

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 77-5

NPDES NO. CA0004979

WASTE DISCHARGE REQUIREMENTS FOR:

ALLIED CHEMICAL CORPORATION
NICHOLS, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Allied Chemical Corporation, hereinafter called the discharger, submitted a report of waste discharge dated June 10, 1971, and detailed analyses of fluoride wastewater sources for the Nichols Plant on June 25, 1976, and September 28, 1976.
2. The discharger manufactures acetic acid, alum, ammonium fluoride, ammonium hydroxide, hydrochloric acid, hydrofluoric acid, nitric acid, sulfuric acid, and other industrial chemicals. The waste discharge amounts to an average of 3.6 million gallons per day, and consists of once-through cooling water from Suisun Bay combined with process wastewater, boiler blowdown, and sewage from a work force of about one hundred. During wet weather the waste contains stormwater runoff from process areas.
3. The combined wastes are treated in a lagoon for pH and temperature control prior to discharge to Suisun Bay, a water of the United States. Wastes from the manufacture of hydrofluoric acid and related chemicals receive lime treatment and settling in a series of ponds prior to recycle. The recycle ponds also receive stormwater runoff from fluoride process areas. During wet weather some overflow occurs from the fluoride recycle ponds to the lagoon which is used to treat other process wastes.
4. On March 14, 1973, this Board adopted Order No. 73-17, an NPDES (National Pollutant Discharge Elimination System) Permit prescribing discharge requirements covering the discharge of Allied Chemical Corporation from its industrial chemicals manufacturing plant on Nichols Road near Pittsburg.
5. On May 21, 1974, this Board adopted Order No. 74-42, a cease and desist order, for violation of requirements for ammonia, zinc, settleable matter, and pH and a threatened violation of the fluoride requirement by Allied Chemical Corporation's discharge.
6. On July 15, 1975, this Board adopted Order No. 75-44 amending the Cease and Desist Order No. 74-42.

7. The Board, on April 8, 1975, adopted a Water Quality Control Plan for San Francisco Bay Basin. The Plan contains water quality objectives for Suisun Bay.
8. The beneficial uses of the Suisun Bay and contiguous water bodies as set forth in the Basin Plan are:
 - a. Fish migration and spawning
 - b. Recreation
 - c. Waterfowl and migratory birds habitat and resting
 - d. Navigation
 - e. Seasonal source of municipal water supply at Mallard Slough
 - f. Industrial water supply
 - g. Esthetic enjoyment
9. Effluent limitation and toxic effluent standards established pursuant to Sections 301, 302, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.
10. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
11. Allied Chemical has demonstrated consistent compliance with those NPDES permit limitations found to be in violation at the time the Cease and Desist Orders were adopted with the exception of effluent fluoride limitations.
12. On January 18, 1977, the California Regional Water Quality Control Board, San Francisco Bay Region, after due notice, held a hearing under the provisions of Water Code Section 13301 regarding the discharge of waste and pollutants by Allied Chemical Corporation.

IT IS HEREBY ORDERED, Allied Chemical Corporation, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Water Pollution Control Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of waste having constituents in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>30 Day Average*</u>	<u>Maximum Daily*</u>	<u>Annual Average</u>
a. Ammonia as N	lbs/day	9.0	18.0	
	mg/l	-	30	
b. Fluoride	lbs/day	30.0.	55.0	20.0
c. Cadmium	mg/l	-	.05	
d. Arsenic	mg/l	-	.05	
e. Aluminum Total	lbs/day	60	120	
	mg/l	-	4.0	
f. Zinc	lbs/day	9.0	15.0	
	mg/l	-	0.5	
g. Lead	lbs/day	3.0	6.0	
	mg/l	-	0.2	
h. Settleable Matter	ml/1-hr	0.1	0.5	

*Values in addition to quantities and concentrations present in the water supply.

2. The discharger shall operate the fluoride recycle system so as to minimize the overflow of fluoride wastes to the lagoon. Prior to April 1, 1977, discharges from the fluoride recycle system to the lagoon which may occur despite the above shall have a fluoride concentration not to exceed 75 mg/l, and the limits specified in A.1.b. shall be increased by corresponding lbs/day.
3. The discharge shall not contain suspended solids in excess of those present in the influent water.
4. The discharge shall not have a pH of less than 6.5 nor greater than 8.5.
5. The maximum temperature of the discharge shall not exceed the ambient receiving water temperature by more than 20°F nor shall it exceed 86°F.
6. In any representative set of samples waste as discharged shall meet the following limit of toxicity:

The survival of test fishes in 96 hour bioassays of the effluent shall achieve a median of 90% survival for three consecutive samples and a 90 percentile value of not less than 70% survival for 10 consecutive samples.

7. At a point in the treatment process total coliform bacteria for a median of 5 consecutive samples shall not exceed 240 MPN/100 ml. Any single sample shall not exceed 10,000 MPN/100 ml when verified by a repeat sample taken within 48 hours.
8. The discharge of wastes from processes using chromic acid, other than to a Class 1 solid waste disposal site, is prohibited.

B. Receiving Water Limitations

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

a.	Dissolved oxygen	7.0 mg/l minimum. Annual median - 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	Dissolved sulfide	0.1 mg/l maximum
c.	pH	Variation from natural ambient pH by more than 0.2 pH units.
d.	Un-ionized Ammonia as N	0.025 mg/l Annual Median 0.4 mg/l Maximum
3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. Provisions

1. Neither the treatment nor the discharge of pollutants shall create a nuisance as defined in the California Water Code.
2. Stormwater runoff from the process, storage, and handling areas shall be either contained on site or routed to the lagoon for treatment prior to discharge.
3. The discharger shall comply with all items of this Order except the Annual Average limit in A.1.b. and A.8. immediately upon its adoption.

- a. The discharger shall comply with the following time schedule to assure compliance with the Annual Average limit in A.1.b.:

<u>Task</u>	<u>Completion Date</u>	<u>Report of Compliance Due</u>
Submit conceptual plan for achieving compliance	-	April 15, 1977
Full Compliance	July 1, 1977	July 15, 1977

- b. The discharger shall comply with the following time schedule to assure compliance with A.8:

<u>Task</u>	<u>Completion Date</u>	<u>Report of Compliance Due</u>
Submit Status Report	March 1, 1977	March 1, 1977
Full Compliance	June 1, 1977	June 15, 1977

4. The discharger shall submit to the Executive Officer a contingency plan for the continuous operation of facilities for the collection, treatment, and disposal of waste pursuant to the Regional Board's Resolution No. 74-10 by April 15, 1977.
5. Order No. 73-17, Order No. 74-42 and Order No. 75-44 adopted by this Board on March 14, 1973, May 21, 1974 and July 15, 1975, respectively are hereby rescinded.
6. The annual average discharge rate or concentration shall be the arithmetic average of any twelve consecutive 30-day average discharge rates or concentrations.
7. The 30-day average discharge rate or concentration shall be the arithmetic average of all the daily values calculated using the results of analyses of all samples collected during any 30 consecutive calendar day period. If fewer than four samples are collected and analyzed during any 30 consecutive calendar day period, compliance with the 30-day average limitation shall not be determined.

8. The daily discharge rate is obtained from the following calculation for any calendar day:

$$\text{Daily discharge rate} = \frac{8.34}{N} \sum_{i=1}^N Q_i C_i$$

in which N is the number of samples analyzed in any calendar day. Q_i and C_i are the flow rate (MGD) and the constituent concentration (mg/l) respectively, which are associated with each of the N grab samples which may be taken in any calendar day. If a composite sample is taken, C_i is the concentration measured in the composite sample and Q_i is the average flow rate occurring during the period over which samples are composited.

9. This Order includes items 1, 3, 5, 6, and 7 of the attached "Reporting Requirements", dated August 8, 1973.
10. This Order includes items 1, 2, 4, 5, 6, 7, 8, 9, and 10 of the attached "Standard Provisions", dated November 20, 1974.
11. This Order expires on January 18, 1982, and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.
12. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Board.

I, Fred H. Dierker, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 18, 1977.

FRED H. DIERKER
Executive Officer

Attachments:

Reporting Requirements 8/8/73
Standard Provisions 11/20/74

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REVISED
SELF-MONITORING PROGRAM
FOR

ALLIED CHEMICAL COMPANY
NICHOLS, CONTRA COSTA COUNTY

NPDES NO. CA0004979

ORDER NO. 77-5

SMP CONSISTS OF

PART A, dated January 1978

AND

PART B, ordered September 1, 1977
revised November 16, 1978
revised August 11, 1982

PART B

DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING, ANALYSIS AND OBSERVATIONS

A. INFLUENT

<u>Station</u>	<u>Description</u>
I	At a point in the water intake headworks at which a sample representative of the water being utilized in the plant can be collected. (A sketch showing the location of this sampling station shall accompany each report).

B. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At a point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present before discharge to Suisun Bay. (A sketch showing the location of this sampling station shall accompany each report.)

C. RECEIVING WATERS

<u>Station</u>	<u>Description</u>
C-1	At a point in Suisun Bay located over the discharge line and 60 feet offshore.
C-2	At a point in Suisun Bay located over the discharge ports of the discharge line.
C-3	At a point in Suisun Bay located in the center of the waste plume.
C-R1	At a point in Suisun Bay located not more than 20 feet offshore about 1000 feet westerly from the outfall.
C-R2	At a point in Suisun Bay located not more than 20 feet offshore about 1000 feet easterly from the outfall.

A sketch showing the locations of the above sampling stations shall accompany each report.

D. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
L-1 through L-1-'n'	Located along the perimeter levees of the chemical recycling treatment, and rainwater purge ponds at equidistant intervals not to exceed 200 feet. (A sketch showing the locations of these stations shall accompany each report.)
P-1 through P-1-'n'	Located along the periphery of the process, storage, and handling areas at equidistant intervals not to exceed 500 feet. (A sketch showing the locations of these stations shall accompany each report.)

E. SCHEDULE OF SAMPLING, MEASUREMENT AND ANALYSIS

The schedule of sampling, measurement and analysis is given in Table I (attached).

I, Fred H. Dierker, Executive Officer, hereby certify that the foregoing self-monitoring program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 77-5.
2. Was ordered by the Executive Officer on September 1, 1977, and is ordered revised on the date shown below.
3. May be reviewed at any time subsequent to the effective date upon written notice from either the Executive Officer or the Discharger, and will be revised upon written agreement of the Executive Officer and the Discharger.

FRED H. DIERKER
Executive Officer

Attachment:
Table I

Date Ordered _____

TABLE I
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I		E-001				All C Stations			All L Stations		All P Stations	
	G	C-24	G	C-24	Cont	O	G	C-24	O	G	O	O	
Flow Rate (mgd)		D		D									
BOD, 5-day, 20° C, or COD (mg/l & kg/day)													
Chlorine Residual & Dosage (mg/l & kg/day)													
Settleable Matter (ml/1-hr. & cu. ft./day)	2W		2W										
Total Suspended Matter (mg/l & lbs/day)		2 W		2 W									
Oil & Grease (mg/l & kg/day)													
Coliform (Total) (MPN/100 ml) per req't			(1) E										
Fish Toxicity, 96-hr. % Survival in undiluted waste				(2) M									
Ammonia Nitrogen (mg/l & lbs/day)		W		W									
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)			M				M						
pH (units)					(3) Cont		M						
Dissolved Oxygen (mg/l and % Saturation)							M						
Temperature (°F)					(4) Cont		M						
Apparent Color (visual observation)						2/W			M				
Secchi Disc (inches)													
Sulfides (if DO < 5.0 mg/l) Dissolved (mg/l)							M						
Arsenic (mg/l & lbs/day)		Q		Q									
Cadmium (mg/l & lbs/day)		Q		Q									
Chromium, Total (mg/l & lbs/day)													
Copper (mg/l & kg/day)													
Cyanide (mg/l & kg/day)													
Silver (mg/l & kg/day)													
Lead (mg/l & lbs/day)		M		M									

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I		E-001				All C Stations			All L Stations		All P Stations	
	G	C-24	G	C-24	Cont	O	G	C-24	O	G	O	O	
Mercury (mg/l & kg/day)													
Nickel (mg/l & kg/day)													
Zinc (mg/l & lbs/day)		W		W									
PHENOLIC COMPOUNDS (mg/l & kg/day)													
All Applicable Standard Observations						2/W			M		2/W		
Bottom Sediment Observations													
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)													
Fluoride (mg/l & lbs/day)		W		W						(5) E			
Aluminum, Total (mg/l & lbs/day)		Q		Q									
Un-ionized Ammonia as N (mg/l)								M					
Observe for containment of Runoff													(6) E

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
 C-24 = composite sample - 24-hour
 Cont = continuous sampling
 O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
 E = waste effluent stations
 C = receiving water stations
 P = treatment facilities perimeter stations
 L = basin and/or pond levee stations

FREQUENCY OF SAMPLING

E = each occurrence
 D = once each day
 W = once each week
 M = once each month
 2/W = 2 days per week
 2W = every 2 weeks
 Cont = continuous
 Q = once each quarter

FOOTNOTES: See attached page for footnotes

FOOTNOTES FOR TABLE

- (1) Coliform sampling is to be performed 2/W for two weeks only after each purge of sewage-bearing waste from the recycling system is made. First sample shall be collected within 12 hours of each purge. Results of the coliform sampling shall be reported as the difference between the total coliform of E-001 and I during these events.
- (2) If percent survival is less than 50% in the undiluted waste, report the 96-hour TL_m .
- (3) In addition to the maximum, minimum, and average effluent pH values, report the following information about effluent pH violations for each month (report separately this information for over and under the pH limitations):

- a. Percent of time effluent pH was outside the limitations.
- b. Number of events when pH was outside the limitations, and the minimum (or maximum) pH value for each event.
- c. Total (cumulative) hours and minutes that pH was outside the limitations, and the total volume discharged during that cumulative period.
- d. Duration of the longest continuous period of such violation, and the volume discharged.

Note that strip charts of the effluent pH record must be retained with other laboratory records and made available for inspection by the Regional Board and EPA staffs.

- (4) In addition to the maximum temperature, report the following information about effluent violations for each month:
 - a. Percent of time effluent temperature exceeded the limitation.
 - b. Number of events when temperature exceeded the limitation.
 - c. Total (cumulative) hours and minutes that temperature exceeded the limitation.
 - d. Duration of the longest continuous period of such violation.

Note that strip charts of the effluent temperature record must be retained with other laboratory records and made available for inspection by the Regional Board and EPA staffs.

- (5) If there is any discharge from the chemical recycling ponds, it is to be reported to the Regional Board by phone within 24 hours. A grab sample is to be taken and the flow rate and fluoride concentration reported for each day the discharge occurs.
- (6) After each rainfall producing runoff.