STATE OF CALIFORNIA
STATE WATER RIGHTS BOARD

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In the matter of Application 17445 by Earl B. Schulz and Vivian F. Schulz	)	Source: Lompico Creek County: Santa Cruz

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Decision No. D 881

Decided January 3, 1958

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In attendance at investigation conducted by the staff of the State Water Rights Board on August 16, 1957:

Earl B. and Vivian F. Schulz	Applicants
Edward T. and Florence Elsie Driggs	Applicants under Application 17446
Ivan Parker Water Department Engineer City of Santa Cruz	Representing the Protestant
R. R. Forsberg Assistant Hydraulic Engineer	Representing the State Water Rights Board

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DECISION

Substance of the Application

Application 17445, filed January 30, 1957, is for a permit to appropriate 0.026 cubic foot per second from Lompico Creek, year-round, for domestic, irrigation and recreational purposes. Lompico

Creek is tributary to Zayante Creek, thence San Lorenzo River. The point of diversion is to be located within the SE¼ of SW¼ of Section 2, T10S, R2W, MDB&M at a point 800 feet upstream from the confluence of Zayante Creek and Lompico Creek. The diversion is to be effected by pumping from the unobstructed channel and the water will be conveyed to the place of use through a 2-inch steel pipe 140 feet in length. The uses to which the water is to be put consist of irrigation of 1-3/4 acres, domestic use for 12 persons at one house and recreational use at a 5,700 gallon swimming pool, all within the SE¼ of SW¼ of Section 2, T10S, R2W, MDB&M.

Protest

The City of Santa Cruz protests Application 17445 on the basis of License 1553 (Application 4017) and Permit 2738 (Application 5215), alleging that no unappropriated water is available and that any further appropriation will reduce the amount of water available to the protestant between May and November when the supply is normally inadequate. The protestant further states that the applicant is riparian to Lompico Creek and already has a right to the use of water from the Creek. As to its own use of water, the City alleges that at present it diverts a maximum of 8,500,000 gallons per day (an equivalent continuous flow of about 13.1 cubic feet per second) from San Lorenzo River. Diversion is made in all months of the year for distribution for domestic, commercial, industrial and irrigation purposes among inhabitants of Santa Cruz and its environs. The protestant indicates that it diverts at a point within the SW¼ NE¼ of Section 12, T11S, R2W, MDB&M.

Answer to Protest

The applicants reply that they are asking for a recorded right to the water that they have always used and to which their property is entitled. They further claim that land and homes are being sold around the headwaters of Lompico Creek and water is getting lower in supply and that they wish only to protect their right to the use of said waters.

Field Investigation

The applicants and the protestant, with the approval of the State Water Rights Board, stipulated to proceedings in lieu of hearing as provided for under Section 737 of the Board's rules and a field investigation was conducted on August 16, 1957, by an engineer of the Board. The applicants and the protestant were present or represented during the investigation.

Records Relied Upon

Applications 4017, 5215, 15488, 17445 and all data and information on file therewith; Geological Survey, Santa Cruz Quadrangle, 7.5 minute series, and Water Supply Papers, Part 11 - Pacific Slope Basins in California; Bulletin No. 5, State Water Resources Board, "Santa Cruz - Monterey Counties Investigations", August, 1953; Bulletin No. 1, State Water Resources Board, "Water Resources of California", 1951.

Information Secured by Field Investigation

According to the report covering the field investigation of August 16, 1957, Lompico Creek rises on the western slopes of Santa Cruz Mountains within Section 24, T9S, R2W, MDB&M, at about elevation 1,360 feet and flows in a southwesterly, thence southerly direction approximately four miles to its junction with Zayante Creek. The watershed above the applicants' point of diversion consists of about 2.73 square miles of moderately to steeply sloping terrain. Most of the area is heavily wooded. The main tributary to Lompico Creek is Mill Creek.

Several stream flow measurements were made during the investigation on August 16, 1957. The flow in Lompico Creek immediately upstream from applicants' point of diversion was 0.08 cubic foot per second, the flow in Zayante Creek immediately below the confluence with Lompico Creek was 0.9 cubic foot per second, and the flow in Zayante Creek at the Graham Hill Road bridge a short distance above its junction with San Lorenzo River was estimated at 2.5 cubic feet per second.

The applicants' diversion works consist of a "Pyramid" piston type pump, powered by a one horsepower electric motor. Water is pumped from the creek through a 1½-inch galvanized steel pipe to a 3,300 gallon wooden regulating tank at an elevation such that water can be used for domestic and irrigation purposes by gravity. A small booster pump is also used so that a greater pressure may be had in using the water from the tank if necessary. It was stated by one of the applicants during the investigation that it required approximately

2½ hours to fill the tank by pumping from the Creek. This being the case, the pump would have a capacity of approximately 22 gallons per minute.

The uses of water by the applicants consist of domestic requirements at one residence (including a basement providing additional rooms for guests), irrigation of 1-3/4 acres of lawn, shrubs, garden, and trees and recreational use at a 5,700 gallon swimming pool. The applicants' property mainly consists of moderate to steeply sloping sidehill land abutting Lompico Creek.

The City of Santa Cruz maintains a pumping plant on San Lorenzo River within the SW¼ of NE¼ of Section 12, T11S, R2W, MDB&M. Records of the amount of water pumped each day are maintained and are available for inspection. From an examination of the pumping records by the investigating engineer, it appeared that the protestant's maximum rate of use is substantially as claimed in the protest. The protestant's point of diversion is approximately 9 miles downstream from that of the applicants'.

Information from Other Sources

The City of Santa Cruz has the only active filings before the State Water Rights Board to appropriate water from the stream system below the applicants' point of diversion. These filings allow diversion as follows:

License 1553 (Application 4017) confirms the right to appropriate 6.2 cubic feet per second, year-round, from San Lorenzo River at a point within the SE¼ of NW¼ and the NE¼ of NW¼ of projected Section 12, T11S, R2W,

MDB&M, for municipal and domestic purposes, within Santa Cruz and its environs.

Permit 2738 (Application 5215) allows an additional diversion of 25 cubic feet per second, year-round, at the same points and for the same purposes as set forth in License 1553.

The flow of San Lorenzo River at Big Trees has been recorded by the United States Geological Survey since 1937. The Big Trees gaging station scales approximately 3.5 miles upstream from the intake of the City of Santa Cruz and approximately one mile downstream from the point where Zayante Creek enters San Lorenzo River. Flow during the period of record is reported to have ranged from a maximum of 24,000 cubic feet per second to a minimum of 7.5 cubic feet per second and to have averaged 141+ cubic feet per second for the 16 water years (1937-38 to 1953-54). Flow during the 16 water years of published record averaged less than 10 cubic feet per second on 46 days, which is 46/ (16 x 365) or less than one per cent of the time; it averaged less than 15 cubic feet per second on 443 days, which is 433/ (16 x 365) or 7.57 per cent of the time (See Table No. 1).

The maximum total monthly diversion from San Lorenzo River by the City of Santa Cruz during the period 1950 to 1956, inclusive, according to Reports of Licensee under License 1553 and Progress Reports under Permit 2738 was 194,246,000 gallons pumped during August, 1955. That pumpage is equivalent to an average rate during that month of about 9.7 cubic feet per second.

TABLE NO. 1

San Lorenzo River at Big Trees U.S.G.S. Gaging Station
Mean Monthly Flow and Minimum Flow in Cubic Feet Per Second

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct	Nov.	Dec.
1937				106	65.5	39.3	24.3	17.2	16.2	17.8	28.8	262
				95	41	27	20	14	14	15	13	23
1938	235	1,232	848	246	111	60.9	36.8	25.1	21.3	24.3	25.2	28.0
	45	309	424	147	84	48	29	23	19	21	23	24
1939	43.8	79.9	83.3	32.1	22.9	14.2	10.5	9.6	10.5	11.6	12.8	15.3
	24	37	36	23	13	9.5	7.5	8	8	10	10	12
1940	474	1,202	656	310	92.2	54.2	33.1	22.2	21.7	21.1	23.8	281
	71	173	139	134	68	41	28	18	18	17	21	19
1941	745	1,333	715	942	186	93.7	57.2	41.8	34.4	31.4	37.1	241
	139	295	202	268	124	72	47	38	32	27	32	35
1942	695	637	266	367	159	90.0	54.7	38.6	33.4	31.2	67.4	84.2
	91	191	155	166	116	69	43	34	29	28	29	40
1943	613	282	488	165	88.5	58.7	39.4	27.8	23.4	26.2	28.5	33.5
	47	146	258	118	69	48	30	24	20	22	25	23
1944	57.7	215	232	69.6	51.5	34.8	24.2	18.9	17.5	21.1	59.5	74.6
	34	62	74	52	41	27	21	18	16	15	30	34
1945	57.8	721	247	133	71.6	44.6	27.9	20.5	18.1	28.0	39.4	365
	40	106	84	82	59	36	21	18	16	16	26	37
1946	171	102	93.7	107	53.1	34.3	23.1	17.3	16.0	16.1	66.7	42.1
	79	78	65	62	40	28	19	15	15	15	16	32
1947	31.8	86.0	97.4	59.1	29.0	22.6	15.3	11.7	10.3	28.4	22.6	33.5
	28	30	51	37	24	17	13	11	9.3	11	19	20
1948	28.2	31.8	65.8	153	80.4	34.7	21.1	15.2	12.6	14.7	15.2	55.6
	23	23	25	52	41	26	17	13	11	13	14	15
1949	44.0	104	553	96.7	48.1	27.8	19.4	16.4	14.7	15.0	23.4	32.2
	25	36	110	60	34	23	17	15	14	14	14	17
1950	205	416	80.2	65.5	41.2	28.0	18.2	14.4	14.1	21.8	461	674
	22	90	57	43	31	20	17	12	13	14	9.8	111
1951	281	196	256	95.7	81.8	43.3	29.6	22.4	19.0	23.0	32.9	489
	131	142	118	84	50	36	24	19	18	19	21	65

Year	Jan.	Feb	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1952	1,242	404	757	196	91.1	60.5	45.2	30.9	25.5	23.8	35.6	329
	267	252	231	126	68	54	37	26	23	22	23	50
1953	502	115	153	116	87.0	51.2	32.2	25.0	20.9	21.0	37.5	27.0
	180	85	74	69	60	41	27	21	19	18	21	25
1954	99.9	192	225	158	64.7	37.8	23.8	18.0	16.8			
	25	38	68	76	43	30	19	16	16			

Passages from Bulletin No. 5 of the State Water Resources Board relating to the water supplies of the City of Santa Cruz and other users dependent upon the San Lorenzo River drainage are quoted as follows:

> "Objectives of the Santa Cruz-Monterey Counties Investigation included investigation and study of the nature, occurrence, and amount of water resources, both surface and underground; survey of the location, type and extent of water utilization under present development; estimation of future water requirements for all beneficial uses; evaluation of present and future water problems; development of preliminary plans for securing supplemental water supplies to meet immediate and ultimate needs; and estimates of cost." (Pages 15 and 16)

> "In order to facilitate reference to its several parts, the Santa Cruz Area was divided into four principal hydrographic units ... . These were designated 'North Coastal Unit', 'San Lorenzo Unit', 'Soquel Unit' and 'Pajaro Unit' ... . The San Lorenzo Unit includes the watershed of the San Lorenzo River and the coastal drainage ... ." (Page 17)

> "Boulder, Bear and Zayante Creeks are the principal tributaries of the San Lorenzo River." (Page 18)

> "Runoff originating within the Santa Cruz-Monterey Area closely approaches natural flow ... there are no importations or exports." (Page 25)

> "Water requirements in the North Coastal, San Lorenzo, and Soquel Units is primarily by urban areas." (Page 54)

> "At the present time significant requirements for supplemental water in the North Coastal, San Lorenzo and Soquel Units are limited to Santa Cruz and neighboring suburbs served by the City of Santa Cruz Water Department. The present water problem is not due to a shortage of total seasonal supply, but rather to lack of facilities for regulating that supply. Peak demands occur at times of minimum stream flow, although a large amount of runoff wastes to the ocean at other times ... ." (Page 57)

> "The average seasonal urban demand for water in the Santa Cruz-Monterey Area, which is largely obtained from surface diversion, is considerably less than the total seasonal water supply presently available. However, in many of the water systems supplying urban and recreational service, the peak demand rates roughly coincide with and may exceed minimum flows in the streams.

As an example, if the draft by the City of Santa Cruz on the San Lorenzo River during 1947 had followed the average pattern into September, the City would have been required to ration water. In design of works to meet urban water demand it is common practice to provide for a full water supply without deficiency at any time. However, it has been the experience of many communities in California that substantial deficiences may be endured for extended periods of time by rationing the limited water supplies on hand." (Page 55)

"Surveys and studies in connection with the Santa Cruz-Monterey Counties Investigation indicate that it would be feasible from the engineering standpoint to so regulate and conserve the flow of streams of the Santa Cruz-Monterey Area as to yield firm new water supplies in excess of the probable ultimate supplemental requirements of the North Coastal, San Lorenzo, Soquel, and Pajaro Units." (Page 60)

"... the 'Zayante Project', could provide supplemental water to the service area in the San Lorenzo River Basin north of Santa Cruz, while ... the 'Doyle Gulch' project could provide supplemental water to the service area in and adjacent to the City of Santa Cruz." (Page 65)

Discussion

Diversion by the City of Santa Cruz during the month of maximum use is reported to have averaged about 9.7 cubic feet per second. The City maintains two pumps on the San Lorenzo River of a combined capacity of 4500 gallons per minute, it has two wells near San Lorenzo River which together yield 1600 gallons per minute and it has storage tanks of an aggregate capacity of 45,000,000 gallons. Water Superintendent Webber stated in 1954 (Application 15488, D-810) that the City's peak demand has equalled 9,000,000 gallons per day, that within his local experience which dates from 1946, water has always passed the City's intake except in late August of 1947, that with the exception of that time of shortage, flow past the City's intake has never been less than

about 2 cubic feet per second, that the City normally pumps two 8-hour shifts per day at a maximum rate of 4,500 gallons per minute and that no diversion is made during the other eight hours. In the protest against Application 17445, the protestant states that the City's peak demand has equalled 8,500,000 gallons per day so it was assumed that the same operational procedure was used in pumping.

The 0.026 cubic foot per second sought by the applicants is a very small amount in comparison with 9.7 cubic feet per second, the average rate during the month when use by the City of Santa Cruz was greatest. The flow of San Lorenzo River at Big Trees, as recorded by the USGS, has averaged 141 cubic feet per second, was more than 10 cubic feet per second on about 99.2 per cent and 15 cubic feet per second on about 92.5 per cent of the days recorded of the 16 years of stream flow record. Plainly, under present conditions, the applicants can divert as they propose almost constantly without injury to the City of Santa Cruz; and they can so divert some 92.5 per cent of the time when demand by the City has increased 55 per cent. Inasmuch as the applicants have and are, under alleged riparian right, using the water requested, there would be no change in the flow of water to the protestant.

Conclusions

The information indicates and the Board finds that unappropriated water exists in the source from which the applicants seek to appropriate, and that such water may be taken and used in

the manner proposed by the applicants without injury to downstream users under prior rights. It is therefore the conclusion of the Board that Application 17445 should be approved and that a permit should be issued to the applicants subject to the usual terms and conditions.

Order

Application 17445 for a permit to appropriate unappropriated water having been filed, a protest having been submitted, an investigation having been held by the Board and said Board now being fully informed in the premises:

IT IS HEREBY ORDERED that Application 17445 be, and the same is, hereby approved, and it is ordered that a permit be issued to the applicants subject to vested rights and to the following terms and conditions, to wit:

1. The amount of water appropriated shall be limited to the amount which can be beneficially used and shall not exceed 0.026 cubic foot per second to be diverted from January 1 to December 31 of each year.

2. The maximum amount herein stated may be reduced in the license if investigation so warrants.

3. Actual construction work shall begin on or before June 1, 1958 and shall thereafter be prosecuted with reasonable diligence, and if not so commenced and prosecuted, this permit may be revoked.

4. Said construction work shall be completed on or before December 1, 1960.

5. Complete application of the water to the proposed use shall be made on or before December 1, 1961.

6. Progress reports shall be filed promptly by permittee on forms which will be provided annually for that purpose by t the State Water Rights Board.

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

Adopted as the decision and order of the State Water Rights Board at a meeting duly called and held at Sacramento, California, on this 3rd day of January, 1958.

/s/ Henry Holsinger
Henry Holsinger, Chairman

John B. Evans, Member

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