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STATE OF CALIFORNIA
STATE WATER RIGHTS BOARD

In the Matter of Applications 11331, 11332, 11761, 11762 and 11989 by the United States of America, Department of the Interior, Bureau of Reclamation) Sources: Santa Ynez River) Lauro Creek) West Fork Glen) Anne Creek) County: Santa Barbara
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Decision No. D 886

Decided: February 28, 1958

Appearances at Hearing Conducted at Santa Barbara on July 16, 17,
and 18, and at Sacramento on September 5, 1957, by Henry Holsinger,
Chairman, John B. Evans, Member, and W. P. Rowe, Member, State
Water Rights Board:

For the Applicant:

United States of America

John K. Bennett, Assistant
Regional Solicitor, Depart-
ment of the Interior

For the Protestants:

City of Lompoc

Carl B. Kappler, Attorney

Miss Ynez de la Cuesta)
Mrs. Dulce de la C. Jensen)
Henry G. Bodkin)

Henry G. Bodkin, Attorney

For Interested Parties:

Santa Barbara County Water Agency

Francis Price, Attorney

Santa Ynez River Water Conservation
District

Arden T. Jensen, Attorney

U. S. Corps of Engineers

Clyde L. Walker, Chief Legal
Branch, U. S. Corps of Engineers
South Pacific Division

DECISION

Substance of the Applications

The United States of America through its Bureau of Reclamation, Regional Office, Region 2, Sacramento, filed Applications 11331, 11332, 11761, 11762 and 11989 in support of the Cachuma Project in Santa Barbara County, California, as follows:

Application 11331, filed on March 25, 1946, is for a permit to appropriate 100 cubic feet per second from Santa Ynez River by direct diversion year-round and 275,000 acre-feet per annum by storage to be collected between October 1 of each year and June 30 of the following year. Direct diversion and storage are to be effected by Cachuma Dam located within the NW $\frac{1}{4}$ of SW $\frac{1}{4}$ of projected Section 19, T6N, R29W, SBB&M*. Water is to be used for domestic, salinity control and incidental recreational purposes and for irrigation of 61,000 acres net within a gross area of 175,000 acres along the south coastal area of Santa Barbara County within T4 to 8N, R25 to 36W, both inclusive.

Application 11332, filed March 25, 1946, is for a permit to appropriate 50 cubic feet per second from Santa Ynez River by direct diversion year-round and 275,000 acre-feet per annum by storage to be collected between October 1 of each year and June 30 of the following year. Direct diversion and storage under this application will likewise be effected by Cachuma Dam and the water

*Hereinafter all reference to section, township and range are from San Bernardino Base and Meridian (SBB&M).

is to be used for municipal, industrial and incidental recreational purposes within various cities, towns and other municipalities presently in existence or as may be created within the service area heretofore described under Application 11331. Relative to the amount of water to be appropriated, Application 11332 provides as follows:

" . . . The figure of 275,000 acre-feet per annum for temporary storage and later application to beneficial use duplicates the 275,000 acre-feet applied for under Application No. 11331 for irrigation and domestic water because the storage will be used for both municipal and irrigation uses in ways which would not permit segregation without increasing the combined amount of storage applied for."

Application 11761, filed on March 7, 1947, is for a permit to appropriate 15 cubic feet per second from Lauro Creek (also called Diablo Creek) by direct diversion year-round and 500 acre-feet per annum by storage to be collected between October 1 of each year and June 30 of the following year. Direct diversion and storage will be effected by Lauro Dam located within the NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Section 5, T4N, R27W. Water is to be used for domestic purposes and for irrigation of 24,300 acres net within a gross area of 34,500 acres. The application further provides as follows:

"Lauro Reservoir is to be used in conjunction with the South Coastal Conduit to provide regulatory and standby storage primarily for the Goleta County Water District and the City of Santa Barbara. In addition the reservoir will provide, under certain emergency conditions, a source of supply for the Carpinteria Section of the conduit which will serve the Montecito, Carpinteria and Summerland County Water Districts."

Application 11762 is for municipal and industrial purposes, bears the same filing date, and names the same source, amounts to

be appropriated, seasons of diversion and physical works as set forth under Application 11761. Application 11762 describes the place of use as being within the cities and towns of Santa Barbara, Summerland, Montecito, Carpinteria and Goleta, and provides as follows:

"The quantities indicated ... will be the same water applied for under Application 11761 for irrigation and domestic purposes."

Application 11989, filed on July 14, 1947, is for a permit to appropriate 24 cubic feet per second from West Fork Glen Anne Creek by direct diversion year-round and 500 acre-feet per annum by storage to be collected between October 1 of each year and June 30 of the following year. Direct diversion and storage are to be effected by Glen Anne Dam located within the NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Section 35, T5N, R29W. Water is to be used for domestic purposes and for irrigation of 2,570 acres net within a gross area of 5,400 acres comprising a portion of Goleta County Water District. Application 11989 also provides as follows:

"Glen Anne Reservoir, with a year-round normal capacity of 500 acre-feet, is to be used in conjunction with the South Coast Conduit to provide regulatory and standby storage for a portion of the Goleta County Water District. In addition, the reservoir will provide capacity for the conservation of flows which are in excess of the requirements in the South Coastal Conduit downstream from Glen Anne turnout."

Protests

Forty-two protests were filed against Applications 11331 and 11332 by owners of land in the Santa Ynez Valley and by the

City of Lompoc. None of the protestants entered an appearance at the hearing except the City of Lompoc and those represented by Henry G. Bodkin. The latter withdrew their protest (R.T. page 15). No protests are of record against Applications 11761, 11762 and 11989. Although it is unnecessary for the Board to consider individually the protests of those who failed to present evidence at the hearing in support of their claims, the facts alleged by them as summarized herein are of a nature to justify consideration by the Board in the course of performing its obligation to determine whether the proposed appropriations will best conserve the public interest (Water Code Sections 1253, 1255, 1257).

All of the protestants use substantially the same language in opposing Applications 11331 and 11332. Collectively they claim ownership of approximately 4,700 acres of land in Santa Ynez Valley suitable for irrigation, that approximately 4,100 acres have been irrigated for more than five years last past which are dependent upon the surface flow and underflow of Santa Ynez River, that use of water is being carried on under riparian right, overlying right and/or by appropriation, that the land not presently under cultivation will necessitate an additional quantity of water at such time in the future as development is extended and that the present and future needs of the Valley require that all of the natural flow produced in the watershed be undiminished in quantity except during the short and occasional periods of flash floods.

In addition to irrigation requirements the protestants point out that in Santa Ynez Valley there are located a city, towns, and rural communities which for many years have been wholly dependent

upon the waters produced by the Santa Ynez River system for domestic purposes.

They allege that the stream flow records of the Santa Ynez River indicate that from 1906 to 1950 flash floods with peak discharges exceeding 5,000 cubic feet per second at Lompoc have occurred in only twenty storms. These storms occurred in January in six years, in February of nine years, in March of three years and in April of two years.

With the natural surface flows that have existed in the Santa Ynez River system over the past years it is claimed that water levels in the underground streams and in the percolating water strata have been dangerously lowered and a high volume of runoff from the headwaters of the river is required to replenish and maintain ground water levels, that all the water in the Santa Ynez River system is required to fill the needs and rights of riparian and overlying owners and holders of other rights and if there is any right to salvage excess waters produced by flash floods the right to these waters should be exercised solely for the benefit of lands to which valid rights to the waters of the Santa Ynez River attach and upon which water the lands are dependent.

The City of Lompoc in its protest against Applications 11331 and 11332 states, in addition to the allegations set forth in the preceding paragraphs, that it owns and maintains the water system which supplies 7,000 inhabitants in the subdivided portion of the City comprising an area of approximately three square miles. As to its past and present uses of water the City asserts that its

diversions from the Santa Ynez River Basin have increased from 10,300,000 cubic feet during the year of 1928 to 34,200,000 cubic feet during the year of 1949.

Answers to Protests

The Bureau of Reclamation, on behalf of the United States, in its answers to the protests asserts that the applications are to appropriate unappropriated water and that the United States recognize and respect valid prior water rights. In this connection the Bureau advises that the United States has entered into a contract with the Santa Ynez River Water Conservation District (USBR Exh. 28 - hereinafter referred to as "Live Stream Agreement") which limits storage in Cachuma Reservoir to only those waters subject to appropriation.

Article 15(a) of the contract provides as follows:

"(a) The water from the Santa Ynez River to be conserved, distributed, and used by means of the Cachuma Unit, other than water obtained by means of tunnels in the Santa Ynez Mountain Range, shall be water which, at time of the appropriation thereof by the United States, was or shall be available for appropriation under laws of the State of California. All established water rights, whether such rights are presently fully developed or not, are hereby recognized and shall be preserved notwithstanding the execution of this contract or of any provision of this contract to the contrary, or any operation of use hereunder."

In addition, the United States recognizes under Article 15(c) of the contract the existing rights and rights for the future development of the Santa Ynez River Valley:

"(c) The United States hereby recognizes and agrees not to take, restrict, impair, or interfere with any or all of said presently established rights to water for present use and future development based upon such rights."

Under Article 11 of the contract the United States is limited to the period of time during which water may be impounded in Cachuma Dam:

"11. At times when a live stream as hereinabove defined, is not in existence, the United States shall not store or divert any part of the water then flowing into Cachuma Reservoir that would be required to maintain a live stream as hereinabove defined, or that would be conducive toward maintaining a live stream ..."

Article 10 of the contract defines the live stream referred to in Article 11:

"10. A live stream ... shall be deemed to exist in the Santa Ynez River whenever there is a visible stream of water flowing on the surface of the river at San Lucas Bridge, at the Mission Bridge near Solvang, at the U.S. Highway 101 Bridge near Buellton, at what is known as Santa Rosa damsite ... at Robinson's Bridge near Lompoc, and there is sufficient flow in the river of not less than one cubic foot of water per second at the H Street Bridge, which is north of Lompoc."

The Bureau alleges that under Article 15(e) of the contract the Santa Ynez River Water Conservation District which encompasses the major portion of the Santa Ynez River watershed downstream from Cachuma Dam and substantially all of the Valley floor area expressly recognizes Applications 11331 and 11332 on behalf of itself and the landowners within the District. Article 15(e) provides:

"(e) The District on its own behalf and on behalf of those for whom this contract is made recognizes the rights of the United States, particularly those under Applications No. 11331; 11332 ... filed with the Division of Water Resources (now the State Water Rights Board) of the State of California for the appropriation, storage and diversion of unappropriated water in accordance with the laws of the State of California."

The Bureau indicates that the releases of water from Cachuma Dam under the contract are intended to be sufficient to satisfy existing rights and replenish underground storage, that increased ground

water use will require increased releases in order to maintain the live stream and therefore the Bureau believes that the requirement for maintaining a live stream in the Santa Ynez River will assure water enough for future as well as present uses in the Valley.

Hearing Held in Accordance with the Water Code

Applications 11331, 11332, 11761, 11762, and 11989 were completed in accordance with the Water Code and applicable administrative rules and regulations and were set for public hearing under the provisions of the California Administrative Code, Title 23, Waters, before the State Water Rights Board (hereinafter referred to as "the Board"), on Tuesday, July 16, 1957, at 10 a.m. in the Courthouse at Santa Barbara. Of the hearing the applicant and the protestants were duly notified. The hearing extended through later sessions convened on July 17 and 18, 1957, in Santa Barbara and on September 5, 1957, at the Board's office in Sacramento. The following discussion and analysis is based on evidence received at said hearing.

Description of the Watershed

Santa Ynez River

The Santa Ynez River traverses the entire width of the southern part of Santa Barbara County, following a course slightly north of west for about 70 miles from Juncal Canyon, just inside Ventura County, to the Pacific Ocean, near the town of Surf. The river has a drainage area of about 15 miles in maximum width and a total of some 900 square miles. The southern border of the watershed

is the crest of the narrow Santa Ynez Mountains. Its northern border is the San Rafael Mountains to the east, the lower Purisima Hills to the west.

Cachuma Dam is located about 45.7 miles from the mouth of the Santa Ynez River and commands a drainage area of approximately 421 square miles. Above Cachuma Dam the Santa Ynez River receives several large tributaries from the north such as Mono, Santa Cruz, and Cachuma Creeks, which drain the south slopes of the rugged San Rafael Mountains. Many smaller tributaries from the south drain the north slopes of the Santa Ynez Mountains.

Two dams currently impound water in the headwater region of the Santa Ynez River, forming Jameson Lake and Gibraltar Reservoir, which supply water by transmountain tunnel diversions to the Montecito County Water District and the City of Santa Barbara, respectively.

Mean annual precipitation within the drainage basins varies from 14 inches on the coast and 18 inches near Cachuma Dam, to as much as 40 inches at the eastern boundary of the river basin. Of the total volume of precipitation on all the river basin, about two-thirds falls on the area upstream from Cachuma Dam. The climate of the area is typical Mediterranean-type with wet winters, during which about 85 per cent of the total annual precipitation occurs, followed by dry summers (SWRB Exh. 10).

Glen Anne Creek

Glen Anne Creek heads near the crest on the south side of the Santa Ynez Mountains and flows southerly for about six miles to the Pacific Ocean. Glen Anne Dam on West Fork Glen Anne Creek is

located about five miles from the mouth of Glen Anne Creek and commands a drainage area of 0.56 square miles. The elevation of the drainage area varies from about 2,100 feet in the headwaters to sea level near the mouth.

Mean annual precipitation at San Marcus Pass at elevation 2250 which is located a few miles to the east, was 29.7 inches for the periods 1897 to 1916 and 1921 to 1955. The mean annual precipitation near sea level for the area was 18.4 inches, measured at Santa Barbara, elevation 130, for the years 1867 to 1955. The climate is typical of Santa Barbara County with wet winters followed by dry summers (USBR Exh. 10).

Lauro Creek

Lauro Creek, also called Diablo Creek, is a short intermittent stream about two miles long. Its headwaters are in a small canyon on the south flank of the Santa Ynez Mountains at an elevation of about 1,000 feet. The stream flows southwesterly for about two miles where it debouches onto the Santa Barbara Plain near San Rogue School. Lauro Dam is located about 3/4 mile above San Rogue School and receives the runoff of a drainage area of 0.43 square mile.

Mean annual precipitation at station "Pinecrest" near the south portal of Santa Barbara tunnel and immediately above Lauro Dam, as measured by a gage located at elevation 1,000 feet during the period 1897 to 1916 and at elevation 1,200 feet during the period 1929 to 1955, was 24.2 inches (USBR Exh. 10).

The Cachuma Project

The Cachuma Project was authorized by House Document 587,

80th Congress, 2nd Session (SWRB Exh. 9), and was designed to conserve the runoff of flood waters of Santa Ynez River. The principal features of the project are the Cachuma Dam and Reservoir on Santa Ynez River, Tecolote Tunnel to convey the water from the Reservoir through the Santa Ynez Mountains to the coastal area of Santa Barbara County, and the South Coast Conduit to distribute water to several county water districts and the City of Santa Barbara in the coastal area. Included in the main conduit system are three small regulating reservoirs (Glen Anne, Lauro and Ortega), located along the conduit and a terminal reservoir (Carpinteria) (R. T. page 110).

Cachuma Dam is located on the Santa Ynez River about 25 road miles northwest of the City of Santa Barbara, by State Sign Route 150. The dam is an earth and rock filled structure rising 206 feet above streambed and having a crest length of 2,975 feet. The spillway section is concrete lined with four 50 by 30 foot radial gates having a capacity of 161,000 cubic feet per second. A controlled outlet pipe 38 inches in diameter permits reservoir releases to water users downstream from the dam. The reservoir formed by Cachuma Dam has a gross capacity of about 205,000 acre-feet with 32,500 acre-feet of inactive storage below the Tecolote Tunnel intake and 172,500 acre-feet of active storage space above the tunnel intake for diversion to the south coast area. Construction of Cachuma Dam was completed on July 17, 1953 (R.T. page 110).

Tecolote Tunnel extends through the mountains from Cachuma Reservoir to the headworks of the South Coast Conduit on the coastal side of the Santa Ynez range. A total flow of more than 7 cubic feet per second of seepage water was encountered during construction,

causing considerable delay in completion of the bore. The tunnel is concrete lined, seven feet in diameter and 6.14 miles long with perforations to collect seepage, and has a capacity of 1,000 cubic feet per second (R. T. page 111). Construction of the tunnel was completed January 28, 1956 (R.T. page 113).

The South Coast Conduit consists of a high pressure reinforced concrete pipeline extending 26 miles eastward from the outlet portal of Tecolote Tunnel across canyons, hills and highly developed residential areas to the Carpinteria Regulatory Reservoir located about two miles northeast of the town of Carpinteria. The conduit is divided into two sections; namely, the Goleta Section and the Carpinteria Section.

The Goleta Section of the conduit consists of 10 miles of 48-inch diameter reinforced concrete pipe. It begins at the south portal of Tecolote Tunnel and extends to the Lauro Reservoir in Lauro Canyon north of the City of Santa Barbara. This section of the conduit has a capacity of 70 cubic feet per second and has been in operation since July 3, 1951 (R.T. page 114).

The Carpinteria Section of the conduit connects to the Goleta Section in a control house just before the Goleta Section enters Lauro Reservoir and extends 16 miles eastward to the Carpinteria Reservoir with a capacity of 40 acre-feet, located about two and one-half miles northeast of the town of Carpinteria. This section of the conduit is composed of 36, 30 and 27-inch diameter concrete pipe and has a capacity varying from 38 cubic feet per second through the 36-inch section to 11.6 cubic feet per second through a portion of the 27-inch section (USBR Exh. 40). A portion of the

conduit passes through the 1.1 miles long six-foot diameter Sheffield Tunnel near its terminus.

Glen Anne Dam is an earthfilled structure 102 feet high with a crest length of about 240 feet and is located on the West Fork Glen Anne Creek downstream from the entrance of Goleta Section of the conduit. The reservoir formed by the dam has a capacity of 500 acre-feet (R.T. page 114) and stores the overflow from the conduit.

Lauro Dam is an earthfilled structure 110 feet high with a crest length of 540 feet. The reservoir created by the dam has a capacity of 642 acre-feet (R.T. page 114) and is located near the terminus of the Goleta Section of the conduit.

The Ortega Regulatory Reservoir is located about one mile north of the town of Summerland. This reservoir is a concrete lined basin having a water depth of 18 feet and a capacity of 60 acre-feet.

Lauro, Ortega and Carpinteria Regulating Reservoirs are constructed and connected to the South Coast Conduit so as to "float on the line" with water elevation at the hydraulic gradient of the conduit. Automatic pressure valves control the reservoirs' storage to supply additional water during periods of peak demand (R.T. page 115).

The total cost of the Cachuma Project has amounted to \$43,360,000 of which \$14,000,000 has been expended for the Cachuma Dam and Reservoir, \$14,550,000 for Tecolote Tunnel, \$6,410,000 for the South Coast Conduit and the remainder for the regulatory reservoirs, distribution systems and general property (R.T. page 116).

The estimated total annual project yield based upon reservoir operation studies with runoff of Santa Ynez River as actually

occurred from 1918 through 1952 is 33,200 acre-feet including an estimator yield of 1,400 acre-feet per annum from seepage into Tecolote Tunnel (USBR Exh. 42).

Stream Flow

Santa Ynez River

The Santa Ynez River is an intermittent stream with very wide seasonal and annual variations in flow. In most years low summer flows are all diverted for beneficial use, or are absorbed in the alluvium of the river bed as ground water recharge.

Runoff of "Santa Ynez River at Robinson Bridge" (immediately east of the town of Lompoc and about 13 miles upstream from the ocean) has been measured by the United States Geological Survey since 1906. This gaging station which is below 88 per cent of the watershed has, for the 42 years of published record, 1906 through 1954, measured an average annual discharge of 135,824 acre-feet with a maximum annual discharge of 652,330 acre-feet in water year 1940-41 to zero flow in water year 1950-51 (USBR Exh. 16).

Studies by the United States Geological Survey have shown that a relatively small amount of the surface flow of Santa Ynez River below Robinson Bridge contributes to the ground water basin underlying Lompoc plains. Therefore the flow at this gage, particularly during the periods of high discharge, is an indication of the quantities which have wasted to the ocean (SWRB Exh. 10).

Runoff of "Santa Ynez River at San Lucas Bridge" (about three miles downstream from Cachuma Dam) was measured by the City of Santa Barbara from 1928 to 1934 and since that time by the United States Geological Survey. The measured runoff at this gaging station for the 24 years of published record prior to construction of Cachuma Dam, October 1928 through September 1952, has averaged 71,730 acre-feet annually with a maximum annual discharge of 475,098 acre-feet in water year 1940-41 and one acre-foot or less in water years 1930-31, 1947-48 and 1950-51 (USBR Exh. 17). The maximum discharge during the period of record was 43,700 cubic feet per second on March 2, 1938 (R.T. page 49). By correlation with the record of flow at a gaging station at Gibraltar Dam, which has the longest record of any station on the river, it has been determined that the average annual natural flow at Cachuma Dam for the 47 years 1905-1952 is 95,500 acre-feet. Average annual upstream depletions by Jameson Lake and Gibraltar Reservoir have amounted to a total of 5,766 acre-feet (USBR Exh. 18).

Lauro Creek and West Fork Glen Anne Creek

Lauro Creek and West Fork Glen Anne Creek are intermittent streams with a drainage area of 0.43 square mile and 0.56 square mile, respectively, above Lauro Dam and Glen Anne Dam. There have been no gaging stations located on these streams but a station has been operated since 1941 on San Jose Creek. This station is located

about 1.7 miles north of the town of Goleta and has a drainage area of 5.54 square miles. Runoff data in acre-feet by months for the period of record are contained in USBR Exh. 19. The drainage area above the gaging station on San Jose Creek is, according to the applicant's witness, similar to the drainage area above Lauro Dam and Glen Anne Dam (R.T. page 58) and by reducing the recorded runoff of San Jose Creek by the ratio of drainage areas it is estimated that the mean annual discharge of Lauro Creek and West Fork Glen Anne Creek at Lauro Dam and Glen Anne Dam is 73 acre-feet and 93 acre-feet, respectively, with an estimated maximum annual runoff of 275 acre-feet and 359 acre-feet, respectively, occurring in the water year 1951-52 (USBR Exhs. 20 and 21).

Geology

The Santa Ynez River Basin has five divisions with respect to topographic, geologic and hydrologic features. In downstream order they are designated (1) Headwater Subarea, (2) Santa Ynez Subarea, (3) Buellton Subarea, (4) Santa Rita Subarea, and (5) Lompoc Subarea. The following discussion of geology is based upon information contained in SWRB Exhibit 10 (Water Supply Paper 1107, U. S. Geological Survey, "Geology and Water Resources of the Santa Ynez River Basin, Santa Barbara County, California", dated 1951).

The Headwater Subarea extends from the source of the Santa Ynez River westward to the San Lucas Bridge. It is underlain mainly

by consolidated and essentially nonwater-bearing rocks. The flow and underflow of the Santa Ynez River is for all practical purposes confined to the shallow channel deposits and thin elongated bodies of alluvium along the river. In practically all the area the ground water and surface flow probably discharges into the Santa Ynez River.

The Santa Ynez Subarea extends from the San Lucas Bridge downstream to near the town of Solvang. The water-bearing formations underlie two main areas which are separated by a nearly continuous barrier of impermeable consolidated rocks which is crossed only by Alamo Pintado, Zanja Cuta, and Santa Aquenda Creeks flowing from the north. The flow and underflow of the Santa Ynez River within this subarea is almost completely enclosed in the shallow aquifers by the consolidated rocks. There is an effluent flow of an estimated 4,000 acre-feet per year at low water stage, from creeks and springs on the north into the Santa Ynez River.

Just west of Solvang and for a distance of about six miles the Santa Ynez River leaves the consolidated rocks and traverses the Buellton Subarea. The inner valley is floored by an alluvial plain more than a mile wide, which lies against unconsolidated water-bearing formations on the north and consolidated nonwater-bearing rocks on the south. In the subarea as a whole the chief water-bearing formations are the relatively shallow river channel deposits and deposits confluent with the water of the river. There is an effluent flow, estimated to be at least 2,000 acre-feet per year during low water stage, from the water-bearing deposits to the north, into the Santa Ynez River.

The Santa Rita Subarea's eastern border is located about 2.4 miles west of Buellton where the river crosses over a ridge of consolidated rock. The river then flows westward through a deep winding broad valley enclosed laterally by impermeable consolidated rocks, with the exception of Salsipuedes Creek drainage basin on the south, to the gap known as the Narrows. Along the Santa Ynez River, ground water occurs in the deposits in and lying along the river, and the static level is in large part determined by the river stage. The ground water south of the Santa Rita Hills is confluent with the water of the Santa Ynez River, however, indications are that the chief source of water under present conditions is unmeasured miscellaneous inflow from the sides. There is an estimated effluent flow to the river across the subarea of about 725 acre-feet per year during low water stage.

The Lompoc Subarea comprises the river reach between the Narrows and the ocean, and includes the tributary valleys. The Lompoc Plain, hilly uplands to the north, and the trough between the Purisima Hills and the Santa Rita Hills are underlain by unconsolidated deposits that contain and transmit ground water with varying facility. In order of depth the water-bearing formations are the lower member of the younger alluvium, the gravelly terrace deposits, the Orcutt sand, the Paso Robles sands, silts and clays, and Cureaga sand.

The main water-bearing zone, the lower member of the younger alluvium and the secondary water-bearing zone, the terrace deposits, sustain nearly all the artificial draft and appear to act as huge gravel-enveloped wells through which water is withdrawn from underlying and more extensive finer grained material. The specific and more

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overlying
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immediate sources of recharge in order of relative volume of contribution are, according to SWRB Exhibit 10, (a) the Orcutt, Paso Robles and Careaga formations by transmission underground from the margins of the plain and from below; (b) the shallow water-bearing zone, partly by continual transmission of water to the main and secondary zones from the tributary streams, and partly by seasonal unwatering as a result of pumping from the main and secondary zones; (c) the Santa Ynez River by seepage loss in the first 3,000 feet below Robinson Bridge, near the Narrows, and in a small part in Sections 23 and 24, T7N, R35W; and (d) by movement of underflow through the tongue of the main water-bearing zone that extends upstream through the Narrows.

Water Quality

The following discussion of water quality is based upon information contained in SWRB Exhibit 11 (U. S. Department of the Interior, Bureau of Reclamation, "Santa Ynez River Basin, California, A Reconnaissance Study of Water Problems of Southern Santa Barbara County", dated 1955) and SWRB Exhibit 13 (U. S. Department of the Interior, Geological Survey, Ground Water Branch, "Ground Water Appraisal of the Santa Ynez Basin, Santa Barbara County, California, 1945-52", dated 1957).

Surface water from the San Rafael and Santa Ynez Mountains generally is a carbonate type of good quality with low to moderate total salinity, low per cent sodium, and low boron and chlorides. Limited analyses of water from Gibraltar Reservoir, Cachuma Reservoir

and the Santa Ynez River at Buellton show this water to be Class 1 irrigation quality. For municipal use it would be rated very hard and high in sulphates. No alternate source is available, however, and this water has been used satisfactorily for domestic purposes for many years.

Ground water quality analyses have been made principally from the deep water body on the Lompoc plain. Chemical constituents generally are evenly balanced, and the total salinity is moderate. Analyses indicate that chloride concentrations of more than 300 parts per million are exceptional. The variations appear to be governed in a large part by the different formations that contain the deep water in different parts of the area. The chloride concentration ranges from about 80 parts per million in the eastern part of the Lompoc area to about 160 parts per million in the western part. This rather wide range probably is a result of the varied quality of water from the different underlying formation and perhaps of downward percolation locally of shallow water of high salt concentration. No evidence of sea-water intrusion has been found.

The range in hardness of the deep water generally is comparable to the range in Chloride content. Analyses since 1935 indicate that the ground water of the Lompoc plain has ranged between the limits "good" to "permissible" and "doubtful" to "unsuitable". No single analysis indicated a water wholly unsuitable for irrigation. The boron concentration in general is low. The only crop grown on the Lompoc plain that is sensitive to boron is walnuts, and therefore for all other crops the waters may be classified as "excellent" to "good" so far as boron is concerned.

Downstream Rights

It is not disputed that the natural flow of the Santa Ynez River supplies surface diversions for beneficial use on adjacent lands and contributes to ground water by percolation from the channel in the reach of the stream below Cachuma Dam, which ground water is drawn upon for beneficial use on overlying lands. Estimates of the amount of such contribution have been made as the results of studies conducted by the United States Geological Survey (SWRB Exh. 12). In order to afford protection to these rights the United States through the Bureau of Reclamation entered into the "Live Stream Contract" dated October 7, 1949, with the Santa Ynez River Water Conservation District (USBR Exh. 28), heretofore discussed under "Answers to Protests". The contract was modified with the consent of the Santa Ynez River Water Conservation District June 5, 1956, "to provide for temporary retention of water in Cachuma Reservoir and subsequent release for experimental purposes" (USBR Exh. 29).

The United States has announced its intention of releasing sufficient water past Cachuma Dam to maintain the ground water basins and satisfy prior rights. Allowance of approximately 1,400 acre-feet per year for these purposes has been made in project planning by the Bureau but it is recognized that should a greater need become evident at some future time such deficiencies can be made up by greater releases from the Cachuma Dam or by additional storage projects (R.T. page 132). There is general agreement however that computations of the amount and timing of the required releases for satisfaction of downstream rights are extremely complex and that available

information is insufficient upon which to base positive conclusions. In recognition of these uncertainties, the Bureau, through its principal witness, Leland Hill, and in the "Live Stream Agreement" recommends a trial period of at least 10 years during which intensive studies would be made of the hydrologic phenomena associated with this problem (R.T. Vol. II, pages 274 to 277).

Harold Conkling, civil engineer and principal witness for Santa Ynez River Water Conservation District, upon the basis of his studies made in cooperation with the United States Geological Survey and Bureau of Reclamation (R.T. Vol. II, page 301), concurs with the Bureau's witness that there are a considerable number of unknown or undetermined factors which will have to be more closely investigated before any final conclusions can be reached, and indicates that it would be essential to have the Board retain jurisdiction over any permit issued to the Bureau in connection with the Cachuma Project (R.T. Vol. II, page 307). The District has submitted recommendations for permit terms including provision for a trial period throughout the entire life of the permits for evaluation of the effect of the project upon downstream rights, during which period studies, investigations and measurements would be made by the United States and reported annually to the Board.

There is ample support for permit terms to carry into effect the foregoing recommendations*. There is lacking in the record of these proceedings sufficient information upon which to base

*The live stream contract is but a starting point in the determination of how much water is required to be released for the protection of vested rights, without resulting in unnecessary waste into the ocean.

positive and definite conclusions concerning conditions to be imposed at this time in permits issued to the United States for the adequate protection of downstream vested rights and the indicated investigation and studies should be carried out and reported annually by the United States until further order. The Board should retain jurisdiction for the purpose of such reviews, hearings, and orders as may be required until a final determination and order can be made concerning the amounts, timing and rates of releases of water past Cachuma Dam in satisfaction of existing downstream rights, based upon further future information to be developed by the continuing studies and investigations.

Considerable evidence is in the record as to the present and anticipated future water requirements from the ground water basin underlying Santa Ynez Valley, principally on behalf of the City of Lompoc and of the United States military reservation, Camp Cooke. Such evidence need not be given detailed consideration in this decision since to do so would not affect the conclusions reached. Suffice it to say that the underground water of the valley which is unquestionably supplied principally from Santa Ynez River is the only source of supply of numerous users under valid rights and maintenance of this water source is of utmost importance.

Fish and Wildlife

A trout fishery is in operation on Cachuma Reservoir. Although trout appear to thrive in Cachuma Reservoir, the fishery must be maintained artificially as there is no natural spawning area.

The Santa Ynez River above the reservoir contains limited amounts of gravel for spawning of trout, but upstream diversions so reduce flows during the spawning season that the river is practically nonproductive of game fish (SWRB Exh. 11). Relative to the matter of fish preservation the former State Division of Water Resources made the following recommendation to the Secretary of the Interior pursuant to the proposed Federal report on the Cachuma Project.

"5. It is recommended that, because of the limited water supply available ... to meet present and anticipated future domestic, municipal and irrigation requirements ... no water from the Cachuma unit ... be dedicated to the protection or propagation of fish life on that stream." (SWRB Exh. 9).

The Project Beneficiaries

A contract for transfer of the operation and maintenance of the Cachuma Project to member units of the Santa Barbara County Water Agency was executed by the United States and the Agency on February 24, 1956 (USBR Exh. 46). Initial operation of the South Coast Conduit began February 29, 1956, and operation and maintenance of the Tecolote Tunnel began on May 15, 1957. The contract specifies that the Cachuma Dam will not be transferred to the Agency for operation and maintenance prior to November 1, 1962, unless and until new operating criteria are established or the existing operating criteria are renewed or modified by agreement between the United States and the Santa Ynez River Water Conservation District (R.T. page 129).

The Santa Barbara County Water Agency has entered into a contract dated September 12, 1949, with the United States for the furnishing of water from Cachuma Project to member units of the

Agency (USBR Exh. 44). The contract became effective upon its execution and is to remain in effect for a period of forty years commencing with the year in which the initial delivery date occurs with an option for extension or renewal should, during the term of contract, Congress enact the necessary legislation. The contract provides that, to the extent water and necessary facilities are available, the United States will furnish to member units of the Agency each year total quantities amounting to 8,700 acre-feet beginning about 1960 and increasing periodically to 32,000 acre-feet at about 1985. Studies of the United States have indicated that an additional water supply for the Santa Ynez Valley and the South Coastal Area will be required about 1985 (SWRB Exh. 14).

The County of Santa Barbara has also entered into a contract with the United States for the development, maintenance and administration of the area surrounding Cachuma Reservoir for recreational purposes (SBCWA Exh. 10). The County has developed a park with extensive recreational facilities at the Tequepis Point area, and plans are being formulated for future development in other areas (R.T. pages 162-164).

Assembly Concurrent Resolution No. 2 of the 1952 1st Extraordinary Session and Senate Concurrent Resolution No. 8 of the 1952 Regular Session of the California Legislature (Statutes 1953, Vol. 1, pp. 272, 405) memorialized the Department of Public Works and the State Engineer (predecessors of the Board) in issuing permits and licenses for use of water for irrigation in connection with Federal reclamation projects to give consideration to issuing such permits and licenses to public agencies of the State contracting with the United States for project water supplies rather than to the United States, and that conditions be included to the effect that such public

agencies together with the landowners therein are and shall be the beneficiaries of each permit and that the rights of the agencies and landowners to be served with water are, subject to application of the water to beneficial uses, permanent and appurtenant to the lands upon which the water is used.

Consideration has been given to each of the matters referred to in the above-mentioned resolutions. It is concluded that permits should be issued to the applicant United States, subject to substantially the conditions as specified in the resolutions. By this procedure, jurisdiction will be maintained of the agency owning, controlling and operating the principal project works on the Santa Ynez River and thus operation of the project in compliance with state law and the terms of the permits will be assured.

The California Water Plan

Santa Barbara Group

Pursuant to legislative authorization (Stats. 1947, Ch. 1541) the Department of Water Resources and its predecessors have prepared a general and coordinated plan, known as "The California Water Plan", for the development, utilization and conservation of the water resources of the State. The report presenting this plan has been published as Bulletin No. 3, Department of Water Resources, "The California Water Plan", May, 1957 (SWRB Exh. 6).

At the present time, there are three surface storage developments of significant size on the upper reaches of the Santa Ynez River; namely, Jameson Lake with an initial storage capacity of 6,700

acre-feet; Gibraltar Reservoir, with an initial capacity of 14,500 acre-feet; and Cachuma Reservoir. Two smaller dams, Mono and Caliente, were constructed to reduce the quantity of silt entering Gibraltar Reservoir, but are now completely filled with silt. The storage capacity of Gibraltar reservoir was reduced to such an extent by silt by 1948, that the dam had to be raised to restore the capacity. Water conserved by these reservoirs is conveyed by tunnels through the Santa Ynez Mountains for use in or adjacent to the City of Santa Barbara.

Plans discussed in Bulletin No. 3 for further development of local water resources of the "Santa Barbara Group" are limited to the further control of the Santa Ynez River. Because of the relatively small amount of water available for further development, the objective of The California Water Plan in the group would necessarily be accomplished by an import of water from areas of surplus in other parts of the State.

It is assumed in Bulletin No. 3 that the safe yield from the existing surface developments on the Santa Ynez River will continue to serve lands in the area south of the Santa Ynez Mountains, and that any additional yield developed will be utilized to serve lands within the watershed of the river. Possible local developments include Camuesa Reservoir on Santa Ynez River and Salsipuedes Reservoir on Salsipuedes Creek.

Camuesa Reservoir would be formed by construction of a dam upstream from Gibraltar Dam and would create a reservoir with storage capacity of 110,000 acre-feet, and a net safe seasonal yield of 5,800 acre-feet.

Salsipuedes Reservoir would be formed by a dam on Salsipuedes Creek about two and one-half miles upstream from its confluence with the Santa Ynez River. The reservoir would have a storage capacity of 46,000 acre-feet, and a net safe seasonal yield of 5,400 acre-feet.

Waters conserved by Camuesa Reservoir would be released into the channel of the Santa Ynez River, passing through Cachuma Reservoir, for diversion to lands adjacent to the river downstream from Cachuma.

Protection to the Watershed of Origin

In previous decisions the Board has had occasion to refer to the public policy of the State to extend to areas in which water originates assurance that they shall not be deprived of water required for their future needs by export of such water to areas of deficient water supply, and to the obligation of the Board to condition appropriations of water in the public interest (see Decisions Nos. D 869 and D 884, citing Water Code Sections 232, 1253, 1255, 1257, and Concurrent Resolutions of the Assembly and Senate, Statutes of 1953, Vol. I, pp. 272, 405).

The United States has committed itself to operate the Cachuma Project so as not to export water from the watershed of the Santa Ynez River which is, or will be, required to maintain natural percolation below Cachuma Dam, and the Board has declared its intention to retain jurisdiction for the purpose of requiring sufficient releases of water to fully accomplish this purpose.

It is shown in the record that the ultimate water requirements in the Santa Ynez River Basin exceed the available developed

supply by about 4,450 acre-feet per year below Cachuma Dam (USBR Exh. 47). It is also shown that this ultimate supplemental requirement can be met by construction of additional storage facilities within the basin (SWRB Exh. 6).

There is no evidence before the Board of future water requirements on lands within the watershed above Cachuma Dam, although Bulletin 2 of the State Water Resources Board (SWRB Exh. 5) indicates that the extent of irrigable lands in this area is small. Insofar as such lands are presently served with water under prior rights or are riparian to surface streams or are supplied by ground water percolating from surface streams, their right to receive water for beneficial use is, and will remain, prior to rights to be acquired under permits issued to the United States.

The Board concludes that issuance of permits to the United States on the conditions indicated in this decision will not conflict with the aforementioned policy concerning protection to watersheds of origin.

*? or to
USBR
from Cachuma
State Legat-
atures memo
J.W.*

Conclusions

The Board finds that there is unappropriated water in the sources named in the subject applications which water may be appropriated to a substantial extent in the manner proposed without injury to any other lawful user of water, that the intended uses are beneficial and that said applications should be approved and permits issued to applicant subject to the usual terms and conditions and subject to those additional terms and conditions indicated in this

decision for the protection of prior rights and in the public interest. The Board further finds that as so conditioned, the appropriations will best develop, conserve and utilize in the public interest the water sought to be appropriated.

The Board further finds that it is necessary for the Board to retain jurisdiction to the extent and for such period of time as may be reasonably necessary for the determination of stream flow of the Santa Ynez required for protection of vested rights without resulting in waste into the ocean.

ORDER

Applications 11331, 11332, 11761, 11762 and 11989 for permits to appropriate unappropriated water having been filed with the former Division of Water Resources, protests having been filed, jurisdiction of the administration of water rights, including the subject applications, having been subsequently transferred to the State Water Rights Board and a public hearing having been held by the Board, and said Board now being fully informed in the premises:

IT IS HEREBY ORDERED that Applications 11331, 11332, 11761, 11762 and 11989 be, and the same are, hereby approved, and it is ordered that permits be issued to the applicant subject to vested rights and to the following terms and conditions, to wit:

1. The amount of water to be appropriated shall be limited to the amount which can be beneficially used.
2. The amount of water to be appropriated under permit issued pursuant to Application 11331 shall not exceed 100 cubic

feet per second by direct diversion between January 1 and December 31 of each year, and 275,000 acre-feet per annum by storage to be collected between about October 1 of each year and about June 30 of the following year.

3. The amount of water to be appropriated under permit issued pursuant to Application 11332 shall not exceed 50 cubic feet per second by direct diversion between January 1 and December 31 of each year, and 275,000 acre-feet per annum by storage to be collected between about October 1 of each year and about June 30 of the following year.

4. The total amount of water to be appropriated by storage for all purposes under permits issued pursuant to Applications 11331 and 11332 shall not exceed 275,000 acre-feet per annum.

5. The amount of water to be appropriated under permit issued pursuant to Application 11761 shall not exceed 15 cubic feet per second by direct diversion between January 1 and December 31 of each year, and 500 acre-feet per annum by storage to be collected between about October 1 of each year and about June 30 of the following year.

6. The amount of water to be appropriated under permit issued pursuant to Application 11762 shall not exceed 15 cubic feet per second by direct diversion between January 1 and December 31 of each year, and 500 acre-feet per annum by storage to be collected between about October 1 of each year and about June 30 of the following year.

7. The total amount of water to be appropriated by storage

for all purposes under permits issued pursuant to Applications 11761 and 11762 shall not exceed 500 acre-feet per annum.

8. The amount of water to be appropriated under permit issued pursuant to Application 11989 shall not exceed 24 cubic feet per second by direct diversion between January 1 and December 31 of each year, and 500 acre-feet per annum by storage to be collected between about October 1 of each year and about June 30 of the following year.

9. The maximum amounts herein stated may be reduced in the licenses if investigation so warrants.

10. All rights and privileges under these permits, including method of diversion, method of use and quantity of water diverted, are subject to the continuing authority of the State Water Rights Board in accordance with law and in the interest of the public welfare to prevent waste, unreasonable use, unreasonable method of use or unreasonable method of diversion of water.

11. Permittee shall release water into the Santa Ynez River channel from Cachuma Reservoir in such amounts and at such times and rates as will be sufficient, together with inflow from downstream tributary sources, to supply downstream diversions of the surface flow under vested prior rights to the extent water would have been available for such diversions from unregulated flow, and sufficient to maintain percolation of water from the stream channel as such percolation would occur from unregulated flow, in order that operation of the project shall not reduce natural recharge of ground water from the Santa Ynez River.

12. Until further order of the Board permittee shall make or cause to be made suitable field investigations, measurements, and studies, and shall install necessary measuring facilities, to determine the amount, timing, and rate of releases of water into the natural channel of the Santa Ynez River below Cachuma Dam that are required of permittee in order to fully comply with the provisions of condition No. 11 in this permit. Permittee shall provide the necessary measuring devices and shall submit to the Board with the annual progress reports, or at such other times as the Board may require, a report of such investigations, measurements, and studies and the results thereof, including but not limited to the following:

(a) A continuous record of Cachuma Reservoir water surface elevations.

(b) A continuous record of precipitation near Cachuma Dam and at one or more other points near Cachuma Reservoir.

(c) Daily evaporation, wind movement, precipitation, and temperature near Cachuma Dam and at one or more other points near Cachuma Reservoir.

(d) Daily inflow to Cachuma Reservoir, including underground flows, by proper computations of tunnel diversions, reservoir releases, spills, and change in storage.

(e) Stream flow records by suitable measuring structures to determine inflows to Cachuma Reservoir from the Santa Ynez River, Santa Cruz Creek and Cachuma Creek.

(f) Records of flow of springs tributary to Santa Ynez River as may be necessary to determine the effect of Tecolote Tunnel on the discharge of such springs.

(g) Continuous records of outflow from Cachuma Reservoir, including flows through river outlets at Cachuma Dam, inflows and outflows through Tecolote Tunnel, and overflows at Cachuma spillway. Instruments suitable for accurate measurement of small outflows shall be installed.

(h) Continuing ground water studies in the Santa Ynez Basin, with spring and fall observation of all wells in the Basin and monthly observations of wells located within the Santa Ynez River Valley between Cachuma Dam and Mission Bridge near Solvang, and within one mile of the Santa Ynez River downstream from this latter point.

(i) Periodic surveys of the Santa Ynez River channel to determine consumptive use by native vegetation.

(j) Quarterly water quality analyses of surface and ground water downstream from Cachuma Dam at locations approved by the Board.

(k) Estimate of augmentation each water year from the Santa Ynez River to underground supply below Cachuma Dam, together with supporting data.

Permittee shall make its records of such investigations and measurements available for inspection by the Board and shall allow authorized representatives of the Board, Santa Barbara County Water Agency and member units, City of Lompoc, and United States military installation at Camp Cook, reasonable access to its project works and properties for the purpose of gathering information and data, to the extent not inconsistent with national defense.

13. The Board, either upon the request of any party or on its own motion, may, and shall, prior to the expiration of a 15-year trial period, hear, review, and make such further and different orders as may be required concerning proper releases of water for downstream use and recharge of ground water, and concerning the investigations, measurements, and studies to be conducted by permittee, until a final determination and order can be made concerning the amounts, timing and rates of releases of water past Cachuma Dam in satisfaction of downstream rights, and the Board retains continuing jurisdiction for such purposes during said 15-year trial period, or for such further time prior to issuance of license as the Board may determine upon notice and hearing to be reasonably necessary for the aforesaid purposes.

14. All releases of water past Cachuma Dam shall be made in such a manner as to maintain a permanent live stream at all times as far below said dam as possible, consistent with the purposes of the project and the requirements of downstream users.

15. The right to divert and store water, and apply said water to beneficial use as provided in the permits is granted to the United States as trustee for the benefit of the public agencies of the State together with the owners of land and water users within such public agencies as shall be supplied with the water appropriated under the permits.

16. Subject to compliance by the public agencies concerned with any and all present and future valid contractual obligations with the United States, such public agencies, on behalf of their

landowners and other water users, shall, consistent with other terms of the permits, have the permanent right to the use of all water appropriated and beneficially used hereunder, which right shall be appurtenant to the land to which said water shall be applied, subject to continued beneficial use and the right to change the point of diversion, place of use and purpose of use, as provided in Chapter 10 of Part 2 of Division 2 of the Water Code of the State of California, and further subject to the right to dispose of a temporary surplus.

17. Upon completion of the appropriation and beneficial use of water under the permits, any license or licenses which may be issued pursuant to Chapter 9 of Part 2 of Division 2 of the California Water Code shall be issued to the public agencies of the State within which the water shall have been found by inspection by the Board to have been applied to beneficial use.

18. Construction work shall be completed on or before December 1, 1960.

19. Complete application of the water to the proposed use shall be made on or before December 1, 2000.

Adopted as the decision and order of the State Water Rights Board at a meeting duly called and held at Sacramento, California, on the 28th day of February, 1958.

/s/ Henry Holsinger
Henry Holsinger, Chairman

/s/ W. P. Rowe
W. P. Rowe, Member