CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 79-153

NPDES NO. CA0004910

WASTE DISCHARGE REQUIREMENTS FOR:

DOW CHEMICAL COMPANY, U. S. A.,
WESTERN DIVISION, PITTSBURG
CONTRA COSTA COUNTY

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

1. Dow Chemical Company, U. S. A., hereinafter called the discharger, filed an application dated August 2, 1979, and amended by letters dated September 14, and October 23, 1979, for renewal of NPDES Permit No. CA0004910 for the discharge of wastes from its chemical manufacturing plant at Pittsburg. The existing permit expires on December 17, 1979.

2. The discharger manufactures chlorine, sodium hydroxide, hydrogen, latex, mining chemicals and chlorinated solvents by methods defined respectively, by the Environmental Protection Agency as the diaphragm cell process, water contact as steam diluent or absorbent processes, aqueous liquid phase reactions systems and the ABS and SAN resin product classification. The definitions are set forth in Title 40, Code of Federal Regulations, Sections 414.20, 414.30, 415.60, and 416.80.

   a. Waste 001 contains supernatant from the water treatment systems and is discharged from its storage pond into New York Slough, after neutralization, through an outfall about 25 feet deep and approximately 100 feet offshore. Occasionally, treated process waste is discharged with the waste from the water treatment systems. The average discharge rate is 1.2 million gallons per day (mgd) with 0.5 mgd from the water treatment system and 0.7 mgd from process waste. The maximum discharge is 2.9 mgd.

   b. Waste 002 is the overflow from the water treatment systems and the stormwater runoff from the plant. Waste 002 is discharged into Kirker Creek about 300 feet upstream from its mouth in New York Slough. There is no discharge of this waste stream at this point now, but future discharge is proposed.

3. In April 1975, the Board adopted a Water Quality Control Plan for the San Francisco Bay (Basin Plan). The Plan contains water quality objectives for New York Slough and contiguous waters.

4. The beneficial uses of New York Slough and contiguous waters, as identified in the Basin Plan, are:

a. Recreation (contact and non-contact).
b. Fish migration and spawning.
c. Habitat for wildlife and estuarine organisms including some rare and endangered species.
d. Industrial service and process water supply.
e. Esthetic enjoyment.
f. Navigation.
g. Commercial and sport fishing.
h. Municipal water supply.

5. Effluent limitation, toxic effluent standards, established pursuant to Sections 208(b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.

6. This project involves the continued operation of a privately-owned facility with negligible or no expansion of use beyond that previously existing. Consequently, this project will not have a significant effect on the environment based upon the exemption provided in Section 15101, Title 14, California Administrative Code.

7. 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.

8. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED THAT the discharger 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 001 which contains constituents in excess of the following limits is prohibited:

a. Constituent	Units	30-Day Average	Maximum Daily
Total suspended solids	lb/day	771	1580
	kg/day	350	715
Settleable matter	ml/l-hr	0.1	0.5
Lead*	lb/day	2.55	5.10
	kg/day	1.16	2.31
BOD_5	lb/day	360	792
	kg/day	163	359
COD*	lb/day	945	1950
	kg/day	429	885

*Allowable incremental increase over intake water.

Constituent	Units	30-Day Average	Maximum Daily
Total Chromium*	lb/day	0.660	1.32
	kg/day	0.299	0.599
Chlorine	mg/l		0.0

*Allowable incremental increase over intake water.

b. Waste 001 shall not have pH of less than 6.5 nor greater than 8.5.

c. In any representative set of samples the waste as discharged shall meet the following limit of quality:

No effluent shall exhibit a TL_m of less than 100 percent under a 96-hour bioassay with test organisms acceptable to this Regional Board.

If the discharger can demonstrate to the satisfaction of the Regional Board pursuant to public hearing, that the principal toxicant in the effluent is a non-conservative toxicant which is subject to rapid decay in the receiving water and that the wastewater is rapidly rendered harmless upon discharge then the Regional Board will establish revised toxicity requirements.

d. The temperature of waste 001 shall not exceed 86°F.

e. The maximum temperature of waste 001 shall not exceed the natural receiving water temperature of New York Slough by more than 20°F.

2. The discharge of waste 002 which contains constituents in excess of the following limits is prohibited:

a.

Constituent	Units	30-Day Average	Maximum Daily
Total suspended solids	mg/l	30	45
	lb/day	43.0	97.6
	kg/day	19.5	44.3
Iron, dissolved	mg/l	1.0	1.5
	lb/day	1.43	3.25
	kg/day	0.651	1.48
Aluminum, dissolved	mg/l	1.0	1.5
	lb/day	1.43	3.25
	kg/day	0.651	1.48
Settleable matter	ml/l-hr	0.1	0.5

b. Waste 002 shall not have pH of less than 6.5 nor greater than 8.5.

c. In any representative set of samples the waste as discharged shall meet the following limit of quality:

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.

B. Receiving Water Limitations

1. The diacharge 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 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.	Undissociated ammonium hydroxide as N	0.4 mg/l maximum 0.025 mg/l annual median

3. Waste 001, either individually or combined with other discharges, shall not create a zone, defined by water temperatures of more than $1^{o}F$ above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of Suisun Bay at any point.

4. No discharge shall cause a surface water temperature rise greater than $4^{o}F$ above the natural temperature of the receiving waters at any time or place.

5. 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. Waste 001 shall receive an initial dilution of at least 10:1.

2. There shall be no bypass of untreated wastewater to waters of the State.

3. This Board's Order No. 74-188 is rescinded on the effective date of this Order.

4. This Board's Order No. 71-40 remains in effect, except for Sections A.2 through 6, B, and C which were rescinded on December 17, 1974.

5. The discharger shall review and update annually its contingency plan as required by Regional Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

6. This Order includes the attached "Standard Provisions, Reporting Requirements and Definitions" dated April 1977 except for items A.5., B.2., and B.5.

7. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing provided the Regional Administrator, U. S. Environmental Protection Agency, has no objections.

8. This permit may be modified, or, alternatively, revoked and reissued, to comply with any applicable effluent limitation issued pursuant to the order the United States District Court for the District of Columbia issued on June 8, 1976, in Natural Resources Defense Council, Inc. et. al. v. Russell E. Train, 8 ERC 2120 (D.D.C. 1976), if the effluent limitation so issued:

(a) is different in conditions or more stringent than any effluent limitation in the permit; or

(b) control any pollutant not limited in the permit.

9. This Order expires on March 31, 1981, 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.

I, Fred H. Dierker, Executive Officer, do hereby certify 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 November 20, 1979.

FRED H. DIERKER
Executive Officer

Attachments:
Standard Provisions, Reporting Requirements & Definitions - April 1977
Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

DOW CHEMICAL, U.S.A.

NPDES NO. CA 0004910

ORDER NO. 79-153

CONSISTS OF

PART A , dated 1/78

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

Station	Description
I-N	At any point in the water supply intake system prior to any usage or treatment of intake water.

B. EFFLUENT

Station	Description
E-001	At any point in the outfall from the treatment facilities for Waste 001 between the point of discharge and the point at which all waste tributary to that outfall is present.
E-002	At any point in the outfall from the treatment facilities for Waste 002 between the point of discharge and the point at which all waste tributary to that outfall is present.

C. RECEIVING WATERS

Station	Description
C-11	At a point in New York Slough, located not more than 100 feet upstream from the offshore end of the outfall for Waste 001.
C-12	At a point in New York Slough, located not more than 100 feet downstream from the offshore end of the outfall for Waste 001.
C-13	At a point in New York Slough, located not more than 50 feet offshore from the offshore end of the outfall for Waste 001.
C-21	At a point in Kirker Creek, located within 10 feet of the point of discharge of Waste 002.
C-22	At a point in Kirker Creek, located 100 feet downstream from the point of discharge of Waste 002.
C-23	At a point in Kirker Creek, located at the mouth of Kerker Creek.
$C-R_1$	At a point in San Joaquin River, located at the "Antioch" salinity observation station.
$C-R_2$	At a point in Suisun Bay, located at the "O & A Ferry" salinity observation station.

D. LAND OBSERVATIONS

Station	Description
P-101 through P-10"n"	Located at the corners and midpoints of the perimeter of the treatment facilities for Waste 001. (A sketch showing the locations of these stations will accompany each report.)
P-201 through P-20"N"	Located along the corners and midpoints of the waste treatment and disposal facilities for Waste 002. (A sketch showing the locations of these stations will accompany each report.)

II. SCHEDULE OF SAMPLING AND ANALYSIS

A. The schedule of sampling and analysis shall be that given as Table I.

III. MODIFICATIONS TO PART "A"

Delete: C.3, C.4, and D.3.

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. 79-153.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

Attachment:
Table 1 (4 pages)

Effective Date 12/5/79

Order No. 79-153

TABLE I

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-N			E-001				E-002					
TYPE OF SAMPLE	Cont	C-24	G	Cont	C-24	G	O	Cont	C-24	G	O		
Flow Rate (mgd)	Cont			Cont				Cont					
BOD, 5-day, 20° C (mg/l & kg/day)					W								
Chlorine Residual (mg/l & kg/day)						W							
Settleable Matter (ml/1-hr. & cu. ft./day)			W			W				W			
Total Suspended Matter (mg/l & kg/day)					W				W				
Oil & Grease (mg/l & kg/day)						M[1]							
Coliform (Total or Fecal) (MPN/100 ml) per req't													
Fish Toxicity, 96-hr. TL_{50} or % Survival in undiluted waste					M				Q				
Ammonia Nitrogen (mg/l & kg/day)													
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)													
pH (units)				Cont						D			
Dissolved Oxygen (mg/l and % Saturation)													
Temperature (°F)				Cont									
Apparent Color (color units)													
Secchi Disc (inches)													
Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l)													
Arsenic (mg/l & kg/day)													
Cadmium (mg/l & kg/day)													
Chromium, Total (mg/l & kg/day)		M			M								
Copper (mg/l & kg/day)													
Cyanide (mg/l & kg/day)													
Silver (mg/l & kg/day													
Lead (mg/l & kg/day)		M			M								

Order No. 79-53

TABLE I

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	C-11,-12 & 13		C-21thru -23 (3)											
TYPE OF SAMPLE	G	O	G	O										
Flow Rate (mgd)														
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)														
Total Suspended Matter (mg/l & kg/day)														
Oil & Grease (mg/l & kg/day)														
Coliform (Total or Fecal) (MPN/100 ml) per req't														
Fish Toxicity, 96-hr. TL_{50} % Survival in undiluted waste														
Ammonia Nitrogen (mg/l & kg/day)														
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)														
pH (units)	M^2		M^2											
Dissolved Oxygen (mg/l and % Saturation)	M^2		M^2											
Temperature (°C)	M^2		M^2											
Apparent Color (color units)														
Secchi Disc (inches)														
Sulfides (if DO ≤ 5.0 mg/l) Total & Dissolved (mg/l)	M^2		M^2											
Arsenic (mg/l & kg/day)														
Cadmium (mg/l & kg/day)														
Chromium, Total (mg/l & kg/day)														
Copper (mg/l & kg/day)														
Cyanide (mg/l & kg/day)														
Silver (mg/l & kg/day														
Lead (mg/l & kg/day)														

TABLE I (continued)

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-N			E-001				E-002				
TYPE OF SAMPLE	Cont	C-24	O	Cont	C-24	G	O	Cont	C-24	G	O	
Mercury (mg/l & kg/day)												
Nickel (mg/l & kg/day)												
Zinc (mg/l & kg/day)												
PHENOLIC COMPOUNDS (mg/l & kg/day)												
All Applicable Standard Observations												
Bottom Sediment Analyses and Observations												
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)												
COD (mg/l & kg/day)		W			W							
IRON (mg/l & kg/day)									W			
Aluminum, dissolved (mg/l & kg/day)									W			

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

Sampling Station	C-11,-12 & -13		C-21 thru -23 incl(3)										
TYPE OF SAMPLE	G	O	G	O									
Mercury (mg/l & kg/day)													
Nickel (mg/l & kg/day)													
Zinc (mg/l & kg/day)													
PHENOLIC COMPOUNDS (mg/l & kg/day)													
All Applicable Standard Observations	W		W										
Bottom Sediment Analyses and Observations													
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)													

NOTES FOR TABLE I

1. Separately collect and analyze three grab samples for oil and grease on each sampling day. Report the arithmetic average of these as the value for that day, and use it to calculate the kg/day discharge rate.

2. Take sample within one foot of the water surface.

3. Sampling required only in months when discharge occurs at E-002.

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

FREQUENCY OF SAMPLING

D = once each day
W = once each week
M = once each month
Y = once each year
18M = each 1½ year
2/Y = once in April and once in September
Cont = continuous