ABSTRACT

The estimated total well and spring discharge from the Edwards and associated limestones in the San Antonio area during 1971 was 679,500 acre-feet, or about seven percent less than 1970. The total discharge was 26 percent greater than the average for 1934-70.

About 60 percent of the total discharge came from wells, and approximately two-thirds of this discharge was from wells in Bexar County. Well discharge in 1971 was 24 percent greater than in 1970, while springflow decreased by about 30 percent.

Deficient rainfall during the spring and early summer of 1971 was mainly responsible for the increased demand for water from wells and the decrease in the discharge of the springs.

INTRODUCTION

Records of ground-water discharge from the Edwards and associated limestones in the San Antonio area during 1971 are summarized in this report. The compilation of these basic records is part of a continuing hydrologic investigation by the U. S. Geological Survey in cooperation with the Edwards

Underground Water District and the Texas Water Development Board. Previous reports are given in the list of references.

METHODS OF INVESTIGATION

The spring discharge was compiled from records of gages operated by the U. S. Geological Survey at the points of discharge. Pumpage for agriculture was estimated from power consumption and irrigated acreage. Records of the annual canvass of pumpage in the San Antonio area by the Texas Water Development Board were used to compile municipal, military, and industrial usage.

GROUND-WATER DISCHARGE

The estimated discharge from the Edwards and associated limestones during 1971 is given in table 1. The discharge by springs was from San Marcos Springs in Hays County, Comal Springs in Comal County, San Antonio and San Pedro Springs in Bexar County, and the Leona River Springs in Uvalde County. The recorded discharge for Leona River Springs includes underflow through the gravel below the Springs.

Major discharge by wells was from Bexar, Uvalde, and Medina Counties, while the major springflow was from Comal and Hays Counties. Wells in Bexar County supplied water for municipal and military use. Other wells in Bexar County and most of the large wells in Uvalde and Medina Counties supplied the irrigation needs for an estimated 55,000 acres. The

remaining discharge, principally from wells in Bexar County, was for industrial, domestic, stock, and miscellaneous purposes.

The 1971 estimated total well and spring discharge from the Edwards and associated limestones was 679,500 acre-feet. About 60 percent of the total discharge came from wells, and approximately two-thirds of this discharge was from wells in Bexar County. Well discharge in 1971 was 24 percent greater than in 1970, while springflow decreased by about 30 percent.

The total discharge from wells and springs was about seven percent less than 1970. Compared to the 1934-70 average, the total discharge was 26 percent greater.

Deficient rainfall during spring and early summer of 1971 was mainly responsible for the increased demand for water from wells.

Estimated discharge from the Edwards and associated limestones
in the San Antonio area, 1971
(in millions of gallons per day)

<u>County</u>	<u>Springs</u>	<u>USE</u>				<u>TOTAL</u>	
		<u>Municipal and Military</u>	<u>Agri- culture</u>	<u>Industry</u>	<u>Domestic, stock & misc.</u>	<u>Million gallons per day</u>	<u>Thousand acre-feet per year</u>
Kinney	-	-	-	-	0.2	0.2	0.2
Uvalde	17.8	2.8	81.7	-	2.0	104.3	116.8
Medina	-	1.8	26.4	0.1	.6	28.9	32.4
Bexar	1.8	159.2	32.5	19.1	22.0	234.6	262.8
Comal	141.9	$\frac{19.1}{178.3}$ 6.2	.6	1.0	.5	150.2	168.2
Hays	82.0	5.2	1.1	-	.2	88.5	99.1
Total million gallons per day	243.5	175.2	142.3	20.2	25.5	606.7	
Total thousand acre-ft. per year	272.7	196.2	159.4	22.6	28.6		679.5

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