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STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

79-21

In the Matter of the Petition
of John Korelich, Lost Oak
Village Condominiums, For Review
of Waste Discharge Requirements,
California Regional Water Quality
Control Board, Central Coast
Region. Our File No. A-213.

Order No. WQ 79- 21

BY THE BOARD:

On October 13, 1978, the California Regional Water Quality Control Board, Central Coast Region (Regional Board) adopted Order No. 78-30, waste discharge requirements for John Korelich, Lost Oak Village Condominiums, San Luis Obispo County. The requirements prohibit the discharge of waste from this project. On October 30, 1978, the State Board received a petition for review of Order No. 78-30 from John Korelich (petitioner).

I. BACKGROUND

The petitioner proposes to construct 24 condominium units (a 12 duplex residential development) on about 1.5 acres of land near Los Osos, San Luis Obispo County. An average of 4,320 gallons per day (gpd) of domestic wastewater will be discharged from the development into two aerobic/septic tank treatment systems. Treatment is to occur

as the sewage flows through three tanks in series. Only the first of these tanks appears to contain a primary aeration/sludge removal chamber. The others appear to be dual chamber tanks. Effluent disposal will be by pumping into two dual subsurface leachfield systems totaling 2,400 sq. ft. per treatment system. Evapotranspiration may occur from these fields. The treatment and disposal systems have been designed for a maximum daily flow of 7,480 gallons.

Soils in this area are generally porous. The general soil profile is one to two feet of silty fine to medium sand with some organics overlying 35 to 40 feet of fine to medium sand. The drillers log from DWR Well 18S/11E-18kl, located $\frac{1}{4}$ mile southwest of the parcel in question, shows alternating yellow clay and yellow sand layers from 40 feet to 210 feet beneath ground surface. San Luis Engineering, Inc., reports a percolation rate of 1.75 minutes per inch and an estimated groundwater level of 80 feet near the project site.

The nearest water supply well is located approximately 350 feet northwest of the development and two other supply wells exist approximately 900 feet southwest. In general, the groundwater gradient drops .05 ft/ft to the northwest but locally, from Private Well J3 to California Cities Water Company Well Los Osos No. 4, the gradient appears to be about .03 ft/ft to the southwest. (See attached map for location of the project and the wells in question).

The project as proposed will discharge primary effluent to the groundwater in this area. Petitioner states that a major portion of the sewage solids will be removed in its four chamber anaerobic/aerobic (air injected) treatment system. Petitioner further claims that the physical removal of solids will produce an effluent which does not contain more than 1 ml/l settleable solids nor more than 20 mg/l BOD₅.

The Regional Board considered comments and testimony in this matter on July 14, September 8, and October 13, 1978. The staff of the Regional Board presented its evaluation of groundwater quality in the project area and the anticipated effects of waste discharge from this project.

II. CONTENTIONS AND FINDINGS

The petitioner contends that the determination to prohibit the discharge from this project is improper because it is not supported by substantial evidence as required by Section 13280 of the Water Code. He further contends that the wastewater treatment system as designed and as maintained by a public entity will provide adequate protection of water quality. Section 13280 states:

"A determination that discharge of waste from existing or new individual disposal systems or from community collection and disposal systems which utilize sub-surface disposal should not be permitted shall be supported by substantial evidence in the record that discharge of waste from such disposal systems will result in violation of water quality objectives, will impair present or future beneficial uses of water, will cause pollution, nuisance, or contamination, or will unreasonably degrade the quality of any waters of the state."

Order No. 78-30 includes the following findings in support of the prohibition:

- " 8. The use of individual sewage disposal systems and small, privately owned and operated treatment and disposal systems in the area of the discharge, which is presently unserved, represents a potential threat to water quality and public health.
- "10. Present and anticipated beneficial uses of groundwaters in the vicinity of the discharge include:
 - a. Domestic and municipal water supply.
 - b. Agricultural water supply.
- "14. At this time, the Board finds that there is substantial evidence in the record that the discharge of wastes from the proposed community sewerage system will result in violation of water quality objectives, will impair present or future beneficial uses, will cause pollution or nuisance, or will unreasonably degrade the quality of waters of the State."

While finding #14 of Order No. 78-30 sets forth the statutory conclusion necessary to support a prohibition of discharge, the critical issue in this petition is whether the evidence in the record supports this conclusion. We find that it does not.

Existing groundwater quality in the area of the project appears to be excellent. Representative chemical constituent concentrations disclosed in the record are well within the limits recommended for drinking water by the U.S. Public Health Service in 1962 and by the State Department of Health Services (Tables 2, 3 & 4 of Section 7019, Chapter 5, Title 17, California Administrative Code). The total nitrogen limitation is the only one expected to be exceeded by the undiluted effluent. This total nitrogen, assuming it is completely

converted to nitrate-nitrogen, should raise the nitrate-nitrogen level of the surrounding groundwater from 3.8 to about 5.8 mg/l when diluted by the expected rate of water flow through the soil. The public health standard for nitrate-nitrogen in drinking water is 10 mg/l or less. The record does not indicate possible violation of other water quality objectives contained in the Water Quality Control Plan.

Evidence does exist in the record that residential development generally increases nitrate and TDS levels in the groundwaters of the area. References cited in the Regional Board staff's report contain evidence that shows a direct correlation between nitrate levels and residential development. Nitrate concentrations can be expected to increase if present sewage disposal methods continue. Calculations in the Regional Board record for this project show, however, that this project, by itself, will not raise nitrate, TDS, or hardness concentrations to a level which will be detrimental to present or future beneficial uses as long as waste discharge requirements are met. Even when those calculations are recomputed for nitrate, chloride, and TDS concentrations utilizing groundwater quality data from a poorer quality well which is closer to the project site, no known detrimental effect can be shown. We have attached a "Pollutant Content" Table to this order which summarizes the expected effects of this discharge on the concentrations of pollutants in the groundwater.

Pollutant loadings from this waste discharge are insignificant when compared to the existing pollutant load received daily by the basin. Using nitrate as an indicator of

percentage degradation, the record indicates that approximately 205 tons of nitrate were added from all sources to the groundwater basin in 1977. Assuming 75 gallons per capita per day discharge from the condominium project at 40 mg/l maximum possible addition, the project can be expected to add 2 lbs. of nitrate to the basin per day or 0.4 tons/year, an increase of 0.2% over the existing situation. In summary, while some evidence does exist that the groundwater quality of the Los Osos groundwater basin is being degraded in the area of the proposed discharge, we find that substantial evidence does not exist in the record that discharge of waste from this disposal system will result in violation of water quality objectives, will impair present or future beneficial uses of water, will cause pollution, nuisance, or contamination, or will unreasonably degrade the quality of the groundwater. It is possible that this discharge in combination with discharges from other existing and anticipated development in the area could cause an unreasonable impact on groundwater in the area in the future. Such a potential impact if supported by substantial evidence, such as planned land use designations and historical population growth figures (see Water Code Section 13281), could support the issuance of a prohibition. But this evidence is not available in the current record.

Even though we agree with the petitioner that the record does not support the issuance of a prohibition in this case, we do have some continuing concerns regarding the type of treatment and disposal that is being proposed. After analysis

of data contained in the Regional Board record and information supplied by the petitioner regarding wastewater treatment by this type of disposal system, it appears that an aerobic/anaerobic treatment system for this project may produce higher quality effluent than a conventional septic tank system. However, such system must be designed properly, installed to design specifications and operated and maintained with daily care. The system requires greater care and maintenance than a septic tank. If a close watch is not maintained in systems operation to prevent mechanical or electrical equipment failure, backup into the plumbing system and discharges of effluent high in BOD, suspended solids and ammonia concentrations may occur.

In view of the importance of care and maintenance necessary for this type of disposal system, we find the petitioner's proposal that this system be operated and maintained by a public entity to be a necessity and any requirements adopted by the Regional Board for this discharge should require such involvement by a public entity. Further, the Regional Board should review necessary agreements between the petitioner and the public entity to determine that such care and maintenance is assured. Regarding design and construction of this system, the requirements should specify that the design, location, sizing and construction are to be certified as to performance by a professional civil engineer prior to commencement of construction. This engineer should also oversee the installation and construction.

III. CONCLUSIONS

The State Board shares the Regional Boards' concern regarding the overall degradation of groundwater in this area. There is evidence in the record that a groundwater nitrate problem may be developing in this basin (See, eg., the 1973 Department of Water Resources "Los Osos-Baywood Groundwater Protection Study" and the "Los Osos Groundwater Basin" report prepared by the Regional Board staff in connection with Regional Board consideration of the petitioner's application). The State and Regional Board must increase their cooperative effort with the County and the Department of Water Resources towards defining both the hydraulics of the basin's groundwater flow and the effects both short and long range of a continued increase in discharge from individual treatment systems. Regional Board Resolution No. 78-07 was adopted on September 8, 1978, and requests assistance from the State Board to help evaluate how on-site sewage system discharges affect water quality within the Baywood-Los Osos groundwater basin. This is a step in the right direction and the analysis is now being conducted by the State Board's Division of Planning and Research. Using the information developed in this analysis and any other information available to it, the Regional Board should, in the near future, determine whether an areawide prohibition of subsurface discharges in this area is called for. Currently, however, substantial evidence does not exist in the record sufficient to prohibit the waste discharge in question here.

IV. ORDER

IT IS HEREBY ORDERED that this matter is remanded to the Regional Board for adoption of waste discharge requirements which allow the discharge consistent with the provisions of this Order including a requirement for public operation and a requirement for supervision of design and construction by a registered professional engineer.

Dated: May 17, 1979

/s/ W. Don Maughan
W. Don Maughan, Chairman

/s/ William J. Miller
William J. Miller, Member

/s/ L. L. Mitchell
L. L. Mitchell, Member

/s/ Carla M. Bard
Carla M. Bard, Member

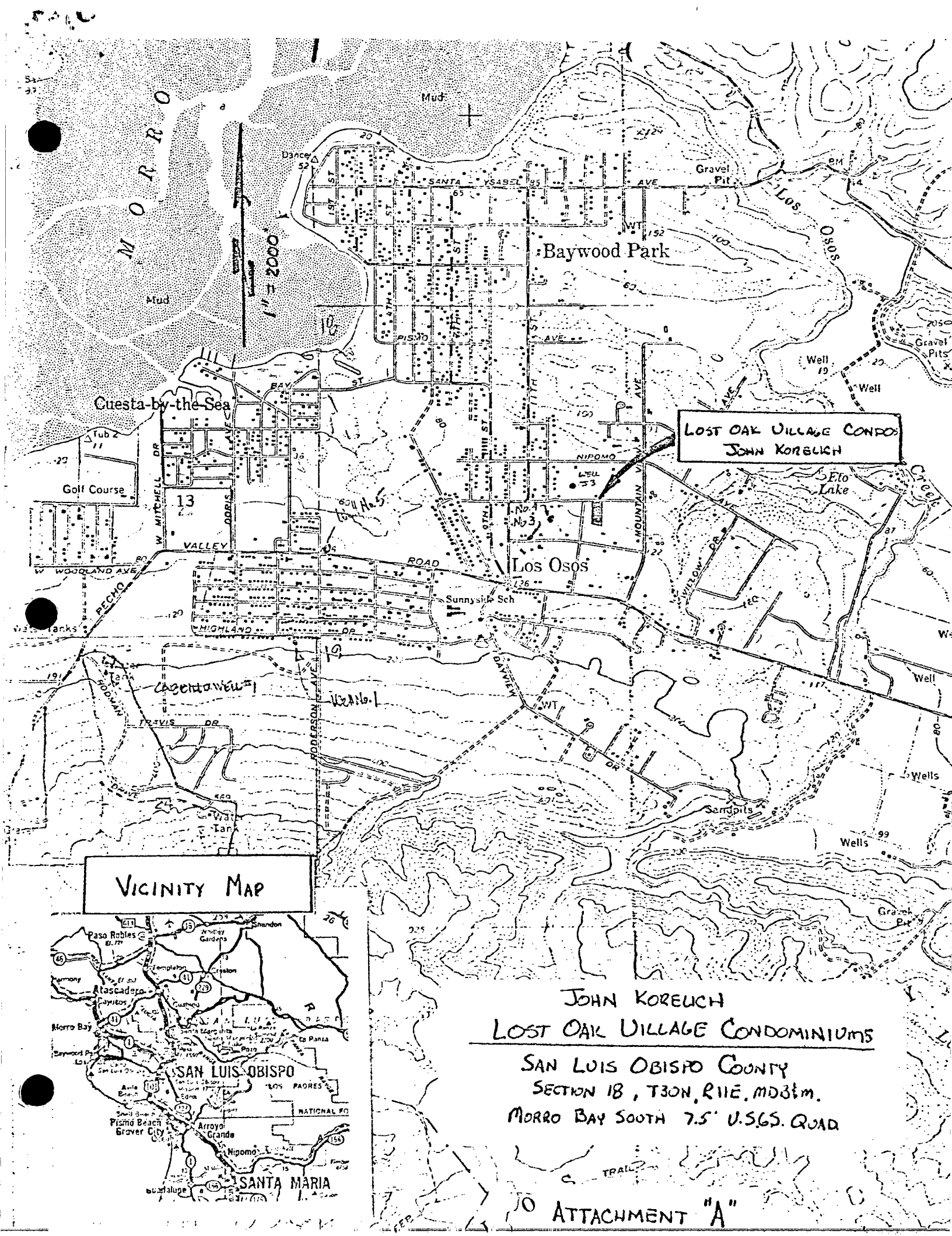
TABLE 1
"POLLUTANT CONTENT"

<u>Pollutant</u>	<u>Existing GW Supply* (mg/l)</u>	<u>Mineral Pickup Expected** (mg/l)</u>	<u>Effluent (mg/l)</u>	<u>GW After Discharge*** (mg/l)</u>	<u>Public Health and Acceptance Drinking Water Standards</u>
Chloride (Cl)	28 (40)	50	78	42.4	250
Sulfate (SO ₄)	6	30	36	7.4	250
Nitrate-N (N)	2(3.8)	40	34	5.8	10
Sodium (Na)	23	70	93	26.3	---
TDS	128(172)	300	428	169.3	500

* Average from Cal Cities Water Company Wells Nos. 3 and 4. Values in parenthesis are from Private Well T30S/R11E-18J3 and indicate water quality nearest to discharge.

** From "Wastewater Engineering: Collection, Treatment, Disposal", by Metcalf and Eddy, Page 232, Table 7.4 - Reported national average of mineral pickup.

*** Numbers were derived assuming percolation rate of 150 gpd/sq.ft. and performing mass balance utilizing average groundwater quality at closest wells for which data is available. Well T30S/R11E-18J3 and Cal Cities Water Company Wells Nos. 3 and 4



**LOST OAK VILLAGE CONDOS
JOHN KORELICH**

VICINITY MAP



**JOHN KORELICH
LOST OAK VILLAGE CONDOMINIUMS**
 SAN LUIS OBISPO COUNTY
 SECTION 18, T30N, R11E, M03E1M.
 MORRO BAY SOUTH 7.5' U.S.G.S. QUAD

ATTACHMENT "A"

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