100 YEARS
OF
"SWEET WATER"

"The turning on of the water from the Sweetwater Dam at National City marks the virtual completion of an enterprise, the importance of which can hardly be overestimated."

The San Diego Union
January 26, 1888

Written by Leslie Trook
Published by The Sweetwater Authority
505 Garrett Avenue
Chula Vista, CA
BUT THE GREATEST OF THESE IS WATER

SWEETWATER.
Completion of National City's Great Water System.

ENTHUSIASTIC CELEBRATION.
Six Thousand Strangers Participate in the Great Event.

Honor to Whom Honor is Due—Frank A. Kimball, Col. W. C. Dickinson and Warren C. Kimball Given the Credit They Deserve—Water Turned on and the System Pronounced a Success Both as to Quantity and Quality—A Magnificent Display of Fruit From the National Ranch. The Speeches.

National City Record, April 26 1888

It was Thursday, April 19, 1888, a big day for National City. Two slim columns of water, rising 70 feet into the air, served as a beacon for the people arriving in a steady stream. Men dressed in their finest double-breasted suits, and women, in their long, bustled gowns, carrying parasols, walked across dirt roads and newly completed train tracks to the improvised seating in front of the speakers’ platform.

Although many of the celebrants came to town by horse and buggy, many more came by rail. "Train after train came sweeping in with expectant faces at the car windows," reported the San Diego Union. A.L. Storey and H.L. Babcock had opened their Belt Line Motor Road from Coronado for the first time that day, bringing people from across the bay. And down from San Diego came the trains of the National City and Otay Railroad, "rushed through as rapidly as possible, every car loaded to the utmost."

The crowd, estimated at from three to five thousand people, depending on which daily you subscribed to, arrived from as far away as the East Coast to transform a dusty business roadway into the scene of the largest celebration in local history: The Sweetwater Dam, after one false start and two design changes in mid-construction, had at last been finished.

Waterworks, rather than fireworks, marked this celebration. The twin streams of water shooting into the air in front of the International Hotel paid homage to the phrase, "water, water everywhere, and lots of it to drink." Under the supervision of A.L. McCourtney, the foreman of the pipeline, a group of men used two-and-a-half-inch hoses with one-inch nozzles to maintain the spectacular sight. The water sprayed continuously throughout the afternoon, "just to prove there was plenty of it."

April 19, 1888. The crowd gathers at the speakers' stand.
COL. WILLIAM DICKINSON

The dam was commenced November 17, 1886, and completed April 7, 1887—seven long months. In the meantime 60 million of wood-pole pipes have been laid, and water have supplied to the growing city to its fullest extent, and being introduced to all the olive and orange orchards and vineyards within its reach. In the large building west of the platform there will be seen the display of citrus fruits as ever raised in America, all of which have been raised on National Ranch, without the aid of this water system.

Another year from now these same fruits, now in the different stages of development, will be seen in full flower and bloom, and the sight of them will be as beautiful as the “Sweetwater Dam” itself.

Although the water display attracted the crowds, it was the inaugural performance of the National City Band, 14 members strong, that directed those crowds to the shaded, makeshift speakers’ platform for the official opening of the day’s affair. The music of the band, along with that of the Coronado orchestra, served as an overture for the numerous speakers scheduled to address the assembly.

Frank Kimball, whose vision had led to the completion of the dam, was the first speaker. He was followed by Colonel William Dickinson, General Manager of the San Diego Land and Town Company, who had taken Kimball’s vision and made it a reality. Commenting on the abundant fruits on display across the street, all of which had been grown without benefit of a fully developed irrigation system, Dickinson asked, “If this result to-day is shown, what may we expect in 1889?"

The question was answered as each speaker took his turn. From Father Horton to A.H. Isham, the message was clear—water supply was the gateway to National City’s and the bay region’s prosperity. Judge Peterbaugh spoke for everyone when he said, “While five years ago the town was dead, it is now ringing with the hammer. Water is king.”

After the speeches ended, the people were invited to the new warehouse of Isham, Gordon, and Co., where that morning a “hundred willing hands” had turned the rough, unfinished building into an exhibition hall laden with fruit and flower displays from the acreage planted on the National Ranch. “The hall . . . was transformed into a veritable Eden,” reported the National City Record. The air within was redolent with the scent of 35 varieties of roses and other flora which blended with the smell from orange and lemon displays to produce a sensory delight.

The “pièce de résistance” of the whole show was a replica of the Sweetwater Dam. Banks of roses, fuchsias, orange blossoms, marguerites, and Spanish bayonets formed, according to the Union, a “perfect facsimile of the great dam.”

As night fell and the exhibit hall emptied, people continued the celebration in Horticulture Hall. There a grand ball capped the day-long tribute to the “progressive spirit and liberal expenditure of money that resurrected a dead town and made it a live and prosperous city.”
THE NARROWS

The finest water power site: This was where Schuyler would build the Sweetwater Dam.

KIMBALL'S VISION

What National City was celebrating on that April day was the realization of a dream Frank Kimball had nurtured since the day he rode to the northwest corner of Rancho de la Nacion and beheld the "finest water power [site] that I ever saw in my life." That site was a rocky gorge of the Sweetwater River where 20 years later the dam would be built.

Kimball had come south from San Francisco, where he and his brothers, Levi and Warren, had established a contracting business. Looking for a homestead in a milder climate, Kimball traveled to San Diego and found it. On June 18, 1868, the Kimball Brothers bought 36,632 acres of land for $30,000 from San Francisco banker Francois L.A. Pioche. Rancho de la Nacion, long used by Spanish and then Mexican ranchers for cattle pasture, had now been sold to a visionary who saw not only the value of the land but the need for a reliable water supply in order to develop it.

On May 26, 1869, Frank, Warren, and Levi Kimball formed one of the pioneer water companies in San Diego County. The Kimball Brothers Water Company supplied the 35 residents of the Rancho with water drawn from wells or taken directly from the flow of the Sweetwater River. The brothers then began to buy the water rights within the river's watershed as the first step toward the construction of a great reservoir.

To lure buyers to the area, Kimball knew that along with a good water supply he needed a railway connection with the East. Shortly after acquiring the ranch, he began negotiations to bring a railroad to San Diego, but it was not until 1880 that he was able to entice the Santa Fe Railway, by giving them 10,000 acres of the National Ranch, to build a San Diego connection to their transcontinental route.

Organized by Kimball in July 1880 as a subsidiary of the Santa Fe, the California Southern Railroad opened service in 1885 between San Diego and the East via its connection to the Atlantic and Pacific Railroad at Barstow. The new rail connection added impetus to the land boom that was just getting underway in San Diego. That land boom in turn led to the realization of Kimball's dream—the Sweetwater Dam.

THE SWEETWATER DAM

Commission at the Completion of the Great Waterworks.

The completion ceremonies at the Sweetwater dam took place yesterday afternoon. The last stone was laid by the oldest employee of the works. Mike Logan, who went to work the first day with Hamilton & Burkhart, contractors for the excavation in November, 1886. He has worked faithfully ever since, and has not lost a day from that time to the present. More remarkable still, he keeps every check he has received, and can not draw a cent of his money during the whole time.

As the last stone was put in place, the American flag was run up on the flagstaff surmounting the water tower, and all gave three hearty cheers for the dam. The employees then proceeded to "cane" their chief in an appropriate way by presenting an elegant gold bound ebony case, handsomely inscribed as follows:

"Presented by J. D. Schuyler, Chief Engineer Sweetwater Dam, by the Employes, April 7, 1888."

The ceremonies were impromptu, and with a little previous presentation that none of the other officers of the company were aware of what was going on. The dam is now completely finished, and camp was broken up last night.

At a meeting held in Temperance Hall, National City, last night, Colonel Dickinson announced the completion of the dam and that it seemed advisable to hold an appropriate celebration in National City. He suggested also that steps be taken in the matter.

San Diego Union, April 8, 1888
Because California law forbade railroad companies from dealing in real estate, the lands and the water rights given to the California Southern by Kimball were deeded to a newly formed corporation called the San Diego Land and Town Company.

It was the San Diego Land and Town Company's desire to take advantage of the land boom, by obtaining a quick water supply to hasten land sales, that caused the dam to be planned without the usual preliminary studies. The results were predictable. In a January 2, 1887 journal entry, Kimball wrote, "Am thoroughly disgusted with the entire management and the method of construction and I believe the dam cannot stand. Half the time is being spent breaking large rocks into small pieces. One-half more cement is being used than necessary and the earth used is totally unfit for the purpose."

The Land and Town Company's managers apparently saw it the same way. Two months and $35,000 after work began, they fired the supervising engineer, F.E. Brown, and turned the project over to James Dix Schuyler, Assistant State Engineer. Schuyler was directed (as he later wrote) to "design a suitable structure and execute its construction."

Brown's design had been patterned after the Bear Valley Dam in the San Bernardino Mountains. It was to have been a thin, 50-foot-high masonry wall (a mere 10 feet thick at its base), reinforced on its upstream side by a large earthen bank. Schuyler's radically different design called for a massive, 35-foot-thick concrete and stone monolith, much stronger than Brown's would have been. To keep the costs down, Schuyler used the masonry already

**SWEETWATER DAM, NATIONAL RANCH, CALIFORNIA**

**Constructed 1886-88 and owned by the San Diego Land and Town Company**

- Height of Dam to floor of roadway: 90 feet
- Length of Dam at top: 340 feet
- Length of Dam at base: 100 feet
- Thickness of masonry at base: 46 feet
- Thickness of masonry at top: 12 feet
- Area of watershed: 186 square miles
- Area of reservoir: 721.86 acres
- Capacity of reservoir: 5,871,310,000 gallons
- Elevation of top of Dam above sea level: 215 feet

(Continued on page 7)
in place, entombing it within the new structure.

Under Schuyler’s dynamic leadership the work went fast, and by the beginning of June 1887 the dam was finished; Schuyler had built it to a height of 60 feet, 10 feet higher than originally planned. In the meantime, however, Schuyler’s surveyors had been busy, and calculations based on their work showed that a 90-foot-high dam would impound five times as much water as a 60-footer. Armed with that information, Dickinson traveled to the Land and Town Company’s Boston headquarters and persuaded the company’s directors to authorize the additional funding needed to take the dam up to 90 feet.

Schuyler was ready. He had anticipated the extension and had terraced the back of the dam “in three steps, to give an opportunity of bonding the new work to the old.” Construction continued apace. The stone was quarried from a 100-foot-high cliff located 800 feet from the construction site and was hauled up to the site in wagons and stoneboats. At the site, the stones, some weighing as much as four tons, were lifted into position using horsepowered wooden derricks.

Most of the manual labor was done by Chinese workers. Other workers were in short supply because of the land boom. It was a time, Schuyler wrote, when labor was “independent and restless on account of the general feverish excitement.” Boom wages and prices made the overall cost of the dam higher than originally expected, although Schuyler cut costs wherever he could. He insisted on using horses instead of steam engines to power the derricks and devised a gravity-powered tramway for delivering mortar to any place along the width of the dam. He cut costs, but not at the expense of safety. During the 16 months it took to build the dam, not one worker was killed or seriously injured.

Upon its completion on April 7, 1888, the Sweetwater Dam stood 20 feet higher than any other arch masonry dam in the United States. What had started out as a modest 50-foot dam had ended up a 90-foot marvel of engineering.

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**WATER’S KING ENGINEER**

James Dix Schuyler was an impressive man, in both physique and mental acuity. Considered one of the foremost engineers of his time, Schuyler began his career, according to a 1901 issue of Out West Magazine, “locating the western end of the Kansas Pacific Railway, in the days when it was necessary to fight the Indians as well as combat the elements of nature in a wild country.”

Schuyler began to specialize in water when, in 1878, he became California’s Assistant State Engineer in charge of irrigation investigation. It was in that capacity that he was sent to inspect the work at the Sweetwater construction site, which brought his expertise to the attention of the Land and Town Company.

One of the greatest successes of his career saved the City of Los Angeles millions of dollars. As one of three consulting engineers to report on plans for the Los Angeles aqueduct, Schuyler recommended a change in location that eliminated some 25 miles of costly construction.

Whether overseeing the construction of the highest dam in the state (Hemet Dam in 1890-91) or the largest irrigation system in the United States (on the Snake River near Twin Falls, Idaho), Schuyler tackled assignments of huge magnitude and skillfully succeeded.
LOTS OF WATER BUT NO MONEY

The completion of Sweetwater Dam brought with it the promise of prosperity. An assured water supply was the key to the development of the low mesa at the southern end of the National Ranch. Colonel Dickinson had been hired by Land and Town in 1886 to develop those lands. Once the water supply and transportation were secured, professional town planner Dickinson embarked on a project to bring more permanent settlers to the area. He wanted to create a suburban community of small farms and hoped to attract solid citizens who were looking for a “little land with water.”

Dickinson subdivided 5,000 acres into 40-acre blocks of five-acre homesites, and advertised them in the local newspaper: “In order to secure the very best people and a nice class of houses [The San Diego Land and Town Company] will not sell a lot to any one unless the party will agree to build a neat, tasty, modern house that will cost not less than two thousand dollars.”

In the midst of all this promise and attractive advertisement, the land boom collapsed. Much of the land buying had been speculative — “to make quick money and return” — according to the Land and Town’s General Manager’s Report of 1888. To attract a more stable class of buyers, the company introduced a new policy of land lease/sales. San Diego Land and Town would supply 20-acre tracts with water and furnish enough lemon and orange trees to cover half the acreage. After five years of tending the orchard, the tenant would receive title to 10 acres. The other 10 acres would then be offered for sale by the company.

The water distribution system serving the area spread out in a network of more than 65 miles of pipeline. According to Schuyler “wrought iron pipe, covered with masonry laid in lime mortar, plastered in cement” originated at the dam and followed the valley for five miles before rising to the top of Chula Vista Mesa. At the corner of Fourth Avenue and E Street, Chula Vista, the pipe divided into two twenty-four-inch mains, one running south to Chula Vista and the other running north to National City.

The reservoir and distribution system, claimed Schuyler in a paper presented in 1888 to the American Society of Civil Engineers, added “a value of $1,500,000 to the principal tract of five thousand acres [Chula Vista] . . . and another million to the value of the town property in National City, and lands in its immediate vicinity.”

But all this attractiveness could not make up for the scarcity of money that slowed down sales and, in September 1895, seven years after the collapse of the real estate boom, the San Diego Land and Town Company was forced into receivership.
The Sweetwater Dam was one of San Diego County's earliest tourist attractions.

TOO MUCH — TOO LITTLE — TOO MUCH

The company may have failed in 1895 but the dam it had built did not, though it had a fine opportunity to do so. On January 17 and 18 of that year, a rainfall of more than six inches in 24 hours caused a runoff of nearly three times the capacity of the reservoir. Water poured over the dam for 40 hours. The volume was so great that the water's crest at times topped the dam's parapet by as much as two feet. The dam was subjected to a test, according to Schuyler, "beyond any previous calculation or expectation." But it held. Pipes needed to be replaced, but no damage was done to the dam's masonry.

Since it had proven that it had the strength to hold an extra two feet of water, the dam's height was raised two feet. The spillway was also enlarged to enable it to handle a volume of runoff equal to that generated by the 1895 storm. The repairs, completed under the direction of Chief Engineer H.N. Savage, with Schuyler acting as consulting engineer, cost $30,000.

Just two years after the flood, the opposite in weather extremes began—the drought of 1897-1904. By 1899, the Sweetwater Reservoir was empty. In desperation, the new San Diego Land and Town Company (the original had been reorganized in 1897 as a Maine Corporation) installed 17 pumping plants, drawing water from over 200 wells; additional well water from Jamacha Valley was transported by miners' troughs. Unfortunately, the water from the wells was not very good. A resident at the time, Fannie Thelan, remarked that "what water there was contained so much sulphur and alkali that the orchards and all other vegetation were injured or completely ruined."

In 1904 the drought ended. By now the San Diego Land and Town Company had undergone another change. It had separated in 1902 into three companies—Sweetwater Water Company, San Diego Land Company, and San Diego Fruit Company. The dam, water supply, and water rights came under the control of the Sweetwater Water Company. Attempting to offset the extremes of weather conditions, the Sweetwater Water Company raised the dam to a height of 110 feet during the years 1910 and 1911. At the increased height, the reservoir would take longer to fill in very wet years and longer to empty in very dry ones. The increase in height, however, was not all solid masonry: At the north end of the dam there was a section 90 feet long and 20 feet high composed of earth and rock reinforced by a 30-inch-thick concrete core wall. It was a potential weak spot.

WHAT A DIFFERENCE THE RAIN MAKES

CASE SETTLED
WATER SUPPLY ASSURED

The National City Record of February 19, 1891, reported:

Shortly after noon yesterday the streets of National City, not withstanding the steady downpour of rain, were alive with people hurrying from one place to another, each face wearing a broad smile of contentment and satisfaction. Everyone shook hands with everybody else and remarked, "This is the best news I have had in two years."

The news was not about some new improvement to the Sweetwater Dam, but instead about a settlement that would permit the reservoir to be filled up. The Neal Case had been settled. A two-year court battle was over. The future water supply of the National Ranch was assured.

That assurance had been threatened by George Neal when the Sweetwater Dam was raised from 60 to 90 feet. Neal owned 350 acres on the Jamacha Rancho which drained into the Sweetwater Valley. When the dam was enlarged, Neal claimed that the waters flooded his land. The San Diego Land and Town Company offered to buy Neal's land, but, at the price they offered, he refused to sell.

When the suit was taken to court, Land and Town was ordered to either pay Neal $122,567 or within 30 days release enough water to uncover his land. They chose the latter course, but were unable to release enough to completely uncover Neal's land. The U.S. Circuit Court then ordered the company to drill a tunnel around the south side of the dam to let out more water. This procedure reduced the retaining capacity of the reservoir to one-eighth of its designed maximum, essentially negating its value as a water supply.

Land development slowed down following the land bust. Schuyler later wrote that the Neal litigation had been "quite disastrous to the progress of the county depending upon [the reservoir] for irrigation."

Neal eventually agreed to settle for $80,000. The gates of the tunnel were closed and "in the next 12 hours," reported the National City Record, happily, "232,000,000 gallons of water flowed into the reservoir, raising the water [level] four and one-half feet."
SWEETWATER DAM IS SAFE OTAYS OUT

Bulletin — Both Upper and Lower Otay Dams were carried away by the floods, according to authoritative report received Friday evening. Great loss of life and property in the Otay Valley resulted. No details are obtainable.

Bulletin — Water will be pumped into the Sweetwater mains from the Sweetwater river, but it must not be used without boiling. The water stood at the 78-foot level in the Sweetwater dam Friday afternoon. More than a mile of main is washed out and some weeks will be required to make repairs. Repairs will be started soon at the reservoir.

Just as the original structure had had to face its trial by flood, so the new structure would have to also.

On January 14, 1916, the rains came again. Over a period of 14 days, six inches of rain fell at the reservoir. Rainfall was even heavier in the upper watershed. The reservoir filled rapidly. Water reached the dam's top at 3:00 p.m. on January 27 and began pouring over the parapet. At the flood’s crest, a wall of water three-and-a-half feet high was cascading 18 million gallons a minute onto the valley floor.

The rampaging water made short work of the 90-foot earth and rock extension, washing it completely away. And it didn't stop there. It eroded the rock abutments at both ends of the dam to 40 to 45 feet below the top of the parapet, leaving the upper portion of the dam standing alone like a huge monument, with the floodwaters rushing by on both sides. The total runoff for the entire flood was estimated at 46 billion gallons of water.

Ironically, in the midst of an abundance of water, there was a shortage of water to drink. For almost three weeks the area lived without a proper water supply. It would eventually cost close to $146,000 to strengthen the Sweetwater Dam against future floods and to reconstruct its pipelines. But the dam had held, and the arrival of the 1920s would find its reservoir filled to capacity and serving a population nearly double that of 1910.

While one dam was standing, more or less, another was failing—the Lower Otay. The same engineer who built the Sweetwater Dam had reservations about the rockfill construction of the Lower Otay Dam, which he had not built. In his text on dam constructions, Schuyler said, "whether there may be grounds for regret...cannot be known until the stability of the structure is fully tested by the lapse of time." In January 1916 the time lapsed. Full of water, the Otay Dam burst like a bubble. Shortly after 6:15 on the evening of January 27, 13 billion gallons of water swept over the fields, livestock, and homesteads of Otay Valley. The agriculture of the valley was destroyed, and 21 people were reported to have lost their lives. There may have been more because the valley residents were primarily Japanese vegetable gardeners, some of whom may never have been included in the census. John Boal, General Manager of San Diego Land and Town Company, wrote in his diary that the National City and Otay Railroad tracks were washed out and for two days all means of communication were gone except by bay boats.

January 30, 1916
HATFIELD, STOP THE RAIN!

With credentials of successful past experiments at making rain in hand, Charles Hatfield came to town in January 1916. The city of San Diego had hired him for $10,000 on a "no rain-no pay" basis to fill Morena Reservoir.

To earn his $10,000 Hatfield built four rain towers of rough wood on top of Laguna Mountain and began to work his magic. Carrying buckets of water from the reservoir to evaporation pans on top of the tower, he and his brother, Joel, mixed their secret chemicals (thought to be zinc and hydrogen) to produce clouds of vapor, "like fumes from a volcano."

The vapor clouds soon turned into rain clouds. The rain began to fall and continued to fall, and those fumes from a volcano became a monstrous storm. The reporters who at first had doubted Hatfield's feat began to yell to him in his tower. "They want you to make the rains stop."

The rains did eventually stop, after causing the biggest flood in San Diego history. The Morena Reservoir was full and Hatfield was elated. He went into town to collect his fee, but San Diego refused to pay him. If he claimed responsibility for the rain, the mayor said, he would also be liable for the millions of dollars in damage suits that could be filed against the city because of that rain.

The flood that some called "Hatfield's rains," the judge who tried his case called an act of God. Hatfield was forced to leave without collecting his $10,000.

SAN DIEGO
SOUTHERN CALIFORNIA.

ITS ADVANTAGES:

40,000 ACRES
AROUND SAN DIEGO BAY TO SELECT FROM
Developed by the 50 Miles of Railroad and the
SWEETWATER DAM IRRIGATING SYSTEM.

Planted Lands a Specialty.
Price $15 to $50 per acre; easy terms.

San Diego Land & Town Co.
NATIONAL CITY, CAL.
SAN DIEGO OFFICE, 404 Fourth & D Sts (Santa Fe Office)

Carriages to Show Land on Application to Esther Office.

EXPANSION

The population increase in Chula Vista and National City, from 2,333 in 1910 to 4,297 in 1920, brought with it an increased demand for water. Chula Vista had incorporated in 1911 and because of San Diego Land and Town Company's agriculturally oriented sales policy, that city's livelihood came primarily from its thirsty lemon orchards. Celery was a highly profitable second crop. National City's olive groves and Sweetwater Valley's dairy farms and citrus orchards added to the ever-increasing demand upon the existing water supply. As the need for water approached the system's 5,000-acre service area capacity, the necessity for expanding the water supply became apparent.
The owners of the Sweetwater Water Corporation were not willing to invest the necessary capital. In 1920 the company offered itself for sale to the public. On December 20 John Boal made his offer. He gave as reasons, reported The National City News, "that the owners were investors only and not in any sense operators; that the corporation lands were now very largely distributed by sale to individual owners and were not in any way connected by ownership with the water system."

The issue of public ownership had been raised earlier, in 1902, when William Smythe addressed Chula Vista residents on the principles of the California Construction League. Smythe asserted that "the only ultimate solution of the water question is the public ownership of irrigation systems." Now, 18 years later, the public had its opportunity.

In response to Boal's offer, a committee of five prominent citizens was formed to investigate the feasibility of public ownership. A ten-month campaign to buy the system began in February 1921. Major opposition arose, not because of the $850,000 sale price, but because of the inability of the existing system to adequately service its land. The opposition point of view was voiced in the National City Record when, on April 22, E. Thelam asked:

What is the object of forming an irrigation or water district of 13,000 acres when we have only water enough to supply a small part thereof, and when we have no resources in sight anywhere to develop more? To my mind it is a wildcat proposition which should be rejected.

And rejected it was by a three-to-one vote in December 1921, with only Bonita voting in favor. Six years later the company was sold to the same group whose engineers had been hired to appraise the water system for the proposed 1920 sale. In 1927 Loveland Engineers, under the presidency of Chester Loveland, acquired the Sweetwater Water Corporation—the first of several public utilities the Loveland group would own.

### Proposition Submitted to Citizens' Committee

**Statement Read by Chairman of Investigators**

"That Has Come When It May Be Well to Form a District and to Acquire the System if this Can Be Done on Favorable Terms."

On December 20, 1920, John R. poet raised in a room full of representative water users resident within the district served by the Sweetwater Water company and announced that the previous owners of the property were determined to sell the system. He gave as reasons, among others, that the owners were investors only and not in any sense operators; that the corporation lands were now very largely distributed by sale to individual owners and were not in any way connected by ownership with the water system. The advisability of public ownership was discussed just prior to the meeting and at its conclusion a committee consisting of E. J. Allen of Bonita, J. W. Mertin and Thomas J. B. Hinkle of Chula Vista, Oliver como and E. L. Fisk of National City was appointed as investigator.

People Defeat District

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MOUNTAIN SWEET WATER

At the Eastern ridge of South Cuyamaca Peak the river has its source "in some cold springs near an old Indian village called Japatlal." An Indian legend tells of Moto Ptid Pit, an Indian strong enough to pull down any one of the largest trees in the mountains with one arm. He had numerous young and pretty wives whom he treated badly. Because he didn't like the water that was readily available in the lower valley, he forced his wives to bring him the "sweet water" from up near the mountain peak. His family, finally tiring of this chore, conspired to get rid of Moto Ptid Pit. One day, when he was asleep in a deep gorge where he lived, a mile below Green Valley, "they bound him fast and set fire to his house. In his struggles, the neighboring hills resounded with his-throes. In vain! He perished." Moto Ptid Pit perished but that "sweet water" went on to supply the generations to come and service the owners of land along the river's edge. (taken from an 1875 issue of the San Diego Union)
"Loveland Dam Hailed as Boon to Community"

Lake Loveland's $2,000,000 dam and reservoir on Sweetwater river will spell development and growth in the National City and Chula Vista areas, Chester H. Loveland, of San Francisco, for whom the dam was named, said yesterday at dedicatory rites at the dam site near Alpine.

Saying that nature cannot provide this one vital element of life without great effort and sacrifice on the part of residents in this area, Loveland praised vision, skill and energy of those who created the structure. "The new dam assures adequate water not only for the present but for the future, and means communities it serves now can expand with the full knowledge of an adequate supply of water for domestic, industrial and irrigation requirements," he said.

San Diego Union, September 12, 1945

One of the new owner's first moves was to search out new sources of water reserves. Taking up an idea that had been expressed as far back as 1888, when the Guide to the San Diego Land and Bay Region stated, "in time still other dams will be put in higher up the river until we have the best irrigation system in Southern California," President Loveland looked toward the source of the Sweetwater system for a suitable reservoir site.

During 1927 and 1928, Loveland Engineers conducted preliminary investigations in the vicinity of Sweetwater Falls, the most likely spot for a new dam. The site looked promising, and the company began quietly buying the necessary Upper Sweetwater land, setting up working farms to conceal the reason for the land acquisitions. According to P.D. Rice, Manager of The Sweetwater Corporation in 1935, the secrecy was an economic necessity. He wrote, "had the owners of the Company announced their intention of acquiring the reservoir site lands and of their development, prices greatly in excess of the agricultural value ... would have been asked."

In 1930, after the company's plans had become public knowledge, an application was filed with the State Division of Water Resources "to divert 18.6 cubic feet per second and store 40,000 acre-feet per annum at Sweetwater Falls." Depression-era financial woes and problems in meeting State Engineer requirements caused extensive delays, and by 1941 construction of the dam had yet to begin.

Loveland's Sweet Water - 1945

Then came World War II. The war economy, combined with the coming of Rohr Corporation, led to the third land boom in less than a century. The demand for water intensified, but wartime restrictions prevented the company (now reorganized as the California Water and Telephone Company) from acquiring the necessary materials for construction.

The dilemma was resolved when the water company was able to acquire a certificate of necessity from the government to buy materials, and Loveland was able to come up with the necessary financing. Excavation began in October 1943, and in less than two years, on July 17, 1945, the dam at Sweetwater Falls was completed.

It was dedicated at a luncheon in September 1945 and christened Loveland Dam after the personality of the 1930s who was most responsible for getting it built. The dam, costing $25 million to build, doubled the storage capacity of the Sweetwater system. Water from the reservoir flowed along the riverbed 18 miles to the lower Sweetwater Reservoir. (The wartime scarcity of materials, along with their high cost, prohibited the construction of a pipeline connecting Loveland to the Sweetwater Reservoir.) The building of the dam promised to eventually provide sorely needed additional water to an area that was close to exhausting its available reservoirs, but reservoirs take time to fill, and time was short for San Diego County.

LOVELAND DAM (1945)
Constructed 1943-45 and owned by California Water and Telephone

<table>
<thead>
<tr>
<th>Height of Dam</th>
<th>203 feet</th>
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<tbody>
<tr>
<td>Length of Dam at top</td>
<td>765 feet</td>
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<tr>
<td>Length of Dam at base</td>
<td>50 feet</td>
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<tr>
<td>Thickness of masonry at base</td>
<td>80 feet</td>
</tr>
<tr>
<td>Thickness of masonry at top</td>
<td>8 feet</td>
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<tr>
<td>Area of watershed</td>
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<tr>
<td>Area of reservoir</td>
<td>454 acres</td>
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<tr>
<td>Capacity of reservoir</td>
<td>8,927,687,000 gallons</td>
</tr>
<tr>
<td>Elevation of top of Dam above sea level</td>
<td>1355 feet</td>
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</tbody>
</table>
"Aqueduct Fulfills Promise"
San Diego Daily Journal
May 6, 1948

The demand for water had increased greatly after war-effort industries came to San Diego, making it paramount that San Diego County find a ready source of additional water, and quickly.

The city of San Diego, showing great foresight, had prepared itself back in the 1920s for the inevitability of having to look beyond local water supplies to meet the growing population needs. To that end, the city applied for an appropriation of 112,000 acre feet of water per year from the Colorado River. Eventually, the Secretary of the Interior decided, in response to persuasion from county civic leaders, that the application had been made on behalf of the entire county. This led to a county-wide effort to get Colorado River water. According to William H. Jennings, a lawyer active in local water projects for many years, the San Diego Chamber of Commerce in 1934 or 1935 "formed a group to discuss ways and means of importing water..." Their discussion led to the passage by the State Legislature, in 1943, of the County Water Authority Act, which authorized the formation of the San Diego County Water Authority—an agency formed to supervise the distribution of Colorado River water.

The California Water and Telephone Company had been "cautious," according to its District Manager at that time, Al Poulter, about the cities of National City and Chula Vista joining the County Water Authority. Loveland Dam was under construction, and there was some question whether imported water was necessary. But, according to Jennings, while some people had hoped that San Diego could handle its own water supply, by the time of the election the "reality of the situation had hit most people. It was better to join than ration." Chula Vista and National City voters approved the proposition to join the San Diego County Water Authority, and on June 9, 1944, the water agency was formed. Coronado joined its South Bay neighbor cities as one of the nine original members of the County Water Authority, but withdrew a short time later.

The Metropolitan Water District of Southern California, formed in 1928, had already tapped the Colorado for servicing the Los Angeles area. The proximity of its aqueduct, roughly 70 miles north of San Diego, made it feasible and cost-effective to build a southern extension. The Federal Government, to supply the military installations in San Diego County, began the project. It designed, surveyed, and contracted for the construction of the aqueduct, but then, as the war's end neared, decided that it was no longer necessary. However, with the Navy's assistance, the San Diego County Water Authority persuaded the Government to revive the project. Construction began on September 12, 1943. On December 11, 1947, less than two years and three months from groundbreaking, water began flowing from the portal of the San Jacinto tunnel in Riverside County down to San Diego's San Vicente Reservoir.

Five months later, on May 5, 1948, the 16.3 mile La Mesa-Sweetwater extension, from San Vicente to the Sweetwater Reservoir, was also completed. It cost $1,362,000 and doubled the available water supply of the Sweetwater system. (Later, a second aqueduct was constructed. Completed on May 6, 1960, it crossed the river gorge and passed west of Sweetwater Dam and within several hundred yards of the planned water treatment plant at Sweetwater Reservoir. The second aqueduct provided direct service from the Los Angeles Aqueduct to the reservoir, eliminating the need for the La Mesa-Sweetwater Extension.)

Water flowing in ditch blasted from La Mesa - Sweetwater Extension pipeline to Sweetwater River

The arrival of Colorado River water via the La Mesa-Sweetwater Extension in 1948 was celebrated at a ceremony held at the Sweetwater Reservoir on that May 5th day. (Truly celebrated because the Sweetwater system, during the construction of the extension, had been receiving emergency water supplies from the (City of San Diego.) One hundred and fifty men gathered to hear about the promised bounty more water would bring. National City Baptist minister Watson Brown's dedication speech set the tone by starting off with the Biblical passage, "The desert shall be filled with springs of water, and the valleys shall blossom as a rose." The highlight of the day occurred when the mayors of National City and Chula Vista joined hands to open the valve to start water flowing through the pipeline.

Sixty years after the first water celebration, the arrival of Colorado River water had finally brought assurance that the lands of National City and Chula Vista would continue to be cultivated and their consumers' thirsts quenched.

But the residents of the Sweetwater Valley had been left out. They were not entitled to the Colorado River water because they did not live in either Chula Vista or National City. Therefore, to accommodate the water needs of the growing population in this rural, agricultural area, the city of Chula Vista agreed to assign its water rights to a new organization: the South Bay Irrigation District (SBID).

Organized in March 1951 (and still in operation in 1988), the South Bay Irrigation District included Chula Vista and the unincorporated area of Sweetwater Valley. The district's voters elected five directors to four-year terms. Under the directors' guidance, SBID's function was to obtain rights to Colorado River water from the San Diego County Water Authority and franchise California Water and Telephone Company to sell the water to the district's water consumers.

About this time, because of the rapid growth in the number of urban water users, public concern shifted from water availability (the major concern of farmers) to water quality. That shift led to a disagreement between the public and the water company regarding the direction in which the water company should move in order to best serve its customers. The result would be a campaign for public ownership of the water company that would not be settled until 1977.
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Two years after the formation of SBID, talk of public ownership resurfaced. The increase in domestic water users (from 45% of all users in 1940 to 60% in 1954) focused attention on the safety of the water. Consumers had begun complaining about dirty water. This, together with talk of a fourth water rate increase since 1948 and a California Water and Telephone Company dispute with National City over transmission mains in its industrial area, prompted the city to hire a consulting firm—Utility Service Company of Palo Alto, headed by J.H. Jamison. According to a January 22, 1953, article in the Chula Vista Star News, the company was hired so National City could “obtain our own answers to questions about water” in place of sitting idly by and accepting statements relayed to us by the water company.”

The “answers” turned out to be a resolution passed by the city council of National City on June 2, 1953, to hold an $11 million water revenue bond election to buy out the water company.

A campaign flyer of the opposition to the bond election portrayed the consulting firm’s owner, Jamison, as a “fast talker who sold the city a bill of goods.” Receiving a $750 advance and an $6,500 retaining fee, with a promise of $41,250 when the bond issue sold. Jamison appeared to be the person who would profit the most from the election.

A committee calling itself the Citizens’ Better Water Association, chaired by Mayor “Ace” Carrigan, looked for supporters who believed the success of the bond election could bring a filter plant for better water at no increased expense to the water consumer. The idea, according to the Better Water Association, was to finance the estimated $11 million purchase price and the cost of building a filter plant for National City out of the $1,069,159 annual revenue from water sales. The promise sounded good, but the election was lost by a vote of 2,355 to 1,233.

Working as an entity separate from the South Bay Irrigation District, National City had trouble explaining to the voters its satisfaction of the legal and technical problems of splitting the water distribution system between the two areas could be solved. The water company remained in the hands of California Water and Telephone, which took the hint and began plans for building a filter plant—a move that would save the water company from a second attempt at public ownership seven years later.

That attempt, in 1960, resulted in a second bond issue that had its beginnings in a 1956 feasibility study, conducted by the firm of Leeds, Hill and Jewett, which concluded that “the sale of [the] Sweetwater System to a public agency ... would be in the best interests of all concerned.” A 1960 update of that study recommended the acquisition of the system exclusive of Loveland Dam and surrounding lands because Loveland’s purchase price would place a “heavy burden on the consumers of water”—a cost many times greater than the purchase of water from the San Diego County Water Authority.

Continued on page 17
QUALITY CONTROL

In 1960, the nearly completed filtration plant promised to fill the pressing need for clean water. It had been a long time coming. According to Henry Meyers, the Sanitary Engineer for California Water and Telephone Company, "in the early days the local economy was based on cheap citrus irrigation. The idea for a filter plant was fought by the major users because they would have to bear the largest portion of the cost." But by 1960 the major users were no longer farmers but homeowners, who were concerned that the water pumped into their homes be clean and safe.

In April 1961, the consumers' concerns were eased. The $1.5 million Sweetwater Filtration Plant was completed. Built next to the Sweetwater Dam, the plant was dedicated on September 7, 1961. Its water came from two sources—the aqueduct and local runoff impounded from the Sweetwater River. The 25 million gallons of water that could be filtered each day met the current needs of the growing population of the South Bay.

The completion of the filtration plant stopped, for a time, the drive for public ownership. The water company's backers were relieved and happy. Evan R. Peters, vice-president of public relations firm Russell Pierce and Company, wrote to DeWitt Higgs, water company lawyer, "Congratulations on the re-slaying of the multi-lived dragon. Let us hope that this one will stick for at least another seven years."

It stuck for exactly seven years. In the eighth year the dragon reappeared and touched off a battle that climaxed in a third, and finally successful, bid for public ownership.

THE DRAGON THAT WOULD NOT DIE

While the public ownership drive was slowing down, private ownership of the water company was changing. In 1964 California Water and Telephone was acquired by General Telephone and Electronics Company. Two years later a Delaware company, American Water Works Service Company Inc., "the largest investor-owned system of its kind in the country," bought the water company, along with several other systems, for $41 million (the cost for the Sweetwater system was $14.9 million). Operating as a subsidiary of American Water Works, the local water company was now called California American Water Company.

It was not long before rumor of water rate increases, in spite of General Manager Al Poulter's assurances otherwise, caused the dragon of public ownership to again raise its fiery head.

But this time a new player joined the game. The threat of another water rate increase, along with the lack of maintenance of the company's system, convinced the South Bay Irrigation District that now was the time to act. On May 10, 1968, SBID filed suit of eminent domain to acquire the Sweetwater system of the California American Water Company; National City was finally ready to abandon its, go-it-alone stance and, on January 28, 1969, joined the suit. A lengthy trial commenced in November of 1971. It was not settled until May of 1977.
The main dispute was over determining just compensation to California American Water Company for the system. Superior Court Judge James Focht’s determination, in 1973, of $14,484,000 as the August 15, 1969, value of the water company did not satisfy the company’s owners. They estimated the worth of the company’s holdings at close to $50 million. The $35 million disagreement led the water company first to the Court of Appeal and then to the California Supreme Court, which denied the company a hearing.

California American was all but beaten. Believed to have been the "biggest water utilities case ever tried in California courts... and the biggest single property condemnation suit in county history," according to a June 1972 edition of the Chula Vista Star News, the case ended the 50 year, on again, off again, battle for public ownership.

To avoid the expense of a second trial, the company negotiated a settlement. It would now be up to the voters to decide if they wanted to own the system. On May 31, 1977, an election was held to authorize the $22.5 million worth of bonds needed to buy the water company. (Judge Focht’s original $14 million award had been increased to $19,036,000 because of the inflationary time lapse between the 1969 valuation and the 1977 negotiation. Operating funds and reserves accounted for the extra $3.5 million.)

The combined efforts of National City’s civic leaders and the South Bay Irrigation District convinced just enough voters, and the bond issue was narrowly passed by a vote of 9,653 to 8,078. The local headline read...
In 1978 Loveland Reservoir spilled over for the first time in its history, showing skeptics who questioned the value of its construction that it could not only pay for itself but help pay for the entire system. The low cost water the dam produced created operating cost savings, making funds available to help correct deficiencies elsewhere in the system.

One major deficiency was old, worn out pipes. Eighteen thousand feet of original turn-of-the-century steel pipeline on Sweetwater Road had to be dug up and new pipeline installed.

Although maintenance took first priority, management could not ignore needed improvements. The blending, in 1976, of Feather River water from the State Water Project with Colorado River water had amplified the importance of improving the filtration plant. (One of the conditions of approval by the voters for the State Water Project was that the reservoirs along the route would be open for public recreational use. Consequently, the Feather River water exposed the Sweetwater Reservoir to the threat of bacteriological contamination.) Because the cost of the improvements was beyond the company's financing ability in 1979, they were designed several years ahead of implementation.

In the interim, a second project began—a project that Sweetwater Authority directors think has "greatly improved" the system—the construction of the nearly 19 million gallon capacity Bonita Valley Reservoir. Partially financed from savings achieved from use of local water and completed in 1985, the reservoir nearly doubled the amount of stored, treated water available in the water system. An underground concrete structure with two feet of earth on top, the Bonita Valley Reservoir, says Butterfield, "improved the reliability of the system and provided an emergency supply of water to the western part of the system."

The filtration plant itself was, by May 1987, refurbished and expanded to meet the water quality standards that had been established by the public health department in 1978. Eight million dollars worth of improvements included a new main control room and water laboratory, and sedimentation basins to remove suspended matter from the water before filtration. (All these improvements were made without interruption of the services of the water treatment plant.)

Along with a physical facelift and expansion, the plant was dedicated under a new name—the Robert A. Perdue Water Treatment Plant. Perdue had been the Superintendent of Water Quality from the inception of public ownership in 1977 to his death on November 3, 1985. "His death," said Butterfield, "left a big hole in the organization." Perdue had been involved in the design and construction of the plant from the beginning and had worked hard to insure that the facility included all the necessary features to deal with variations in raw water quality.

After Perdue's sudden death at age 39, before the plant's completion, the board, recognizing the role he played in the filtration plant's construction, dedicated the plant "not only in his memory but in his name."
DREAMS FULFILLED

100-year-old masonry juts from the smooth surface of the Sweetwater Dam.

One hundred years of memories went into that dedication in May of 1987. A hundred years of history are celebrated in April of 1988. The Sweetwater Authority continues the tradition begun when Frank Kimball formed his water company and looked for a way to store water.

In just over a decade, the Sweetwater Authority has made great strides. The years of deferred improvements are over. In fact, Sorensen, who used to be an employee of California American, can now boast that in just over ten years of public ownership $25 million has been used to improve the system.

Those millions of dollars invested on behalf of the people reflect a strong desire to serve the community and continue the vision of the founding fathers. The hundreds of miles of pipeline, the filtration system, the additions to the dam itself, all rest on the solid foundation of the 90-foot marvel of its age—the dam that Kimball, Dickinson, and Schuyler built. The celebration of that dam's 100th birthday is also a celebration of a water company that is determined to continue its struggle for water, while striving to make the second 100 years as colorful and farsighted as the first.

HONORED MEMBERS

The plaque in the patio of the Sweetwater Authority reads: “This atrium [is] dedicated in honor of Lloyd L. Lee—30 years of his life were devoted to the development of a reliable water supply.” As a tribute to the man often called the "patriarch of the board," that plaque reminds the public of the instrumental role Lee played in the formation of both the South Bay Irrigation District and the Sweetwater Authority. Lee, a building contractor, began his service as a board director in 1956 and continued serving through the crucial transition to public ownership.

A second long-serving member of SBID was David Burns. An assistant right of way agent for Cal Trans, he joined the board of SBID in 1969, during the years of the condemnation trial. He played a major role in the formation of the Sweetwater Authority in 1972 and was chairman of SBID in 1977 when the bond election for public ownership was held. Both Burns and Lee were instrumental in shaping the developments of the Sweetwater Authority.

VISIONS CONTINUED

Today's water quality standards require exotic instruments.
ONE HUNDRED YEARS OF WATER

June 3, 1868  Frank Kimball's diary entry: "I rode to the northwest corner of Rancho de la Nacion and beheld the finest water power [site] that I ever saw in my life."

1868  Pioche signs term sale agreement with Kimball Bros. for Rancho de la Nacion for $30,000 (June 18)

1869  Kimball Brothers Water Company formed (May 26)

1871  Kimballs make last payment on Rancho de la Nacion (July 8)

1879  10,000 acres of National Ranch to Boston railroad for promise of line to National City

1880  Kimball Bros. Water Company sold to Lucius Pratt

California Southern Railroad chartered (Oct. 12)

1881  San Diego Land and Town Company of Kansas organized (Jan. 19)

Pratt sells Kimball Water Co. to San Diego Land and Town (Aug. 26)

1882  Railroad track to Colton completed (Nov.)

1885  Santa Fe Railroad line completed from the East (Nov. 21)

1886  Dickinson becomes general manager of San Diego Land and Town Company (Aug. 15)

Sweetwater Dam construction begins (Nov. 17)

1887  National City incorporated

Schuyler takes over supervision of dam construction (Feb. 1)

Dickinson gets permission to increase dam height from 60 to 90 feet (May 26)

First passenger train of National City and Otay Railroad (July 23)

1888  Sweetwater Dam completed (April 7)

National City Celebration (April 19)

Dickinson lays Chula Vista town plan

1895  Flood—Sweetwater Reservoir overflows (Jan.)

San Diego Land and Town Co., conveyed to Chas. Lanning, receiver (Sept. 18)

1896  Sweetwater Dam raised to 96 feet

1897  San Diego Land and Town Co. of Maine buys San Diego Land and Town Co. (Aug. 2)

Drought begins

1902  Sweetwater Water Company buys water rights of San Diego Land and Town Co. (July)

1904  Drought ends

1910  Sweetwater Dam raised to height of 110 feet

1911  Chula Vista incorporated (Oct. 11)

1916  Flood—Lower Otay Dam bursts—Sweetwater Dam holds (Jan. 27)

1920  Sweetwater Co. sells to Sweetwater Corporation (Jan. 1)

1921  Sweetwater Corp. offers to sell to public—voters say no

1922  Loveland land purchases begin

1927  Sweetwater sold to Loveland Engineers as "The" Sweetwater Corp.

1935  The Sweetwater Corp. becomes California Water and Telephone Co. (Nov. 18)

1943  Loveland Dam construction begins

1944  San Diego County Water Authority formed (June 9)

1945  Loveland Dam completed (October)

1947  San Diego Aqueduct completed (Dec. 11)

1948  La Mesa-Sweetwater Extension completed (May 5)

1950  First National City well drilled

1951  South Bay Irrigation District formed (March)

1953  National City attempts public takeover of California Water and Telephone Co.

1954  Second pipeline of aqueduct completed

1955  Second National City well drilled

1960  National City tries to split from Sweetwater system—voters say no

Filtration Plant construction begins

Second Aqueduct finished (May 6)

1961  Filtration Plant completed (April)

1964  California Water and Telephone acquired through an exchange of shares by General Telephone and Electronics Co. (June 26)

1966  American Water Works Company of Delaware buys California Water and Telephone Co.—Sweetwater subsidiary called California American (March 31)

1968  South Bay Irrigation District files suit to acquire California American (May 10)

1969  National City joins condemnation suit (Jan. 28)

1972  Sweetwater Authority formed (Feb. 3)

1973  Superior Court judge awards California American $14,485,000 as just compensation California American appeals judgment (May 14)

1976  State Water Project water from Feather River becomes available

1977  Water system value settled at $19,036,000

Bond issue to buy water system passes (May 31)

South Bay Irrigation District acquires water system. (Aug. 30)

1978  Loveland Dam overflows for first time

1979  Water System Master Plan completed by James M. Montgomery Engineers, Inc. (June)

1984  Sweetwater Authority moves offices to Garrett Avenue

Completion of construction through Bonita of 42-inch steel pipeline replacing the 24-inch riveted steel pipe installed in 1888.

1985  Bonita Valley Reservoir completed (18.7 million gals.)

1987  Sweetwater Filtration Plant expanded and rededicated as Robert A. Perdue Water Treatment Plant (May)

1988  Observance of 100th Anniversary of completion of Sweetwater Dam (April 24)
MANY THANKS TO the following people who gave of their time, opened their libraries, searched their memories, shot and reshoot photos, read copy, and, most importantly, supported all stages of this project.

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California Section Book Collection, California State Library 7B
John Rojas, Jr., Chula Vista Historical Society 4TL, 8M

T - Top,  B - Bottom  M - Middle  R - Right Hand  L - Left Hand
March 9, 1988

The Board of Directors and Management of Sweetwater Authority wish to commend Leslie Trook for her careful research and thoughtful preparation of this account of the history of the Sweetwater Dam and water system.

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