MINISTRY OF ENVIRONMENT AND FORESTS NOTIFICATION
New Delhi, the 22nd April, 1993
{PART II, SECTION 3, SUB-SECTION (1)}

FORM – V
(See Rule 14)

Environmental Statement for the Financial Year Ending 31st March, 2024

PART – A

i)	Name and address of the Owner / Occupier of the Industry operation or process.	:	Shri. Krishnamoorthy Krishnan (R) 503 Jai Hari Kunj CHS Ltd., 12/13A,Shree Nagar Estate, Goregaon – West, Mumbai 400 062
ii)	Industry Category Primary (STC Code) Secondary (STC Code)	: : :	- RED
iii)	Production Capacity – Units	:	Please refer Annexure I
iv)	Year of Establishment	:	1959 / 2007 November Membrane cell plant
v)	Date of the last environmental statement submitted.	:	22/08/2023

PART – B

Water and Raw Material Consumption

i)	Water Consumption m^3/day Process Cooling Domestic	 : : :	 2620 m^3/d 300 m^3/d 30 m^3/d

Sl. No.	Name of the Products	Process water consumption per unit of product output (M^3/T)	
		During the previous financial year 2022 – 2023	During the current financial year 2023 – 2024
		(1)	(2)
1.	CAUSTIC SODA	6.80	5.10
2.	HYDROCHLORIC ACID	3.62	2.67
3.	LIQUID CHLORINE	Nil	Nil
4.	TRICHLOROETHYLENE	19.92	11.89
5.	BENEFICIATED ILMENITE	6.59	6.86
(Please refer Annexure I A)			

Contd...2

ii) Raw Material Consumption

*Name of raw materials	Name of Products	Consumption of raw material per unit of product out put	
		During the previous financial year 2022 – 2023	During the current financial year 2023 – 2024
Please refer Annexure II			

- Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials.

PART – C

Pollution discharged to environment / unit out put
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (Mass / day)	Concentrations of pollutants in discharges (Mass / Volume)	Percentage of variation from prescribed standards with reasons
a) Water	Please Refer Annexure II A		
b) Air	For breakup details, please Refer Annexure II B Stack analysis report and Ambient Air Quality analysis reports furnished by Tamil Nadu Pollution Control Board are attached herewith – Please refer Annexure II C.		

PART - D

HAZARDOUS WASTES

(As specified under Hazardous& Other Waste (Management & Transboundary Movement) Rules, 2016)

Hazardous Wastes	Total Quantity (in MTs)	
	During the previous financial year(2022-2023)	During the current financial year (2023-2024)
a) From Process	Nil	Nil
b) From Pollution Control facilities	1166.508 (ETP Sludge)	1055.340 (ETP Sludge)
c) Used Oil	0.475*	0.469*
d) Waste Containing Oil	Nil	Nil

*Used Oil is transferred to CPP and Sold to authorized agency. Refer Annexure – VII.

Contd…3

PART – E

SOLID WASTES

Non-Hazardous Wastes	Total Quantity	
	During the previous financial year 2022 – 2023	During the current financial year 2023 – 2024
a) From Process – CALCIUM HYDROXIDE CALCIUM CHLORIDE From Membrane cell Caustic Soda Plant BRINE SLUDGE	2402 MT 2100 MT 3602.034 MT	2527 MT 2184 MT 2622.484 MT
b) From Pollution Control Facilities	Nil	Nil
c) 1) Quantity recycled or re-utilized within the Unit.	Calcium Hydroxide 1746 MT	Calcium Hydroxide 1837 MT
2) Sold	Calcium Chloride 2100 MT Calcium Hydroxide 656 MT	Calcium Chloride 2184 MT Calcium Hydroxide 690 MT
3) Disposed	Brine Sludge 3602.034 MT	Brine Sludge 2622.484 MT

For the details of solid waste generation from the process and from Pollution Control facility, please refer Annexure III-A and B

PART - F

Please specify the characterizations (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Please refer Annexure IV

PART – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

Please refer Annexure V

Contd…4

PART - H

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution.

Please refer Annexure VI

PART - I

Any other particulars for improving the quality of the environment.

Please refer Annexure VI

Signature:

Name & Address of the person submitting the: Environmental Statement	S. Suresh VICE PRESIDENT (Manufacturing) DCW LIMITED SAHUPURAM PO 628229 THOOTHUKUDI DIST.
On behalf of Name and Address of the Unit :	DCW LIMITED (CS DIVISION) SAHUPURAM 628 229 THOOTHUKUDI DIST

Annexure – I

DCW Limited, Sahupuram.

DETAILS OF PRODUCTS MANUFACTURED

Sl. No.	Name of the Products	Consented Quantity in MT per month	Actual Quantity in MT per month (Avg.)
1.	CAUSTIC SODA	8,490	6044
2.	TRICHLOROETHYLENE	600	253
3.	BENEFICIATED ILMENITE (UGI)	6,000	4905
4.	LIQUID CHLORINE	3,000	1627
5.	HYDROCHLORIC ACID	7,500	4207
BY-PRODUCT			
1.	CALCIUM HYDROXIDE	450	211
2.	SODIUM HYPOCHLORITE (RECOVERED FROM CHLORINE EMISSION CONTROL)	450	312
3.	FERRIC CHLORIDE (RECOVERED FROM EFFLUENT)	1,000	318

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PART – A

i) Name and address of the Owner / Occupier of the Industry operation or process. : Shri. Krishnamoorthy Krishnan
(R) 503 Jai Hari Kunj CHS Ltd.,
12/13A,Shree Nagar Estate,
Goregaon – West,
Mumbai 400 062

ii) Industry Category

Primary (STC Code) : Red
Secondary (STC Code) : -

iii) Production Capacity - Units :	Consented (TPA)	Actual (TPA)
PVC	140000	93553
CPVC	21500	15252

iv) Year of Establishment : 1983 (Revamped) – Expanded capacity CTO obtained during 08.08.2023

v) Date of the last environmental statement submitted. : 22/08/2023

PART – B

Water and Raw Material Consumption

i) Water Consumption m^3 / Day

		PVC	CPVC
Process	:	895 m^3	210 m^3
Cooling	:	1050 m^3	90 m^3
Domestic	:	6 m^3	

Sl. No.	Name of the Products	Process water consumption per unit of product out put	
		During the previous financial year 2022 – 2023	During the current financial year 2023 – 2024
		(1)	(2)
1.	Poly Vinyl Chloride	3.847 m3	3.509 m3
2.	Chlorinated Poly Vinyl Chloride	NA – (no process water consumption for the product manufactured)	4.819 m3#

Due to modernization of the process the water is consumed for manufacture of CPVC.

Contd..2

ii) Raw Material Consumption

Name of raw materials	Name of Products	Consumption of raw material per unit of product out put	
		During the previous financial year 2022 - 2023	During the current financial year 2023 – 2024
1) VINYL CHLORIDE MONOMER	PVC RESIN	1.010	1.010
2) PVC Resin	Chlorinated Poly Vinyl Chloride	0.770	0.780
3) Chlorine	Chlorinated Poly Vinyl Chloride	0.580	0.540

PART – C

Pollution discharged to environment / unit out put
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (Mass / day)	Concentrations of pollutants in discharges (Mass / Volume)	Percentage of variation from prescribed standards with reasons
a) Effluent Water	120 m3/day from PVC ETP RO Reject and used in ilmenite plant for product washing.	pH: 6.98 – 8.3 TSS: 2 mg/l TDS: 440 - 780 mg/l Chloride: 180-342 mg/l Sulphate: 24 - 82 mg/l Oil and Grease: 2.16 – 2.85 mg/l BOD: 2.16 – 2.85 mg/l COD: 48 – 112 mg/l	
b) Sewage	6.0 KLD	pH: 7.05 – 8.25 TSS: 2 mg/l BOD: 2.48 – 7.55 mg/l	After treatment from STP, it is used for milk of lime preparation.
c) Air			
Particulate Matter	PVC – 9.12 kg/day CPVC – 5.11 kg/day	PVC – 26.46 mg/Nm^3 CPVC – 15.80 mg/Nm^3	- 82.4 % (PVC) - 89.4 % (CPVC)

Contd.. 3

PART - D
HAZARDOUS WASTES

As specified under Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016

Hazardous Wastes	Total Quantity	
	During the previous financial year (2022-2023)	During the current financial year (2023-2024)
a) From Process	Nil	Nil
b) From Pollution Control Facilities.	No hazardous waste from PVC Unit.	
c) Used Oil	1.332 MT	1.446 MT

PART – E
SOLID WASTES

Solid Wastes	Total Quantity (MT)	
	During the previous financial year 2022 - 2023	During the current financial year 2023– 2024
a) From Process	34.870	53.475
b) From Pollution Control Facilities	Nil	Nil
c) 1) Quantity recycled or re-utilized within the Unit.	Nil	Nil
2) Sold (as Off grade Resin)	34.870	53.475
3) Disposed	Nil	Nil

PART - F

Please specify the characterizations (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

S. No	Type of waste	Characterization	Mode of disposal
1	Hazardous waste Used oil	Used Oil composition: 1) Cadmium + Chromium + nickel (Nl): 28.64 mg/kg 2) Arsenic : BDL (DL: 0.5 mg/kg) 3) Lead (as PB) : 31.46 mg/kg 4) Polychlorinated biphenyl (PCBs): BDL (DL:1.0 mg/Kg)	Sold to authorized vendors
2	Solid waste Off grade resins	-	The generated quantity is sold.

Used oil of 1.446 MT fall under Category 5.1 is transferred to CPP and sold to authorized agency. Refer Annexure – 1.

Contd.. 4

PART – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

- We have already installed On-line system for VCM emission monitoring at ten vantage locations of the plant process, handling and storage areas, with an investment of around Rs.10 lakhs.
- The critical air quality parameter (VCM) is monitored continuously and the same is hooked up to Care Air Centre at the TNPCB HQ at Chennai.
- All dryers are provided with cyclone separators to control particulate matter emission and operated effectively.
- As water conservation efforts, we have carried out recycling and reuse of treated rejects for the product washing in the Ilmenite plant of our unit. The ultrafiltration system is provided for the effluent generated from the superdecantor and the permeate is completely reused in DM Plant.

PART - H

Additional measures / investment proposal for environmental protection including abatement of pollution, prevention of pollution.

- We have already installed On-line system for VCM emission monitoring at ten vantage locations of the plant process, handling and storage areas, with an investment of around Rs.10 lakhs.
- The critical air quality parameter (VCM) is monitored continuously and the same is hooked up to Care Air Centre at the TNPCB HQ at Chennai.
- We have introduced advanced stripping tower system for the recovery of residual VCM from PVC slurry with an investment of about Rs.14 crores.
- Scrubbing system provided in the Fluidized Bed Dryer for effective dust control in the dryer vent.
- We have installed Continuous ambient air quality monitoring station to monitor PM10, PM2.5, VCM, SO2, NOx, CL2 & Ammonia) in Ambient surrounding the unit and the same has been connected to Care Air Centre, TNPCB from 28.07.2022 onwards.
- We have installed Continuous Emission monitoring station to monitor SPM & VCM in dryer stack and the same has been connected to Care Air Centre, TNPCB from 01.11.2023 onwards.

Contd.. 5

PART - I

The CSR activities carried out during the period 2023-24 by the management to improve the environment, ensure environmental sustainability and rural developments are:

- As per the request from Dy Director, Health services, Thoothukudi District, donation of “Robonik Prietest Touch Plus Bio Chemistry Analyser” to Public Health Centers in and around Saupuram. 8 villages to be benefitted.
- Preventive Health care, conducting health camp in the nearby villages twice in a year.
- Medical aids to the poor people, below poverty, who needs supports.
- Construction of Toilet blocks in Anganvadi in Singhithurai village in Kayalpatnam Municipal limit.
- Distribution groceries, food pockets, arranging mechanical equipment during flood, arranging boat for transport the people affected during flood etc .
- Providing drinking water facility to nearby schools, Orphanages, Old age home etc
- Painting to Government School at Mukkani Village. Repairs & Modification works to Anganvadies in Lakshmipuram, Singhithurai & Thalaivanvadali Villages
- Encouraging & Supporting the women for their development: Giving training in tailoring education to the women below poverty needs support for their livelihood
- Educational aid to poor student in Arumuganeri Village
- Donation of table, chairs, benches CCTV camera, computer etc., to nearby schools.
- Donation of SS plates, tumbler, jugs to Union Schools in Kayalpatnam Municipal Limit.
- Career guidance program conducted to the school children after 10th & +2.
- Donation of Sewing Machines, Cycles, Computers, repair works in salt field, fisherman boat repair works, etc.,
- Construction of shed for old age home “Light Social Welfare Trust” at Arumuganeri
- Cleaning the river Thamirabarani & bushes cleaning in Mukkani area.
- Repairs and restoring works to the temples in and around of Sahupuram
- Providing sports goods to the youth in and around Sahupuram.

Contd.. 6

- Providing High mast lamp in Kayalpatnam, Sernthamangalm & Korkai Village.
- Providing shed for Yoga Centre, yoga mats, water filter, invertor wiring, etc to Primary Health Centre in Authoor
- Construction of AC sheet shed in front of Bathrakaliamman temple belongs to Nadar Community in Sernthamangalam for study purpose.
- Bus passenger shelter in Narasanvilai village & nearer to VOC port in Thoothukudi.
- Construction of library building for ST community in East Shanmugapuram in Arumuganeri.

Signature:

Name & Address of the person submitting the: Environmental Statement	S.SURESH VICE PRESIDENT (Manufacturing) DCW LIMITED SAHUPURAM PO 628229 THOOTHUKUDI DIST.
On behalf of Name and Address of the Unit :	DCW LIMITED (PVC DIVISION) SAHUPURAM 628 229 THOOTHUKUDI DIST

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12/13A,Shree Nagar Estate,
Goregaon – West,
Mumbai 400 062.

ii) Industry Category

Primary (STC Code) : RED
Secondary (STC Code) : -

iii) Production Capacity - Units : Consented – 58.27 MW (2 x 25 + 8.27)
Actual Generation for 23-24 – 23.89 MW

iv) Year of Establishment : June 2008 & Nov 2010

v) Date of the last environmental statement submitted. : 22/08/2023

PART – B

Water and Raw Material Consumption

i) Water Consumption m^3/day

Process : 378 m^3/d
Cooling : 1408 m^3/d
Domestic : 10 m^3/d

Sl. No.	Name of the Products	Process water consumption per unit of product out put	
		During the previous financial year 2022 – 2023	During the current financial year 2023 – 2024
		(1)	(2)
1.	For Steam Generation	3.391 m^3/Hr/MW	3.116 m^3/Hr/MW

Contd..2

ii) Raw Material Consumption

Name of raw materials	Name of Products	Consumption of raw material per unit of product out put	
		During the previous financial year 2022 – 2023	During the current financial year 2023 – 2024
Coal	Power Generation	0.887 T/MW	0.972 T/MW

PART – C

Pollution discharged to environment / unit out put
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (Mass / day)	Concentrations of pollutants in discharges (Mass / Volume)	Percentage of variation from prescribed standards with reasons
a) Water	The average effluent generated in the plant is about 550 m^3/day • RO permeate of about 330 m^3/day is recycled for Cooling tower makeup • RO reject of about 220 m^3/day is used for ilmenite product washing, dust suppression and ash conditioning.	pH: 7.11 – 8.38 TSS: 2– 4 mg/L TDS: 1150– 2412 mg/L Chloride: 411– 1200 mg/L Sulphate: 411 – 1200 mg/L BOD: <2.0 – 10.6 mg/L COD: 32-128 mg/L	-
b) Sewage	4.0 KLD - Treated in the Industrial STP and Treated sewage used for Milk of lime Preparation and meets the standard.	pH: 7.05 – 8.25 TSS: 2 mg/l BOD: 2.48 – 7.55 mg/l	-
c) Air			
Particulate Matter	64.90 kg/d	22.41 mg / m3	-55.18 %
Sulphur Dioxide	334.47 kg/d	116.45 mg / m3	-80.59 %
Oxides of Nitrogen	250.99 kg /d	83.74 mg / m3	-81.39 %

Contd.. 3

PART - D

HAZARDOUS WASTES

As specified under Hazardous & Other Waste (Management & Transboundary Movement) Rules, 2016

Hazardous Wastes	Total Quantity	
	During the previous financial year 2022-2023	During the current financial year 2023-2024
a) From Process – Used Oil	1.196 MT	0.853 MT
b) From Pollution Control Facilities.	Nil	Nil

PART – E

SOLID WASTES

Solid Wastes		Total Quantity (MT)	
		During the previous financial year 2022 - 2023	During the current financial year 2023– 2024
a) From Process Bed Ash Fly Ash		 2317.120 15953.708	 2199.97 12494.35
b) From Pollution Control Facilities			
c) 1) Quantity recycled or re-utilized within the Unit. (Bed Ash)		2317.120	2199.97
2) Sold	Fly Ash	15953.708	12494.35
3) Disposed	Bed Ash	Nil	Nil

PART - F

Please specify the characterizations (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

In Cogen Plant, used oil is generated from Turbine bearing lubrication transferred to CPP and sold to authorized agency. Refer Annexure – 1.

The total ash quantity is maintained less than the consented quantity of 2500T/month.

Contd.. 4

S. No	Type of waste	Characterization	Mode of disposal
1	Hazardous waste Used oil:	Used Oil composition: 1) Cadmium + Chromium + nickel (Nl): 28.64 mg/kg 2) Arsenic : BDL (DL: 0.5 mg/kg) 3) Lead (as PB) : 31.46 mg/kg 4) Polychlorinated biphenyl (PCBs): BDL (DL:1.0 mg/Kg)	Used Oil is collected separately for sale to authorized parties along with Captive Power Plant used oil disposal
2	Solid waste Bed Ash Fly Ash	-	Fly ash is sold to cement units / Brick Manufacturers on daily basis. The Bed Ash generated is used for in-house purpose viz. bund strengthening, road formation inside premises.

PART – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

The boilers are attached with advanced Electrostatic precipitator with three field arrangements for effective containment of suspended particulate matter.

The net effluent generated from the cooling tower bleed off, DM water treatment RO system and mixed bed regenerating are collected in equalization tank, treated in a dedicated effluent treatment plant exclusively provided with RO system. The permeate is recycled for cooling tower makeup and the reject is used for Ilmenite product washing dust suppression, and ash conditioning in such a way that the net effluent generated is fully utilized within the plant.

The secondary water treatment for the effluent generated from the system conserves resource saving of about 980 m^3 / day of river water.

PART - H

Additional measures / investment are proposed for environmental protection including abatement of pollution, prevention of pollution.

- Additional measures are taken for development of green belt by planting tree saplings with systematic and sustained efforts.
- The coal is stored in stacks not more than 5m height in closed storage yards of capacity 10000 MT.

Contd.. 5

- The coal from storage yards are transferred to the plant through closed conveyor systems.

- Manual as well as automatic water sprinkler systems are provided as dust suppression systems.

- The unit has an Online Continuous Emission/Effluent Monitoring System for Core Parameters Viz. SO_2, NOx & PM furnaces for Emission and pH, TSS & Temperature for Effluent parameters and the same is continuously being uploaded to TNPCB & CPCB server.

PART - I

Any other particulars for improving the quality of the environment.

The CSR activities carried out during the period 2023-24 by the management to improve the environment, ensure environmental sustainability and rural developments are:

- As per the request from Dy Director, Health services, Thoothukudi District, donation of "Robonik Prietest Touch Plus Bio Chemistry Analyser" to Public Health Centers in and around Saupuram. 8 villages to be benefitted.
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- Medical aids to the poor people, below poverty, who needs supports.
- Construction of Toilet blocks in Anganvadi in Singhithurai village in Kayalpatnam Municipal limit.
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- Providing sports goods to the youth in and around Sahupuram.
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- Construction of library building for ST community in East Shanmugapuram in Arumuganeri.

Signature:

Name & Address of the person submitting the: Environmental Statement

S.SURESH
VICE PRESIDENT (Manufacturing)
DCW LIMITED
SAHUPURAM PO 628229
THOOTHUKUDI DIST.

On behalf of Name and Address of the Unit :

DCW LIMITED
(COGEN POWER PLANT DIVISION)
SAHUPURAM 628 229
THOOTHUKUDI DIST