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**C. W. CO.
FILE**

August 18, 1913.

Mr. J. B. Lippincott,
Grand Hotel,
City.

Dear Sir:-

Enclosed please find two sheets - Summary of Evaporation for 1912 and 1913, for Warners, Cuyamaca and La Mesa.

This constitutes practically all of the actual measurements that have been made under my supervision with some partial interpellations as noted.

Very truly yours,

WK

SAN DIEGO, CALIFORNIA, March 1, 1915.

Mr. J. B. Lippincott,
1100 Central Bldg.,
Los Angeles, Calif.

My dear Mr. Lippincott:

As per your request, I write you in relation to the cost of lands and riparian rights of the Volcan Project, as follows:

There has been invested in the Volcan project by the purchase of lands to the amount of \$2,633,000. This includes interest to date. Of the above amount \$1,013,350 was used in the purchase of riparian lands below Warners Ranch on the San Luis Rey River alone.

You have asked me to give you my estimate of the cost of the riparian rights on both streams. That amount I have determined as \$823,540. Part of that is actual cost for the purchase of riparian rights; part of it is determined by estimating the value of the riparian rights at one-fourth their purchase price. In some cases it will reach as high as 50%; in other cases it is less than 25%.

Mr. Harroun was furnished with complete data, and gave us the following:

Investment value of lands, rights of way, construction, general, and all other items except power,	\$1,325,000
Cost value of riparian rights, as per my statement,	<u>823,540</u>
Total,	2,148,540

This cost value of \$823,540 includes the cost of the Government and Escondido Mutual Water Co. water rights, which totaled to May 1, 1914, \$69,573.61, which I have included in my

J. B. L.,

-2-

statement today at \$75,000.

This does not include, however, any charge for my services for several years, excepting actual expenses, nor any charge for services of William G. Henshaw.

Nor have I added in that amount the continued losses by the purchase of the Warners Ranch. Mr. Henshaw's interest losses by the purchase of this ranch alone amount to between \$40,000 and \$50,000 a year. This ranch had to be purchased in order to carry out the Volcan Water Company's scheme for water development.

Also, my understanding is that Mr. Harroun gave only a valuation of \$100 an acre for the Warners Reservoir site. I consider this value extremely low, as all of it is first-class bottom land.

Again, in Mr. Harroun's report was not included all the costs of the Pacific Light and Power Co. for services, etc., amounting to many thousands of dollars, before the Volcan system was acquired by Mr. Henshaw, and necessarily a part of the project.

This also does not include any promoter's profit. Certainly, Mr. Henshaw has taken many risks, and is entitled to a liberal reward. Just for argument's sake, suppose that nothing had been done; that the City of San Diego was now going out to acquire these 300 or 400 ranches, these 60 or 70 miles of rights of way; these different reservoir sites. Please take into consideration the year's of hard work in determining where the reservoir sites are, and which are the best. All of this takes time, and would

J. B. L.,

-3-

unquestionably cost the City of San Diego to condemn at the present time at least twice the price asked for same by Mr. Henshaw.

And in addition, at least two or three year's time has been saved to the city by having this data we have acquired, as well as the ownership of the properties.

In closing, I wish to call your attention to one fact.

Mr. Harroun gave a valuation of only \$10,000 for power. You know this is a joke. The following is a copy of J. G. White & Co's. report:

"VII EARNINGS.

ELECTRIC.

Assuming a wholesale market at San Diego for the entire electrical output delivered at the low tension side of the sub-station transformers and a rate of 1¢ per k.w.h., with a load factor of 50%, the financial results of that part of the project should be about as follows:

These results are promised upon normal conditions and skilled and competent management.

Gross income from sale of	
20,586,000 k.w.h. @ 1¢.....	\$205,860.00
Operating expenses including	
taxes, maintenance and repairs....	50,320.00
Net after operation.....	149,540.00
Interest charges, 7% on	
estimated cash cost.....	75,966.00
Surplus.....	\$ 73,574.00

The above interest charges do not include allowances for cost of water or water rights, lands, rights of way, or franchises, now, as before stated, does our estimate in-

J. B. L.,

-4-

clude the cost of a distributing system in San Diego."

Certainly, the above statement from J. G. White & Co. carries some weight, and in my opinion, the power alone has a value of approximately one-half million dollars.

When you include all the above items in determining the basis for a valuation of this system, I cannot for the life of me see how any man can place a value of less than three or four millions of dollars. And this opportunity to buy which the City of San Diego now has will never come again.

I frankly admit that I am opposed to the sale of the Volcan system at the price Mr. Manshaw has offered it, for I don't believe he is getting value received, if it is possible for him to carry out his original intention of forming a mutual water company.

My understanding is that this letter is confidential, and is to be shown only to Mr. Lippincott.

Yours very truly,

F-S

SAN DIEGO, CALIFORNIA, March 11, 1915.

Mr. J. B. Lippincott,
1100 Central Bldg.,
Los Angeles, Calif.

My dear Mr. Lippincott:

Enclosed find determination of the value of water rights of the Cuyamaca Water Co. by comparison with the City of San Diego's cost.

I sincerely hope that in your report you will declare what in your opinion, from your investigation, should be considered a reasonable cost for municipal water delivered in University Heights reservoir for the City of San Diego. Personally, I consider that the price of 10.72¢ per thousand gallons is a reasonable cost as compared to cost of water all over the state.

Let me know what you think of this method of comparison in determining the water right values for the Cuyamaca? Criticise it, please.

Yours very truly,

Manager.

F-S

J. B. LIPPINCOTT, CONSULTING ENGINEER
MEMBER AMER. SOC. C. E.
MEMBER AMER. INST. M. E.
MEMBER PACIFIC ASSOC. OF CONS. ENGRS.

EDWARD R. BOWEN, STRUCTURAL ENGINEER
ASSOC. MEMBER AMER. SOC. C. E.

ENGINEERING OFFICES OF
J. B. LIPPINCOTT
1100-1101 CENTRAL BUILDING
LOS ANGELES, CALIFORNIA

March 18, 1915.

Mr. Ed Fletcher,
Fletcher Building,
San Diego, Cal.

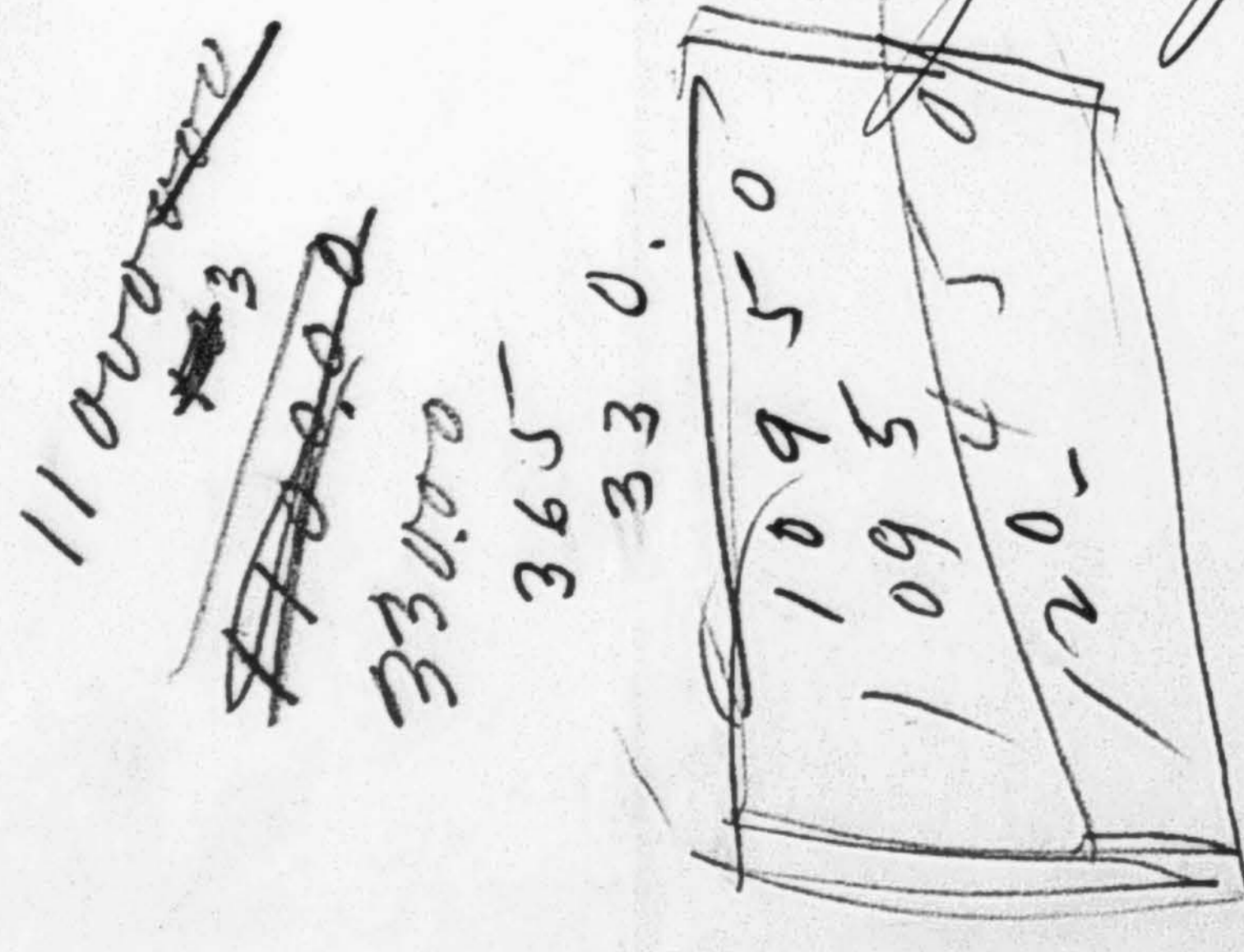
My dear Sir:-

This morning I informed you that we had found the safe net yield from the Warner Reservoir as approximately 9,000,000 gallons delivered from a reservoir with a surface area of 4000 acres. I roughly estimated these figures from memory and they were somewhat in error. The gist of what I was telling you, however, was correct, and we have found no error in our computations. We find approximately that a reservoir having 2960 acres of surface area will yield about 8.1 million gallons daily with safety, and that when the surface area is 4000 acres the yield will be approximately 10.7 million gallons daily. Please do not use these figures as final figures because we do not consider that we have completed all of our checks on this report as yet.

Very truly yours,

J. B. Lippincott

JBL-w.



J. B. LIPPINCOTT, CONSULTING ENGINEER
MEMBER AMER. SOC. C. E.
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1100-1101 CENTRAL BUILDING
LOS ANGELES, CALIFORNIA

March 18, 1915.

Mr. Ed Fletcher,
San Diego, Cal.

My dear Sir:-

Again referring to the rights which Mr. Henshaw proposes to convey to the City of San Diego on the San Pasqual Valley, it is my recollection that the Linda Vista Irrigation District acquired certain rights to divert water from the Santa Ysabel River from the people living in the San Pasqual Valley, that Mr. Henshaw became the successor of the irrigation district to these rights to divert. This agreement probably protected the local irrigation interests in the San Pasqual Valley.

In your Schedule to accompany the offer of sale to the City of San Diego on page 18 under 10 M there is a list covering lands in Sections 35 and 36, Township 12 South, Range 1 West, S.B.M. Your memorandum reads as follows:

"All right in all lands in Sections 35 and 36, T. 12 South, Range 1 West, as per agreement of Sept. 18, 1889, includes rights under appropriation, right of way 50 feet wide and reserves right to certain number of miner's inches for irrigation on the following described lands:"

then follows a list of ten pieces of land in said sections. If agreeable to you I would like to have a copy of this agreement of September 18, 1889 which I presume is between the old irrigation district and these land owners which Mr. Henshaw now holds. It is my further understanding that Mr. Henshaw proposes to reserve these water rights for the irrigation of the lands mentioned and not to convey them to the City of San Diego and that he does not propose to transfer the title of these lands to the City of San Diego.

Very truly yours,

J. B. Lippincott

JBL-w.

SAN DIEGO, CALIFORNIA, March 22, 1915.

Mr. J. B. Lippincott,
1100-1101 Central Bldg.,
Los Angeles, Calif.

My dear Mr. Lippincott:

Answering your two letters of March 18th, will say that to say the least I have been very much interested in your figures as to the quantity of water from Warners Dam.

My understanding is that your figures are for a municipal supply, net safe yield. Now, if that is the case, of course you must take into consideration the municipal value, which is at least \$7000 to \$8000 an inch, and if we took the same drastic method of determining the net safe yield of the City of San Diego's system the cost of delivery would be nearer \$15,000 or \$20,000 per miner's inch. Is this not so?

I notice that you have not yet taken into consideration the following facts:

1st. By our spending approximately \$200,000, we can acquire all the riparian rights below San Pasqual Valley to the Ocean. From the San Pasqual Valley, for an emergency, undoubtedly 500 to 1000 inches of water can be pumped for four to six months of the year, during the dry seasons.

Then again, undoubtedly some water can be pumped from lands on the outside rim of Warners Reservoir, where I am satisfied there is an abundant supply for an emergency.

I believe it is absolutely vital to our interests, and only fair that you should personally investigate these two sources of supply, and take same into consideration before officially making your report, and I sincerely hope you can see your way clear to make an alternate report including the pumping possibilities. I have instructed Mr. Post to write you fully on the subject.

My understanding also is that your figures represent the absolutely net safe yield during the driest years. It seems absolutely cruel to our proposition to be put on this basis, when by the expenditure of \$200,000 or \$300,000 for pumping rights and pumping plants at least an additional 1000 inches of water can be developed during the critical period. It seems to me this is going to the extreme.

J. B. L.,

-2-

It is not my intention or desire to criticize you, Mr. Lippincott. All I ask is a square deal to Mr. Henshaw's proposition, and I am sure we will get it.

Now, in regard to the riparian rights acquired by the Linda Vista Irrigation District in the San Pasqual Valley, Mr. Alverson, who was the engineer for the Linda Vista Irrigation District, and whom you know, is authority for the statement that those agreements are valid. This applies to the East San Pasqual ditch, and compels us to furnish them their full quantity of water to June first, and then after that eleven inches of water.

From conversation with my attorneys, I am also of the opinion that these rights are valid, and that we can go ahead and build the dam under conditions specified in that agreement.

Now as regards the lands below, which we own, we are not reserving any water rights whatsoever, or making any reservations for any water out of West San Pasqual Ditch, so far as same is affected by the construction of Pamo Dam, and we shall give up any rights that water be stored in Pamo Dam, upon the riparian rights below which we control.

A copy of this letter has been sent to Mr. Henshaw for his approval, and he will no doubt write you on the subject.

Yours very truly,

F-S

March 25, 1915.

Mr. J. B. Lippincott,
1100 Central Bldg.,
Los Angeles, Cal.

Dear Sir:-

In further reply to your letter of March 18th to Mr. Fletcher, I enclose copy of agreement of September 18, 1889 as referred to in our schedule. I also enclose a letter addressed to Mr. O'Shaughnessy enclosing the same agreement and making a further statement regarding the ditches which inadvertently was not mailed to you at that time.

Yours very truly,

Engineer.

WSP-BK

Enclos.

And in further consideration of the premises, we have
John B. Judson, et al

In consideration of the benefits to accrue from the building of the works of the Pamo Water Company upon the Bernardo or Isabel River in the County of San Diego, State of California, and of One Dollar (\$1.00) to us paid, we hereby grant individually and collectively unto said company, a Corporation existing under the laws of California, and doing business at San Diego, California, all our rights of every description, both joint and several, either as riparian owners, or appropriators, or grantees of appropriators in and to the waters of the said stream or appertaining to the following described lands lying in the valley known as San Pasqual upon said River and in said County and State, to wit: All lands owned by us in Sections 35 and 36, Tp. 12 South, Range 1 East, S.B.M.

This grant is to include all our rights under an appropriation of thirteen hundred and fifty (1350) miners inches of water, measured under a four (4) inch pressure, made under the laws of California in the year 1876, by John Judson, A.F. Brown, W. B. Stewart, John Clevinger, and Archibald Clevinger, and is to operate as a perpetual right to impound, divert and carry away the waters of said stream, at point on said stream within two miles of the lower end of Pamo Valley on said stream. And the said Company is hereby constituted the sole and perpetual * of ourselves and of the land above described and of its future owners, tenants, or possessors, to impound and divert the same, and all damages therefor are hereby expressly waived and released. And said grant and said agency shall be and run with the land in the nature of a covenant forever.

And in further consideration of the premises, we grant unto the said company a strip of land fifty (50) feet wide, for a perpetual right of way, with right of ingress and egress across said land or any of our lands adjoining the same, upon such line as it may hereafter locate the same. Said right of way to be for the aqueduct of said Company and ingress and egress to be for building, maintenance and repairs.

By its acceptance hereof, said Company binds itself to allow the occupants or owners of said lands to take and use on and after January the first, and until June fifteenth of each year after the aqueduct is constructed and in operation, a sufficient amount of water to irrigate the lands heretofore irrigated by the several parties signing this instrument, or their assigns, from such points on its aqueduct above said lands, and in such quantities as they may select, but with connections to be made under the direction of said Company's Chief Engineer, and on and after the fifteenth day of June, and until January first of each and every year, ten (10) miners inches of water measured under a four inch pressure, above center of gravity, for use upon said lands, and taken from such points on its aqueduct above said lands, and in such quantities within the hereinafter mentioned limits as the said owners and occupants or their assigns may select. Said water to be the equivalent of ten (10) miners inches steady flow from June fifteenth to January first of each and every year, but is not to be taken in quantities of less than one inch or more than two hundred inches at once, unless convenient for said Company.

All of the grants, covenants, obligations, rights, liabilities, etc., herein specified, are to be binding upon and

3

enure to the benefit of the heirs, representatives, grantees and lessees of the grantors, and the successors, and assigns of said Corporation forever.

Upon failure to commence work within ninety days and to prosecute the same in good faith and with due diligence, the rights herein granted are to revert to the grantors until the works are completed, the rights of the grantors are to remain as they now are.

In witness whereof, we have hereunto set our hands and seal this 18th day of Sept., 1889.

JOHN B. JUDSON
HENRY JOHNSON
JEUS OESON
A. M. STRIPLIN
A. D. TRUSSELL.

Recorded in Book of Deeds 155, page 106

March 26th, 1915.

Mr. J. B. Lippincott,
1100 Central Bldg.,
Los Angeles, Calif.

My dear Mr. Lippincott:

Enclosed find letter from Mr. Henshaw which is explanatory; kindly tell me how to answer it. My understanding is that in Mr. Harroun's fees he has included the average of over a twenty year period while your figures represent the net safe yield during the driest years. I put this question up to Mr. Post, and he told me your interpretation of it was correct, and that during many of the wet years much water would be wasted - I am certainly buffalowed however, and hope you have seen Mr. Harroun and gave him a chance to prove his figures.

Would be pleased to hear from you at your convenience.

Yours very truly,

EF:BB

July 15, 1916.

Mr. J. B. Lippincott,
1100 Central Bldg.,
Los Angeles, Calif.

My dear Mr. Lippincott:

I would like to have you go over the matter with Post, and, if you will, testify during our hearing on August 5th as to your opinion as to the amount of our perfected water rights and the amount of our initiated water rights, and whether or not we have been diligent in prosecution of the work to protect our initiated water rights.

A copy of this letter has been sent to Mr. Post. Will you please take it up with him immediately,

With kind personal regards,

Yours very truly,

Manager.

F-8

142

Engineering offices of
J. B. LIPPINCOTT
1134 Central Building
Los Angeles, Cal.

January
Sixth
Nineteen
Seventeen.

Mr. Ed. Fletcher,
San Diego,
California.

Sir:-

The undersigned Board of Engineers received from you on December 5th, 1916, the following communication:

"At Mr. Henshaw's request, you have been asked to meet as a Board, and report findings on the water supply of the Volcan Land & Water Co.

The streams to be considered are the San Luis Rey at Warners Dam and the Santa Ysabel at Sutherland and Pamo, including San Clemente Reservoir. The findings desired are:

- (a) The net safe domestic yield and the proper heights of dams necessary to secure it.
- (b) The net safe irrigation yield and the corresponding proper heights of dams.

In determining the net safe yield of the San Luis Rey at Warners Dam, you will only take into consideration the demand of the Escondido Mutual Water Co., as per our agreement.

On the Santa Ysabel River, we would like the report of the net safe yield, without consideration of the needs of the riparian owners below Pamo; also a separate statement giving estimate of the amount of water necessary to take care of the riparian owners below Pamo and above Carroll whose riparian rights we have not yet secured. Mr. Post can give you full data as to rights heretofore acquired between Pamo and Carroll. All riparian rights from Carroll to the ocean have been acquired, and no deductions will be made on this account."

2

Acting upon the above instructions an examination has been made of all available data, including former engineering reports upon the same matters: Several meetings of the Board have been held at which the material compiled by assistants between meetings has been carefully analyzed and the Board is now able to render a unanimous opinion in answer to your question (a) with respect to Warner's Reservoir. The net safe yield after allowance for Escondido will be for domestic use 24,750 acre feet annual draft equivalent to about 22,000,000 gallons daily. The safe yield for irrigation purposes, assuming that a 50 per cent supply is allowable for two consecutive years is 28,000 acre feet. To accomplish the above result the storage dam at Warner's will be required to hold up a maximum depth of 107 feet. Above this there should be sufficient superelevation to cover infrequent severe freshets, wave action and necessary freeboard above the maximum flood level to insure, in conjunction with a proper spillway, that the dam will never be overtopped. Provision for all these contingencies will not exceed 15 feet, so the dam will come well within the safe height for structures of its class giving due consideration to all surrounding physical conditions. The Board is aware that the above net safe yield is at variance with that previously given by other investigators and submits the following reasons which fully account for the difference:

- (a) A longer record of stream flow than was available in any previous determination.
- (b) The assumption of a higher dam giving greater storage, providing a most efficient conservation of the runoff - in the 28 years upon which the study is based, waste would have occurred in but two of them.
- (c) Less gross evaporation: the figure used (47") being in full accord with recent scientific investigations not available in former determinations.
- (d) Basing the stream flow upon runoff instead of an assumed relation to the rainfall as has been done previously.

In this last feature the years of actual measured runoff of the San Luis Rey have been compared with that of other Southern California streams, giving due consideration to difference in surrounding conditions, and a fixed relation established. With this relation it has been possible by comparison with earlier runoff measurements on other streams to reproduce the runoff at Warner's back to the season 1888-89.

In making this study the Board operated in three groups, each working on independent lines. Two of these groups were but 4 per cent apart in their determinations and the third was practically a mean between them. The close agreement between the results obtained from independent analyses

by different sections of the Board is particularly gratifying to its members, and while the problem is surrounded with some uncertain factors, it appears that such uncertainty has been reduced to its lowest terms and the findings here presented may be received with confidence.

The work of the Board will be continued and an answer to your question (b) given at a later date.

Very truly yours,

J. B. Lippincott

H. Hawgood

Francis S. Sellev

William S. Post

Estimates - Safe Yield -- Warners

<u>Authority</u>	<u>Maximum Hgt. Water Surface</u>	<u>Mill. Gall. Daily</u>
Hawgood 1912	98	28.6
Harroun 1914	87	15.0
O'Shaughnessy & Lippincott 1915 (1)	90	11.6
" " " (2)	91	12.05
Post 1914	97	18.5
Brown 1916	90	18.74
Board 1917	107	22.0

J.B. LIPPINCOTT CONSULTING ENGINEER
MEMBER AMER. SOC. C.E.
MEMBER PACIFIC ASSOC. OF CONS. ENGRS

[RE: PAM'S]
CSM

EDWARD R. BOWEN STRUCTURAL ENGINEER
ASSOC. MEMBER AMER. SOC. C.E.
KENNETH G. VOLK

ENGINEERING OFFICES OF
J. B. LIPPINCOTT
134 CENTRAL BUILDING
LOS ANGELES, CALIFORNIA

CAMP KEARNY, Linda Vista, Cal.
Sept. 17, 1917.

Mr. Ed. Fletcher,
President, Cuyamaca Water Co.,
San Diego, California.

Sir:

Findings relative to foundations at the Lower
Clemente Damsite.

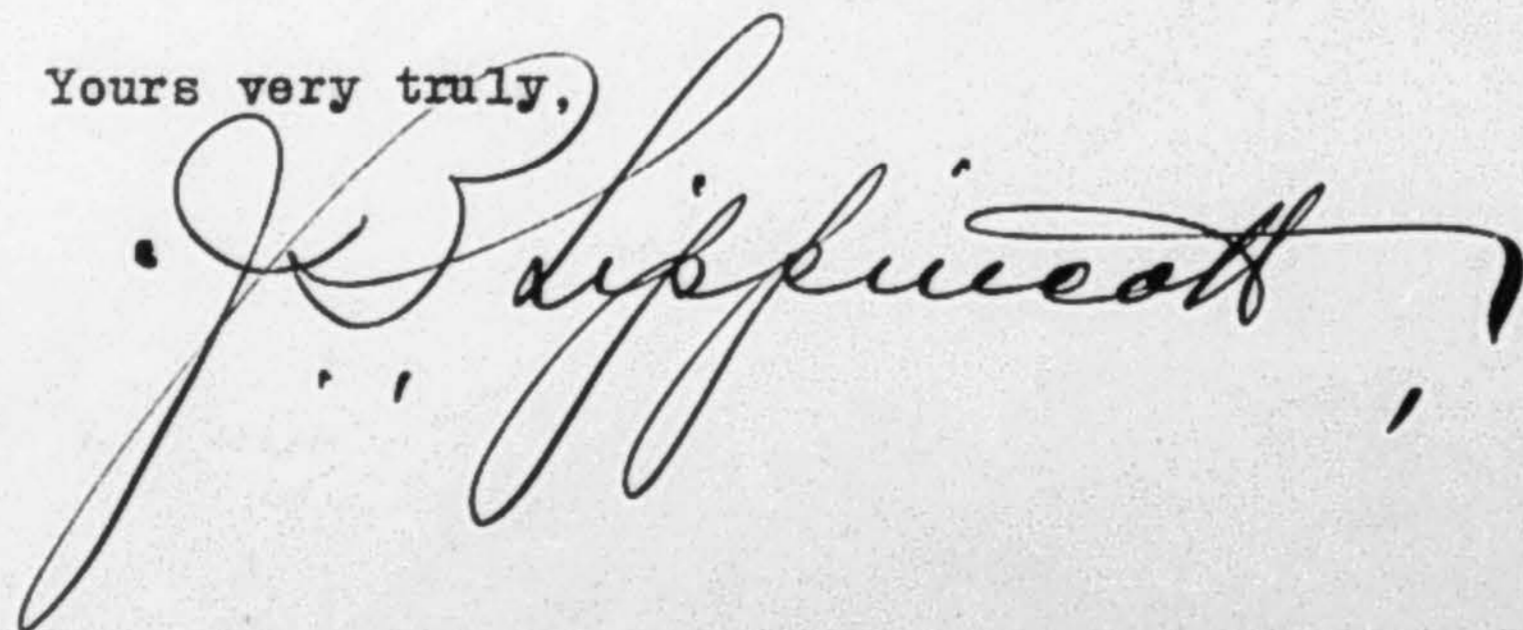
First: No bedrock has yet been found but the overlying material is a dense formation of clay, gravel and sand, which I believe to be impervious to the flow of any unduly large quantities of water, provided a broad base dam is built. However, it is impossible to state positively that this will be the case. The site has been explored by a number of shafts, the deepest of which is 42 feet, and which indicate the above.

Second: The adequacy of the foundation depends largely on the type of dam placed upon it. A broad base structure is advisable.

Third: It is recommended that a dam should be built for a depth of water of but 60 feet at first, and that the reservoir be tested with this structure. If it is found satisfactory it subsequently can be raised to the desired height to provide for 90 feet storage.

In conclusion, in my judgment, you are justified in building an earthen dam at the Lower Clemente Site. The relative merits of the two damsites have not yet been studied.

Yours very truly,



JBL:M

FINDINGS RELATIVE TO FOUNDATIONS AT LOWER CLEMENTE DAMSITE.

An examination was made of the Clemente Damsites situated in what is known as San Clemente Canyon about three miles east of Camp Kearny, on the road from San Diego to Escondido.

The first visit was made with Mr. Ellis, the Engineer of the Water Company, on September 8th, and the second on September 14th.

On previous occasions I have been to this reservoir and dam site with Mr. W. S. Post, who formerly was Engineer for the Company. During the past two months I have been engaged in excavating an aggregate of 20 miles of trenches for water and sewer at Camp Kearny, and have had unusual opportunities for examining the character of the surface formation which prevails in a broad way throughout this region. The type is a coarse gravel, embedded in sandy clay, interspersed with irregular beds of exceedingly hard clay and some thin strata of fine sand. For the first 8 to 10 feet the gravels are "cemented" making a hardpan, which is dense and impervious, but which softens up under the action of water in the course of a few days. The predominating presence of this hardpan is about the same depth from the surface for the top of hills or in the bottom of the valleys, suggesting that the rains and the following evaporations have concentrated the salts of the soil in this top blanket which in depth closely resembles the limits of capillary action of water that has evaporated from clay soil.

Bedrock, which would define the depth of this indurated sands, gravel and clay, has not been found in this area. The bottoms of railroad cuts, ravines and canyons, as well as test pits and wells through this region, fail to reach bedrock as far as observed. The Linda Vista mesa, as well as the bottoms of the canyons, is covered with a thin layer of surface soil of from 1 to 3 feet in depth which becomes soft when wet with winter rains.

Test pits have been put down at the Lower Clemente Damsite, called the Ferlin Site.

Shaft "D" is located south of the road at station _____. This pit is 15 feet deep, all in hardpan that is dense and firm. The material seen here would make a satisfactory foundation for an earthen dam. If an engineer could build an earthen dam of material as compact as this soil it would be a success.

Shaft "F" is at station 13 + 10 on the south side of the wash. From zero to 5 feet the pit is in recent washed gravels containing some water. From 5 to 8 feet it is in hardpan. The shaft could not be sunk further without pumping. The water flows through the washed gravels on top of the hardpan.

Shaft "B" is at station 16 + 50. From zero to 4 feet is surface top soil. From 4 to 12 feet recent washed gravel. From 12 to 15 feet is hardpan. Water is on top of the hardpan. The shaft is boarded up so it would not be readily examined, the bottom being covered with water.

Shaft "E" is at station 17 + 90. It is 42 feet deep.

The detailed logs of these shafts are given by the workmen who put them down, but their classification of soil did not convey to the writer an exact and definite understanding of the formation. I went down this shaft and examined it. For a short distance there is a surface soil, then 10 feet of cemented gravel. It is hard and tight and small stones cannot readily be removed from the side of the shaft. The shaft is not timbered. When the stones are broken loose from the formation sand and lime remain attached to them. There are a few thin streaks of fine sand. At a depth of 24 feet there is one bed 4 feet thick that is firm and indurated and contains no gravel. The bulk of it would pass through a 50 mesh sieve. Below this sand the gravel is the same as above but not cemented. The stones, however, are set tight in their bedding and frequently break before they can be extracted. The bottom of this pit is in this same formation and is dry notwithstanding it is about 30 feet below the bed of the creek and below the elevation of the water in shafts "B" and "F".

Shaft "C" is at station 20 + 10. It was carefully examined and its log is as follows: "One foot sandy loam. One to 4 cemented gravel high percentage of stones with sandy clay filling. From 4 to 9 feet clay with sand, formation dense, bottom of the shaft dry."

The character of the formation in this Shaft "C" appears impervious and as if it would make a satisfactory foundation. 130 feet east of shaft "C", and three feet above, some shallow pits have been dug in the surface gravels at the mouth of a small canyon. These pits are naturally filled with water to their surface. The water levels stand 12' above the elevation of the bottom of shaft "C" and yet it is dry. 250 feet southwest of these pits that contain water is shaft "E" 142 feet deep which is entirely dry. The bottom of shaft "E" is approximately 60 feet lower than the surface of the water. This indicates the density of the soils at this dam site.

Water was pumped from one of the wet pits into shaft "C" and this shaft filled. The water fell 40 inches in 36 hours. As the formation at this shaft was dry it was expected that the first water would be absorbed and this is no evidence of an underflow. The shaft will be refilled and the observation continued. After the surrounding soil has become saturated by diffusion the water probably will cease to fall. A similar test is to be made in the deep shaft "E" at station 17 + 90.

At Camp Kearny a number of cesspools were dug in this formation for sewage purposes and as the ground failed to absorb the liquid the cesspools had to be abandoned and a sewer system constructed.

(4)

The question that has to be solved is;

First: Whether such foundations as described above would be secure for a dam to impound water to a depth of 90 feet, and,

Second: Whether an underflow would be set up under the structure when the reservoir was filled.

It is my opinion;

First: That the foundation is sufficient for an earthen dam with a broad base but that it would not be adequate for a multiple arch dam because the loads in that event would be concentrated and the formation will become saturated and soft by the diffusion of the water.

Second: There would be no underflow whatever through the hardpan and practically none through the ancient gravel in the hard sand. There would be a slow percolation through the irregular bodies of fine sand but the extent of underflow would be limited and the amount of water that would escape by this method would be small (say from 5 to 10 inches) and vary in volume directly as the depth of water above the dam.

In other words the rate of flow would vary with the hydraulic gradient of the underflow. If a dam of broad base is constructed this gradient would be relatively flat, but if a dam was built with a narrow base or obstruction to the underflow, the gradient would be abrupt or steep and it is thought probable that "boils" and springs would occur of an alarming nature.

(5)

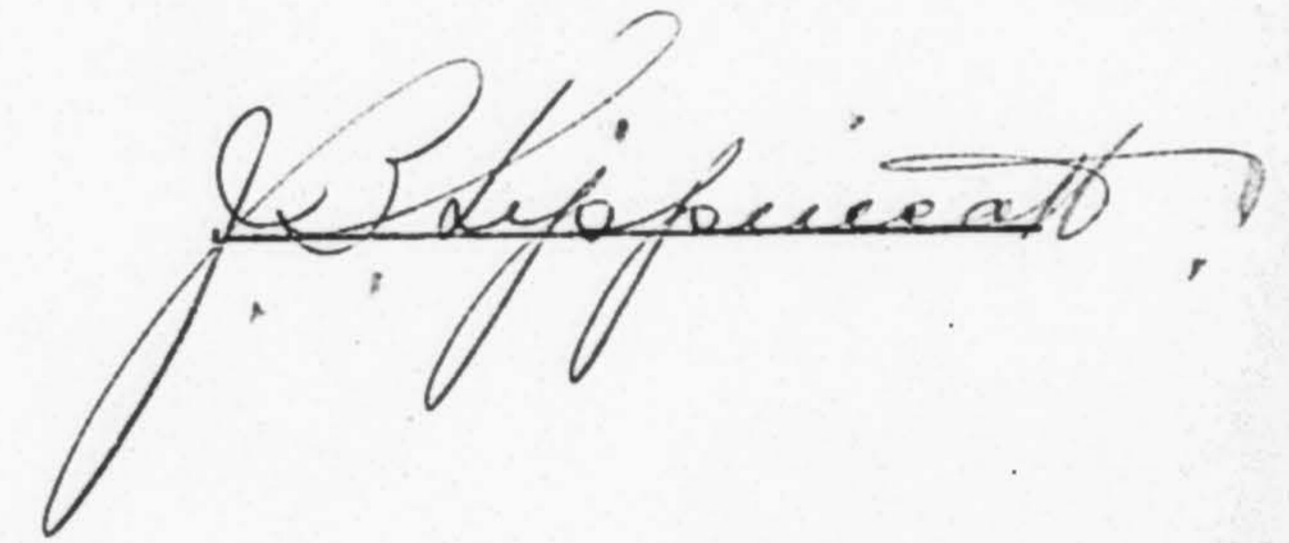
There is no assurance that the strata of impervious hardpan covers all of the basin of the reservoir and there is no positive assurance of the results that would follow the filling of the reservoir. A cutoff trench should be constructed to a depth of 20 feet beneath the upper toe of the dam. The surface clay or loam soil in the reservoir site should not be molested.

The dam at first should be constructed to a height not to exceed 60 feet, which probably would be sufficient for the delivery of water for the first few years of the life of the project, and if no unfavorable conditions developed the dam then might be raised to a height of 90 feet. By this process the danger of leaks would be reduced and the amount involved would be less.

Below this dam site there is about 20 acres of land that has a covering of about 2 feet of adobe. The amount of this clay soil is not sufficient to build an entire dam of the size desired. It would be possible to construct the lower portions of the dam with the gravelly soils of the hillside and the face and upper portion of the dam with this adobe. It is realized that this storage is valuable and should be developed to the maximum safe capacity.

(6)

It is recommended that shaft "E" should be continued to a depth of 100 feet unless bedrock is encountered at a less depth. If bedrock is found at or within 100 feet in depth a cutoff trench could be built thereto and this would suggest the possibility of using the multiple arch type of dam.



(7)

The New Willard Hotel,

Washington, D.C.

February 5, 1918.

J. B. Lippincott Esq.,

Hotel Powhatan,

Washington, D.C.

My dear Mr. Lippincott,

Enclosed please find copy of letter sent by me to Major Maurey in answer to yours, and also copy of the exhibits.

The City has definitely refused, by telegraph, to buy any water from us, even at six cents, and says the matter is entirely in the hands of City Attorney Cosgrove.

Have tried to get hold of you, and failed. Must see you before I go West. Did you get that telegram from our office as to

Yours sincerely,

J. B. LIPPINCOTT, C.E.
CONSULTING ENGINEER
MEMBER AMER. SOC. C.E.

EDWARD R. BOWEN, STRUCTURAL ENGINEER
ASSOC. MEMBER AMER. SOC. C.E.
KENNETH G. VOLK

ENGINEERING OFFICES OF
J. B. LIPPINCOTT
1134 CENTRAL BUILDING
LOS ANGELES, CALIFORNIA

February 5, 1918.

Major Dabney Maury,
Cantonment Division
15th & M Sts., N. W.,
Washington, D. C.,

Dear Sir:

With reference to the supply of water from an additional source for Camp Kearney, Cal., I wish to submit the following:

There is a great scarcity of water generally in San Diego County, California, because of the great intrinsic merit water has in this semi arid region, high value and there is sharp competition for its control. There are two sources of supply from which Kearney can be served. The City of San Diego and the Cuyamaca Water Company, which latter is represented by Mr. Ed. Fletcher. There is a controversy between these two interests -- this controversy appears to the writer to be immaterial. The sole interest to the officers of the United States is the question of the permanent adequacy of the supply for the camp.

The City of San Diego is a rapidly growing community with a source of supply which is admittedly inadequate to serve its own necessities during a period of dry years. We are now passing through one of the driest seasons that has ever been known in California, and it is quite possible that not only Camp Kearney but the entire City, and community may be involved in a resulting water famine.

San Diego, largely for sentimental and commercial reasons, is vitally interested in the welfare of Camp Kearney, and an adequate supply of water, therefore, is of course essential. Whether this water is supplied by the city or from another source would appear immaterial to the City on this account.

In this region it is necessary to hold over water from groups of wet years for those of drought, because of the high rate of evaporation losses from reservoirs and the long length of aqueducts for the delivery of water. The cost of water to the City of San Diego is very high and probably twice as much as they are charging the government for it at Camp Kearney. In other words, the City of San Diego not only is facing a water shortage and should conserve all possible water for its own necessities, but it is losing heavily on the business transaction of selling water to Camp Kearney.

For these reasons the writer believes that if the Camp should be supplied with water from Cuyamaca Water Company, it would result in a benefit rather than an injury to the City of San Diego. It is but

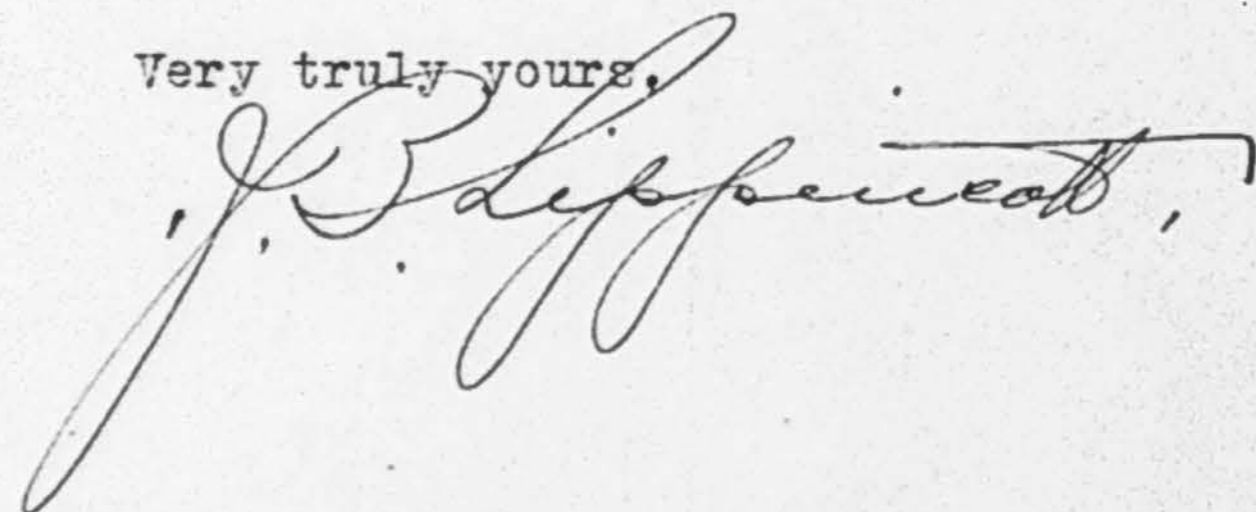
fair to say, however, that the service up to date by the City of San Diego has been adequate, both in quality and quantity.

The lengths of the conduits of the City of San Diego to deliver water to Camp Kearney are approximately 60 miles with three pumping plants enroute. The new source of supply proposed by the Cuyamaca Water Company will be by gravity and through shorter conduits, consequently the supply should be a safer one. However, groups of dry years will affect both the supply of the City of San Diego and that of the Cuyamaca Water Company, but notwithstanding this fact, if the Camp is served from both of these sources it should be in a safer position than if only supplied by one,

Mr. Henshaw, who I understand is connected with the Cuyamaca Water Company, is the owner of a large area of land in the vicinity of Camp Kearney, and I understand owns a portion of the land on which Camp Kearney is located. The bringing of the Cuyamaca supply to Camp Kearney will therefore not only serve the Camp but provide a means of serving high class suburban lands.

The Cuyamaca Water Company requests an impartial examination of the situation with a view of determining the advisability of accepting the offer of the Company to build at its own expense an extension of its pipe lines to Camp Kearney, provided the Federal Government will enter into a contract with it for its supply of water for the coming fiscal year.

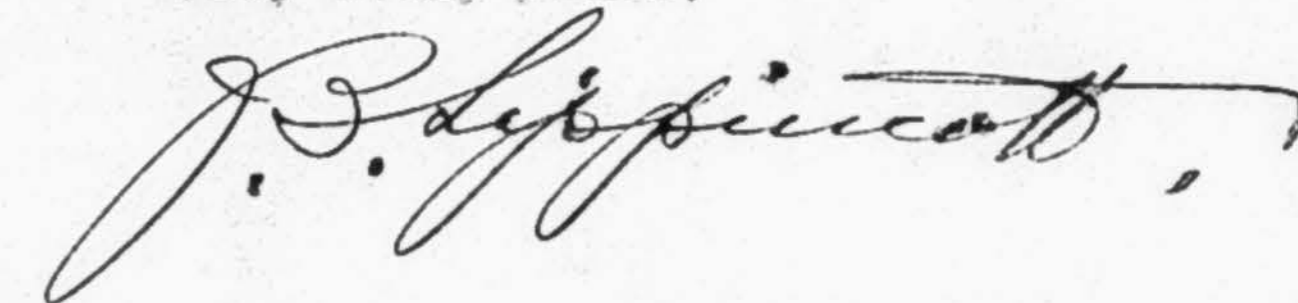
Very truly yours,



opinions which may be used in these negotiations. I do not consider that I am under any obligations to testify in this case for any of my former clients, and under the circumstances I believe that it would be ill advised for me to so testify. I have consistently taken this position with these parties with reference to this case, and I wish most respectfully to request of the Honorable Railroad Commission that they release me from the obligations of the subpoena which has been submitted.

Very truly yours,

JBL-w.



CC to Mr. Ed Fletcher

Letterhead of

J. B. LIPPINCOTT
1104 Central Building
Los Angeles, California.

December 19, 1919.

Mr. W. L. Huber,
First National Bank Building,
San Francisco, Cal.

My dear Sir:

Mr Ed Fletcher of the Cardiff Irrigation District called up my office yesterday about the question of water rights of the district. I was out and did not talk with him but Mr W. S. Post did so. Mr Fletcher stated that he intended writing to you with referenceto this subject and finding out as he expressed it, "if anything was the matter with the water rights of the Cardiff District." I did not discuss the question with him because I rather thought it was a closed issue unless I was employed on the matter again.

I would very much like to see this district go ahead and I believe the water supply for the Hodges Dam in its present state is sufficient justification for the attempt, although the amount of water to be supplied is small and the cost very great. My position in the matter is this, that if the Volcan Land and Water Company sell the Cardiff Irrigation District a water right for \$1000 a miner's inch, as is proposed, that right as far as the Volcan people are concerned should be a prior right to the river. I feel that the Volcan people after selling this right should not subsequently build either the Pamo or the Sutherland Dam and store water at either of these sites in such a way as to interfere with the filling of Lake Hodges for which they already have sold the water right. If after Lake Hodges has been satisfied, or properly protected, there is a surplus available for storage in upper sites, it is of course highly desirable that this storage should be accomplished.

I checked your hydrography and agreed with it. I hope that Mr Fletcher or others of the Cardiff District write you on this subject that you will sustain the position that I have outlined above as necessary for the protection of the people of the district and of the bond holders. I understand this is the assumption on which your hydrography is based.

On the other hand, from conversations I have had with Mr Hodges, Mr Henshaw and Mr Fletcher, I am satisfied that there is no contract or agreement to this effect. I rather think that Mr Fletcher takes the ground that as a matter of law the Hodges Reservoir could insist on this priority of right but if the Volcan people or the San Dieguito Mutual Water Company propose selling a water right for, as I remember it, \$700,000, I take the position that there should be a definite conveyance of that right including any riparian rights that any of these people may own on the stream above Lake Hodges sufficient for its protection.

I have been told that the new directors of the Cardiff Irrigation District may employ me to write a report on their water rights. If they do, I will expect to follow up along these lines.

I am,

Very truly yours,

(signed) J. B. Lippincott.

Dec. 24, 1919.

Mr. J. B. Lippincott,
1104 Central Building,
Los Angeles, Cal.

Dear Mr. Lippincott:

I have your letter of December 17th and am glad to have your statement, therein expressed, concerning water rights on San Dieguito River. It is true that if all of the water from that part of the watershed above Pamo Dausite is conserved the supply for Lake Hodges reservoir will at times be pinched. I believe that Mr Henshaw or the Volcan Water Company has reserved the right to do this if he or it so chooses, but from the physical standpoint, I do not consider this possible. I attach but little value to the Pamo site. While it might be physically possible to build a large dam at this site - almost nothing is impossible to modern engineering where funds are unlimited - yet such construction would, from the standpoint of economics, be sheer madness. When I made my report to the State Engineer to determine whether the project should be approved, this situation confronted us - a legal reservation existed, but one which, when considering physical and economical conditions, we did not believe possible of consummation. The subject was discussed at some length with Mr McClure, State Engineer, before proceeding, and finally it was decided to take into account physical conditions - my report, which makes a certain allowance for conservation and use in this upper watershed and utilization of the remainder, is the result. We felt that if every possible claim, including those economically impracticable, had been given full consideration, there would today be very little development of Southern California streams.

These upper claims on San Dieguito River are a cloud and if you can secure a release of them your efforts certainly will meet with my approval. One of the difficulties is that San Dieguito Mutual Water Company can convey to Cardiff Irrigation District only what it owns and it has proceeded with its entire development under these conditions. It would be necessary, therefore, for Cardiff Irrigation District to deal with Volcan Water Company. While my water right values

12/24/19

are not computed on the miners inch basis, you will find that they amount to considerably less than the figure of \$1,000 per miner's inch mentioned in your letter.

I believe there is some chance of my position in relation to Cardiff Irrigation District being misunderstood and I would thank you for correcting any misinformation on this score. I have acted first, last and at all times for the State Department of Engineering and under general instructions from Mr. W. F. McClure, State Engineer. By mutual consent of all parties, I went on the ground in behalf of the Department and made a report upon a District whose requirements would not exceed the available water supply and which, on the other hand, would probably include sufficient value to afford security for the necessary bond issue - this latter feature to be subject, of course, to final review and approval by the state Superintendent of Banks. It was necessary to throw out some lands in order to keep the area within the capacity of the water supply. In considering these conditions, I did not go into considerations of ownerships, made no effort to learn the various ownerships, and aside from taking the general area submitted to me as being one the majority of whose owners were said to favor a district, considered only the formation of a District of proper size to be served by the available water supply and one whose lands were best suited for irrigation. I appreciated that modifications of boundaries to suit the wishes of certain land owners might later be made and I now understand that this procedure is being followed. Having this much accomplished, the Directors of the District wished to submit the matter formally to the State Engineer for his approval, and following the statute, must, in order to do this, submit a report of their engineer. Realizing the depleted finances of the District at that particular time, Mr. McClure consented to their formally appointing me engineer of the District in order that I might submit to him a report in behalf of the District, which report was simply a brief synopsis of the more elaborate report which I had already made directly to him. This act of accommodation, made without personal profit to me, has led some par-

12/24/19

ties to contend that I am a proponent of the District - as you will appreciate, I have no personal interest other than one of seeing the development of a section of the State which I believe warrants such development.

Very sincerely,

W. L. Huber

WLH/RH
CC Mr. McClure

J. B. LIPPINCOTT, C.E.
C. H. RICHARDS
MEMBERS AMER. SOC. C.E.
MEMBERS AMER. ASSN. ENGS.

KENNETH Q. VOLK
EDGAR ALAN ROWE
ASSOC. MEMS. AMER. SOC. C.E.
MEMBERS AMER. ASSN. ENGS.

ENGINEERING OFFICES OF
J. B. LIPPINCOTT
1104-1107 CENTRAL BUILDING
LOS ANGELES, CALIFORNIA

July,
-1-
1922.

POSTAL TELEGRAPH - COMMERCIAL CABLES

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920 eighth at San Diego Cal'

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San Elijo and San Diego.

J B Lippincott

1246P

Col. Ed Fletcher,
Fletcher Bldg.,
920 8th Str.,
San Diego, Calif.

Dear Col:

I have copy of your letter of June 24th, to Mr. John Treanor, enclosing copy of your letter to Senator Johnson relative to rights of way over the Indian Reservation.

I wish to thank you very much for your attention to this matter and I am sure that Mr. Henshaw will appreciate it.

Very truly yours,

JBL'C

J. B. Lippincott

ENGINEERING OFFICES OF
J. B. LIPPINCOTT
1104-1107 CENTRAL BUILDING
LOS ANGELES, CALIFORNIA

August,
-12-
1922.

Col. Ed. Fletcher,
C/o Fletcher Co.,
San Diego, California,

Dear Sir:

I have been instructed by Mr. Hodges and Mr. Treanor to see to the preparation of evidence in connection with a prospective lawsuit to quiet title to the water rights in the San Pasqual Valley.

We have obtained a good deal of information already from your office and I am requesting Mr. W. P. Rowe, who is collaborating with Mr. F. E. Green in this work, to go to San Diego and look up any additional data which you may have collected in the past, relative to the San Pasqual Valley.

If you can assist Mr. Rowe in this work, I will very greatly appreciate it.

Very truly yours,

J. B. Lippincott
C.

JBL'C

August 15, 1922

File 280-5

Mr. J. B. Lippincott,
Central Building,
Los Angeles, California.

My dear Mr. Lippincott:

Answering yours of August 12th, will say I will be glad to cooperate with Mr. Rowe in any way I can, and have instructed our office to that effect.

Yours very truly,

EF:KIM

October 23rd
1 9 2 2

Mr. H. M. Lippincott,
R. #1, Box 475,
San Diego, California.

Dear Sir:

We understand that you have sold a portion of Lot 5 of the Subdivision of Lot 25 La Mesa Colony to Mr. Stanley M. Gue. The service and meter comes into his property, which he would rightfully claim. It will be necessary for you to have a separate tap and meter installed to supply your property with water. There is no expense whatever attached to tapping our water main and installing the meter, but you will be required to have a plumber connect on to the meter and run the pipe into your property and disconnect from the pipe that comes from the property sold to Mr. Gue.

If it is not convenient for you at the present time to have this work done, a minimum charge of \$1.25 will be added to Mr. Gue's bill in addition to the regular charge of \$2.00, making a total of \$3.25, but we would advise that you have your own service installed as soon as possible, as it is more satisfactory to all parties concerned, as in the event of a large water bill, it would be very hard to determine as to just what proportion of the bill the other party should pay, which might cause trouble and confusion.

Trusting you will give this matter your immediate attention, we are

Yours very truly,

CUYAMACA WATER COMPANY

LBM:EF

Secretary.

(Copy)

Engineering Offices of
J. B. LIPPINCOTT
1104-1107 Central Bldg.
Los Angeles

December
Twenty-sixth
Nineteen
Twenty-two

History

Colonel Ed Fletcher,
San Diego,
California.

My dear Colonel:-

Of course, you have been informed of the closing of the gates of the Henshaw Dam and the beginning of the storage of water at that point. This does not mean that the Dam is entirely completed - there is perhaps thirty days' work yet to do there. It does mean, however, that for all intents and purposes we now have an accomplished fact at Warners and you are to be congratulated over the result which you visioned and comprehended years ago.

This, coupled with the building of the Hodges Dam, are the most important accomplishments of San Diego County during the thirty odd years that I have known it, and you have been identified with both of them and are to a very substantial degree responsible for both.

Recently I was at Perris and met a Mr. Lytle. He told me that at one time they had cooperated in having a survey and report made on the possibility of bringing Warner water to the Perris Valley. I have never seen this report or maps relating thereto, and would like very much to have a copy of it.

Very truly yours,

JBL/H

J. B. LIPPINCOTT.

Ed Fletcher Papers

1870-1955

MSS.81

Box: 16 Folder: 19

General Correspondence - Lippincott, J.B.



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