

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 72-79

WASTE DISCHARGE REQUIREMENTS
FOR
PHILLIPS PETROLEUM COMPANY

The California Regional Water Quality Control Board, San Francisco Bay Region finds:

1. Phillips Petroleum Company discharges 12 mgd of process wastewater from a 135,000 barrel per day petroleum refinery into Suisun Bay at the Company's Avon Wharf. In addition, Phillips Petroleum discharges approximately 1 mgd of coke sluicing water to Hastings Slough and a variable amount of storm waters at three locations into tributaries of Suisun Bay.
2. The Board adopted an Interim Water Quality Control Plan for the San Francisco Bay Basin in June 1971.
3. The beneficial uses of Suisun Bay as set forth in the Interim Basin Plan include:
 - a. industrial water supply
 - b. municipal water supply (seasonally at Mallard Slough)
 - c. recreation
 - d. esthetic enjoyment
 - e. preservation and enhancement of fish and wildlife
 - f. navigation
4. The requirements herein after prescribed are necessary to implement the Basin Plan for San Francisco Bay, protect the beneficial uses of Suisun Bay and prevent nuisance.
5. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for Phillips Petroleum Company.
6. The Board in a public meeting heard and considered comments pertaining to the discharge and the requirements prescribed herein.

IT IS HEREBY ORDERED, Phillips Petroleum Company shall comply with the following:

A. Discharge Specifications - Process Wastewater

1. Neither the treatment nor the discharge shall create a nuisance as defined in Section 13050(m) of the California Water Code.
2. Representative samples of the discharge shall not contain constituents in excess of the following limits.

<u>Constituent</u>	<u>Units</u>	<u>Mean</u>	<u>Maximum</u>
Settleable matter	ml/l/hr.	0.1	0.5
5 Day 20°C BOD	lbs/day	1500	3000
Ammonia(N)	lbs/day	930	1860
Phenol	lbs/day	6	12
Total Sulfide	lbs/day	20	56
Total Chromium	lbs/day	5.5	11.0
Toxicity Emission Rate <u>1/</u>	(Toxicity Units X mgd)	5.4	13.5
Oil and Grease	lbs/day	810	1620
Zinc	lbs/day	13.5	27.0

3. The process wastewater shall receive an initial dilution such that the concentration of the waste in the receiving waters is less than 1/20 of the 96 hr. median tolerance limit (TLM) of the waste. If the TLM exceeds 100 percent this requirement does not apply.
4. The discharge shall not have a pH of less than 7.0 nor greater than 8.5; or 6.5 to 8.5 when the natural ambient value is as low as 6.5.
5. At points in the waste treatment process where all sanitary wastes are present, the median and most probable number of coliform organisms in any 30-day period shall not exceed 230 MPN/100 ml, nor shall any value exceed 10,000 MPN/100 ml.

1/ The limits on toxicity emission rates will not apply if the mean toxicity concentration is less than 0.59 toxicity units and the maximum toxicity concentration is less than 0.87 toxicity units.

6. The discharge shall not exceed the natural temperature of Suisun Bay by more than 20° F.

B. Discharge Specifications - Coke Sluicing Water and Storm Water Discharges

1. Neither the treatment nor the discharge shall cause a nuisance as defined in Section 13050(m) of the California Water Code.
2. Representative samples of the discharge shall not contain constituents in excess of the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Maximum</u>
Settleable matter	ml/l/hr.	0.1
Oil and grease	mg/l	15

C. Discharge Specifications - Receiving Water

1. The discharge of any waste shall not cause:
 - a. Floating, suspended or deposited macroscopic particulate matter or foam in waters of the State at any place;
 - b. Bottom deposits or aquatic growths at any place;
 - c. Alteration of turbidity or apparent color beyond present natural background levels in waters of the State at any place;
 - d. Visible, floating, suspended or deposited oil or other products of petroleum origin in waters of the State at any place;
 - e. Tidal waters of the State to exceed the following limits of quality at any place within one foot of the water surface:

Dissolved oxygen	Minimum - 5.0 mg/l Annual median - 80% saturation
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When natural factors cause lesser concentrations, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.

pH	A variation from the natural ambient pH by more than 0.1 pH units.
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f. Tidal waters of the State to exceed the following limits of quality:

Toxic or Other Deleterious Substances	None shall be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife or waterfowl or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
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2. The discharges shall not cause a surface temperature rise greater than 4° F above the natural temperature of Suisun Bay.

D. Provisions

1. Mean values shall be based on the running average of samples representative of the discharge over any 30 day period.
2. Phillips Petroleum shall immediately take all possible measures to achieve compliance with the discharge specifications in this order and shall submit to the California Regional Water Quality Control Board, San Francisco Bay Region, by December 15, 1972, a report delineating the immediate measures that have been or will be taken.
3. Phillips Petroleum shall comply with the following time schedule to assure compliance with the requirements of this order:

<u>Task</u>	<u>Completion Date</u>	<u>Report of Compliance Due</u>
Develop a work plan to meet discharge requirements and to study the reduction of heavy metals used for cooling water treatment	December 1, 1972	December 15, 1972
Develop a conceptual plan and detailed time schedule for completion of final plans, award of construction contracts, completion of construction and compliance with requirements	December 1, 1973	December 15, 1973
Comply with temperature requirements	January 1, 1976	January 15, 1976

4. The requirements prescribed by this order amend the requirements prescribed by Resolution No. 67-31 adopted by the Board on June 13, 1967, which shall remain in full force and effect until the date Phillips Petroleum Company is to be in full compliance with these requirements pursuant to a complete time schedule to be adopted by this Board.
5. This order includes items 1, 6, 7 and 8 of the attached "Reporting Requirements" dated September 11, 1972.
6. This order includes items number 1 through 6 of the attached "Notifications" dated January 6, 1970.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an order adopted by the Regional Board on September 26, 1972.

Executive Officer

DEFINITION OF TOXICITY TERMINOLOGY

a. Toxicity Concentration (Tc)

Expressed in Toxicity Units (tu)

$$Tc (tu) = \frac{100}{96\text{-hr. TLM\%}}$$

b. Median Tolerance Limit (TLM%)

The TLM shall be determined by static or continuous flow bioassay techniques using standard test species.

When it is not possible to measure the 96-hr. TLM due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$Tc (tu) = \frac{\log (100 - S)}{1.7}$$

S = percentage survival in
100% waste

c. Toxicity Emission Rate (TER)

Is the product of the effluent Toxicity Concentration (Tc) and the waste flow rate expressed as mgd.

$$TER (tu \times mgd) = Tc (tu) \times \text{Waste Flow Rate (mgd)}$$