

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

IN THE MATTER OF THE PETITION OF
CLARENCE W. MCQUEEN OYSTER BREEDING
POND FOR REVIEW OF ORDER NO. 78-05
OF THE CALIFORNIA REGIONAL WATER
QUALITY CONTROL BOARD, CENTRAL COAST
REGION. OUR FILE NO. A-204.

Order No. WQ 79-18

BY THE BOARD:

On February 10, 1978, the California Regional Water Quality Control Board, Central Coast Region (Regional Board) adopted Order No. 78-05, NPDES Permit No. CA0048704 for Clarence W. McQueen Oyster Breeding Pond, Monterey County. On August 4, 1978, the State Board received a copy of a letter from Clarence W. McQueen (petitioner) to the State Board dated February 28, 1978, petitioning the State Board for review of Order No. 78-05. As the petitioner's February 28, 1978, letter would have arrived within 30 days of February 10, 1978, had it not been lost in the mail, it is hereby deemed timely filed for the purpose of State Board review.

BACKGROUND

Petitioner proposes to construct an oyster breeding pond parallel to a drainage ditch which empties into the west branch of Bennett Slough tributary to Elkhorn Slough approximately one mile north of Moss Landing Harbor, Monterey County. Twenty-five mature oysters will be used as breeding stock and about 250 pounds of oyster shell will be introduced into the pond upon which the spat may attach. No feed or chemicals will be added to the pond water.

Up to 20,000 gallons per day (gpd) of saline water will be pumped from Bennett Slough to the breeding pond which is a partially excavated and partially diked double trough. Each half of the pond is 1,000 feet long, two feet deep, seven feet wide at the top and three feet wide at the bottom. The troughs may be lined with a plastic membrane to prevent seepage. The drainage ditch to which the oyster breeding ponds overflow is described by the petitioner as an old drainage ditch containing water residue and junk. This ditch also is the drainage course for 160 acres of farmland.

Bennett Slough is a tidal estuary of considerable ecological value which flows to Moss Landing Harbor and Monterey Bay. The Water Quality Control Plan, Central Coast Basin, specifies in part that the present and anticipated beneficial uses of Moss Landing Harbor, Elkhorn Slough, and surrounding marshland waters include waterfowl habitat; industrial supply; contact and non-contact recreational use; shellfish harvesting; boating; marine habitat; commercial and sport fishing; and preservation of rare and endangered species. The Basin Plan also sets forth water quality objectives to protect these beneficial uses, including turbidity, pH, dissolved oxygen and temperature limitations. A map indicating the location of the oyster ponds, drainage ditch and Bennett Slough is attached to this order.

CONTENTIONS AND FINDINGS

1. Contention: Petitioner contends that the monitoring program for turbidity is unnecessary.

Finding: Order No. 78-05 provides that the turbidity of the discharge shall not exceed turbidity of the influent from

Bennett Slough by more than 20% when influent turbidity is less than 50 JTU, 10 JTU when influent turbidity is between 50 and 100 JTU, or 10% when influent turbidity is greater than 100 JTU. The specified monitoring program requires monthly monitoring of influent and effluent for turbidity levels.

Even though influent is to be filtered through a sand trap to remove suspended silt and oysters naturally filter out and deposit suspended materials, algae growth and turbulence at the end of the outlet from the ponds might contribute to increases in turbidity. This monitoring program appears to be reasonably designed to show the turbidity changes and impact of the project on the waters of Bennett Slough and determine compliance with the turbidity limitation. We find petitioner's claim without merit.

2. Contention: Petitioner contends that weekly temperature monitoring is unreasonable.

Finding: Although considerable guidance and direction is provided for temperature limitations and monitoring in the Basin Plan and the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bay and Estuaries in California (Thermal Plan), Order No. 78-05 contains no specific temperature limitation. The record discloses that the Regional Board was uncertain whether any temperature change would result from this discharge and that they needed more data on which to base limitations. While it is usually preferable to include temperature limits, specific limits can, in this case, await the development of base data to demonstrate whether this discharge in fact constitutes a discharge of "elevated temperature wastes" pursuant to the Thermal Plan.

If the record is insufficient to determine temperature effects, the monitoring program must be adequate to show the temperature changes caused by this project and how the discharge affects the receiving water. The monitoring program of Order No. 78-05 calls for weekly temperature monitoring of influent and effluent. The 20,000 gpd inflow/outflow will replace the volume of water in the ponds once each day negating some of the possible temperature increases due to stagnation in the ponds. However, when the pond overflows into the drainage ditch, the temperature of the wastewater may be subject to further increase prior to discharge to Bennett Slough. No clear rationale is found in the record in favor of weekly temperature monitoring over monthly as is provided for most other limitations of concern. As atmospheric temperatures change very little from month to month in this area and because petitioner, who lives outside the Monterey County area, would be inconvenienced by weekly monitoring of this relatively small, experimental project, we find that monthly monitoring of influent and effluent temperature would be satisfactory to assess the temperature effects of this project.

3. Contention: Petitioner contends that the limitation and monitoring for dissolved oxygen (DO) is unreasonable.

Finding: Order No. 78-05 provides that the discharge water "shall not cause the dissolved oxygen in the receiving water to be depressed below 5 mg/l." This limit is consistent

with the Basin Plan. The monitoring program contains the following receiving water requirement:

"An on-site analysis of water in Bennett Slough near the mouth of the drainage ditch shall be made monthly for dissolved oxygen. If the resulting value is less than 5 mg/l, a second sample shall be taken from the slough approximately 300 feet west of the first sampling point analyzed for dissolved oxygen."

Petitioner complains that Order No. 78-05 requires monitoring of DO at a point 1,250 feet from the point of his overflow at the point where the drainage ditch to which his ponds discharge empties into Bennett Slough (see attached map) and that his wastewater even though aerated upon overflow cannot raise the DO content of the drainage ditch water to 5 mg/l. However, petitioner fails to recognize that the DO limit with which he must comply in accordance with his permit refers to his discharge "causing" a DO depletion in Bennett Slough and that he is responsible only for the quality of his discharge at the point it reaches the receiving waters of Bennett Slough and any effects caused by his discharge in the receiving water.

Higher temperatures and salinities reduce the solubility of oxygen and the reoxygenation potential of the discharge. The biochemical oxygen demand (BOD) of the pond overflow and any drainage ditch mixture as it travels along the ditch to the slough will determine how much DO is removed before the overflow enters the slough. BOD is exerted by oxidation (aerobic decomposition) of organic matter by bacteria.

The technical issue is not, as petitioner argues, whether the overflow from the ponds can raise the DO of the ditch water to 5 mg/l, but rather whether the overflow after having

flowed down the drainage ditch through conditions of high potential BOD will be sufficiently depleted of oxygen to lower the DO of the slough below 5 mg/l. The record and the literature clearly establishes that 5 mg/l DO is the minimum level necessary to maintain a healthy biological community. Bennett Slough is normally a marginal habitat for fishlife because of its DO levels and is sensitive to increased inflow of oxygen demanding waste.

Bennett Slough, rather than the ditch to which petitioner's pond overflows, is the receiving water of concern in this case. A monitoring program for DO in Bennett Slough should provide data which would indicate if the DO of the slough is being forced below 5 mg/l. The monitoring program of Order No. 78-05 will show if the ditch flow is degrading the DO of the slough, but it will not indicate whether agricultural runoff to the drainage ditch or petitioner's discharge is causing the DO changes. This is very difficult to separate. However, if DO levels are shown to be depressed below 5 mg/l in the slough, the Regional Board Executive Officer can change the monitoring program to more specifically identify the cause. To do so at this time absent a demonstrated problem would unnecessarily cause a financial burden on the petitioner. We, therefore, find that the limitation and monitoring program for DO is reasonable and that petitioner's contention is without merit.

4. Contention: Petitioner contends that the pH limitation and monitoring program is unreasonable.

Finding: Order No. 78-05 provides that the discharge shall not cause the pH of the receiving water to vary from the

6.5 - 8.3 range. The Order requires quarterly pH effluent monitoring at a sampling station established at the point of discharge which shall be located where representative grab samples of the effluent can be obtained. Petitioner argues that his discharge will not cause a change in the pH of the receiving water.

Quarterly monitoring for pH is the minimum monitoring that will provide information to assess the impact of this project's discharge on the slough. Violation of the pH limit, as noted for DO above, may be difficult to trace to the cause if a change beyond the 6.5 - 8.3 range is revealed. However, if such a change is noted, the Regional Board Executive Officer may modify the monitoring program to determine the source in more detail.

The Basin Plan provides a water quality objective of 6.5 - 8.3 in waters with designated contact or non-contact recreational, agricultural or municipal beneficial uses. A 7.0 - 8.5 pH range is specified for waters with designated aquatic habitat protection beneficial uses, and the Basin Plan further specifies that changes in normal ambient pH levels shall not exceed 0.2 in waters with designated marine beneficial uses. Consequently, while the pH limit in Order No. 78-05 is adequate for some beneficial uses in the Bennett Slough area, the Regional Board should carefully review the above limits and monitoring data accumulated at some future date when the requirements are under normal periodic review. We find the pH limit and monitoring program appropriate and reasonable until such further review is conducted.

5. Contention: Petitioner contends that the monitoring costs are unreasonable.

Finding: The cost of data collection and preparation of monitoring reports must bear a reasonable relationship to the need for the reports and the benefits to be obtained therefrom (Water Code Section 13267(b)). The record discloses that the Regional Board in its hearing on February 10, 1978, simplified the monitoring program in the interest of reducing cost to the petitioner. This order further reduces sampling and the resulting cost. The beneficial uses of Bennett Slough and Moss Landing Harbor are significant and monitoring data is necessary to assess the effects of this discharge on the receiving waters. We find that the cost of this monitoring program is not unreasonable.

6. Contention: Petitioner contends that Order No. 78-05 is discriminatory in that no requirements exist for similar operations on state leased lands.

Finding: Petitioner does not specify similar operations where no requirements exist. Assuming arguendo that such operations exist in the waters of Bennett Slough or Moss Landing Harbor, such operations because they would be occurring in open water would be substantially different in their effect on the receiving waters than that of the petitioner.

The Regional Board has adopted requirements for American Shellfish Corporation which discharges to Moss Landing Harbor and Garrapata Fisheries which discharges to Elkhorn Slough. While these operations are different in nature, it should be noted that they are regulated, having monitoring programs imposed, and, in the case of Garrapata Fisheries requirements, an extensive

monitoring program was imposed. We find petitioner's claim without merit.

7. Contention: Petitioner contends that as the California Coastal Act of 1976 urges the creation and preservation of wetlands, the requirements imposed are in conflict with this Act.

Finding: The California Coastal Act (commencing with § 30000 of the Public Resources Code) requires the protection and preservation of coastal wetlands. Section 30231 specifically states that the biological productivity and quality of coastal wetlands appropriate to maintain optimum populations of marine organisms shall be maintained and, where feasible, restored through minimizing adverse effects of wastewater discharges. Order No. 78-05, therefore, is consistent with and supportive of the goals and objectives of the Act. We find petitioner's contention without merit.

CONCLUSIONS

The limitations and monitoring program of Order No. 78-05 are appropriate and proper with the exception that monitoring for temperature should be changed from weekly to monthly and the pH limitations should be reviewed as discussed under Contention 4, above. In addition, we feel it is inappropriate with a relatively small discharge of this type to continue to require monitoring even on a monthly basis if over a representative period of time the monitoring results show no significant effect on water quality. Therefore, if after 6 months of continuously monitoring (including some summertime monitoring when the discharge could be expected to have its most significant effect) the Regional

Board Executive Officer finds that the monitoring results show that this discharge is not having a detrimental effect on the receiving waters, the monitoring program should be modified accordingly. In addition, if the monitoring data reveals detrimental effects, the monitoring program should be expanded to disclose the source of the problem as discussed above.

ORDER

IT IS HEREBY ORDERED that the petition is denied except that the Regional Board Executive Officer shall modify the temperature monitoring as set forth above and review the entire monitoring program and the pH limitation at an appropriate future date as set forth in the Conclusion of this Order.

Dated: April 19, 1979

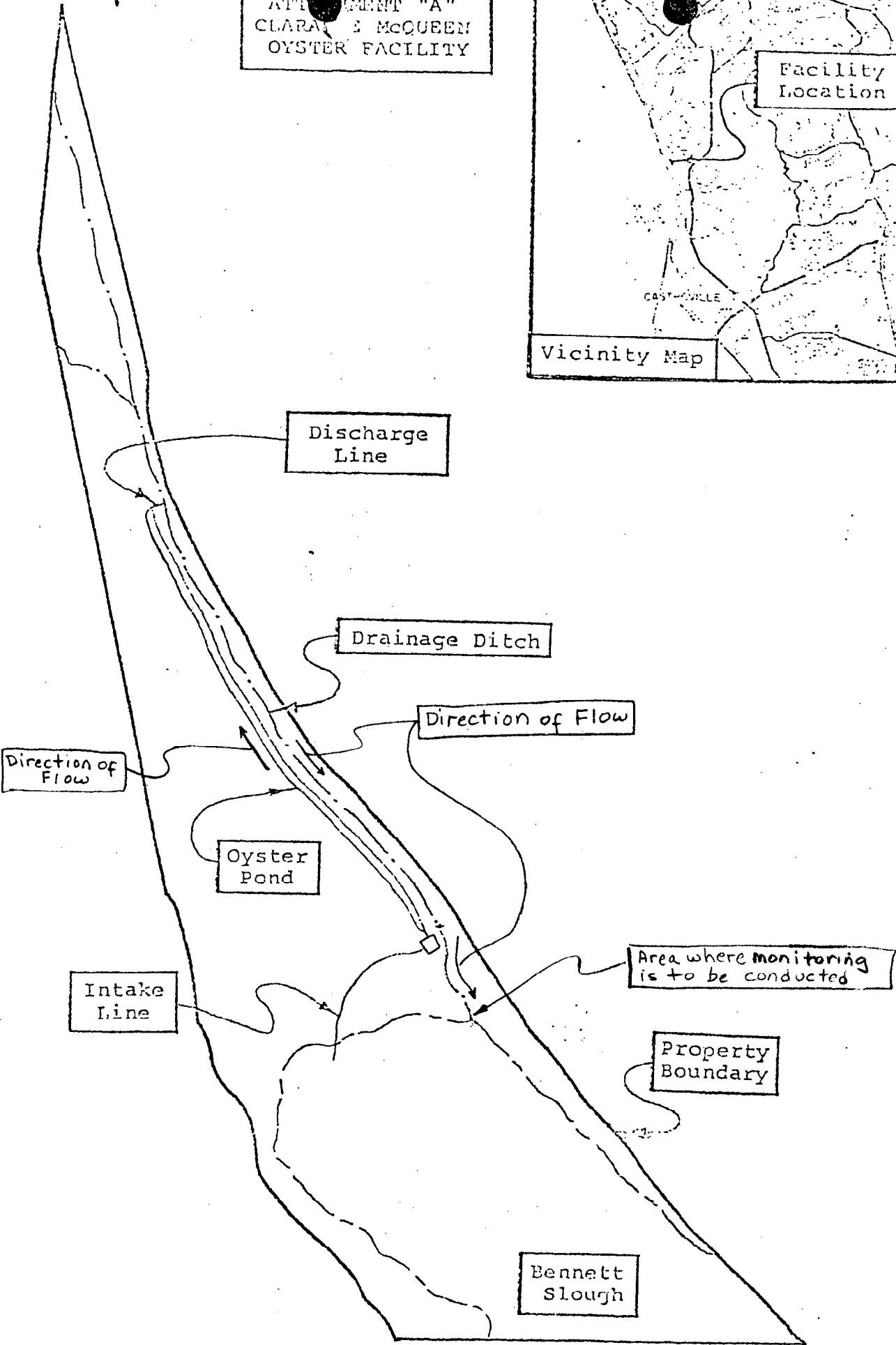
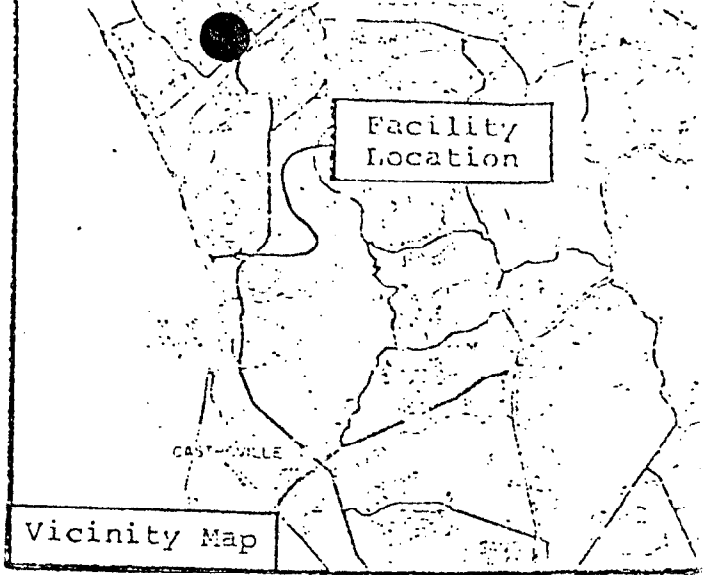
/s/ W. Don Maughan
W. Don Maughan, Chairman

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

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

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

ATTACHMENT "A"
CLARA E. McQUEEN
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