JOINT REPORT IN REFERENCE TO HON'BLE NGT ORDER DATED 04.10.2021 IN MATTER OA 60/2021 (WZ)

MATTER RELATED WITH DAHEJ INDUSTRIAL AREA

Jointly Prepared By:

CENTRAL POLLUTION CONTROL BOARD

GUJARAT POLLUTION CONTROL BOARD

NOVEMBER, 2021

Table of Contents

1. BACKGOUND

The Hon'ble NGT matter OA no. 60/2021 (WZ) [Aryavart Foundation v/s Hemani Industries Ltd. & Ors.] is related with wastewater management by the industries and Gujarat Infrastructure Development Corporation (GIDC) in the Dahej industrial area. CPCB and GPCB are respondent no. 3 & 2 in the matter. Hon'ble NGT vide order dated 04.10.2021 directed CPCB and GPCB for joint inspection of Red category industries discharging wastewater in the drainage network maintained by GIDC (Respondent no. 4). The excerpt of the order is provided below:

…"18. The Respondent No. 2 in coordination with the Respondent No. 3, shall cause inspection of industrial units which fall under "Red Category" to find out whether they discharge untreated/partly treated effluents into the STPs maintained by the Respondent No. 4 and if any infractions/violations are noted, shall come out with the solutions as well as the assessment of the environmental compensation, to be paid by them. It is also made clear that depending upon the contents of the said report to be filed by the Respondent Nos. 2 & 3, further action would follow against the Respondent No. 1 as well as the other industrial units, in accordance with law.

19. The Respondent No. 5 as well as the jurisdictional Superintendent of Police, shall provide all necessary assistance to Respondent Nos. 2 & 3 to carry out the inspection of the units which come under "Red Category", in the Industrial Estate maintained by the Respondent No. 4….."

2. APPROACH

In compliance of the order of Hon'ble NGT dated 04.10.2021, CPCB (Regional Directorate Vadodara) and GPCB (Regional Office Bharuch) carried out meeting on 20.10.2021 at CPCB office in Vadodara. The minutes of the meeting is attached as **Annexure I**. In the meeting, the CPCB and GPCB discussed about the matter, overview of the GIDC infrastructure, issues related with wastewater management in the area and number & types of industries in the area. Considering the time and manpower limitation following approach was followed:

1. Three joint teams comprising of members from CPCB and GPCB was constituted to carry out the inspections of Red category industries in the area. Following officials from CPCB and GPCB were part of the joint team:

Central Pollution Control Board, RD Vadodara	**Gujarat Pollution Control Board, RO Bharuch**
Shri Amit R Thakkar, Scientist D	Shri Falgun M. Modi, RO Bharuch
Shri Saket Kumar, Scientist B	Shri B.D. Prasad, DEE
Shri Manoj K Sharma, Scientist B	Shri Niraj Patel, DEE
----	Shri Rajendrasinh Gaekwad, AEE
	Shri Ajay Vasava, AEE

2. The inspection of the industries in the area was carried out in two rounds viz. 25.10.2021 to 28.10.2021 and 16.11.2021 to 18.11.2021.
3. The samples were collected by the joint team in duplicate. The samples were sealed. One set of samples was analysed at GPCB Laboratory and another set was analysed by an E(P)A approved laboratory through GPCB.
4. The field observations and basic information were collected from the industries based on the finalized format during meeting.

The joint team visited 34 industries including CETP Dahej during two rounds of inspections. In addition visit, sampling and monitoring of the drainage network provided by GIDC in the area was also carried out considering the infrastructure categorized as Red Category as per the CCA issued by GPCB to GIDC.

Furthermore, the joint team also carried out meeting with representatives of GIDC Dahej on 16.11.2021 at GIDC office Bharuch and requested for some information regarding the area. The information collected in the matter, observations during inspection of industries & site survey are detailed in the subsequent paragraphs. Analysis results of both the laboratories are mentioned in the report. However, as GPCB is the statutory body, the analysis results of GPCB are considered while assessing the compliance status.

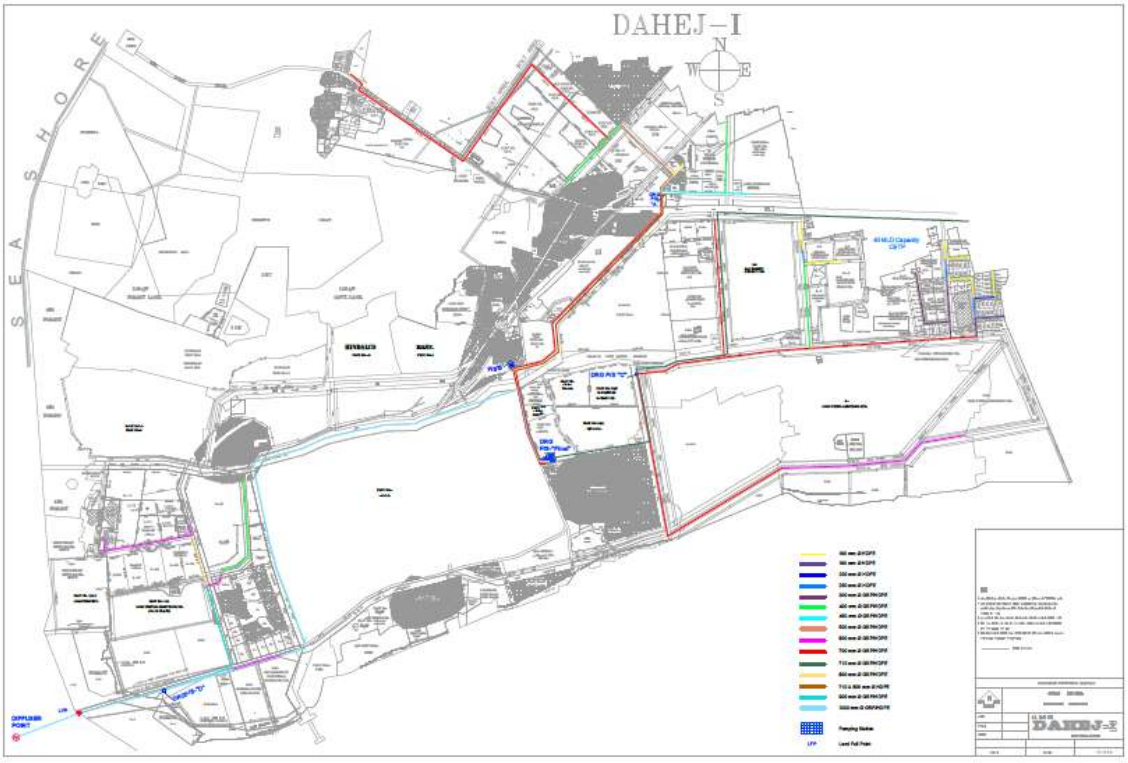
3. INTRODUCTION TO THE AREA

Dahej Industrial Area started in the year 2006-07 is located in Taluka Vagra, District: Bharuch. As per estimates based on the 2011 census, the human population in Vagra Taluka is about 1.24 Lakhs and in Bharuch district is about 16.35 Lakhs.

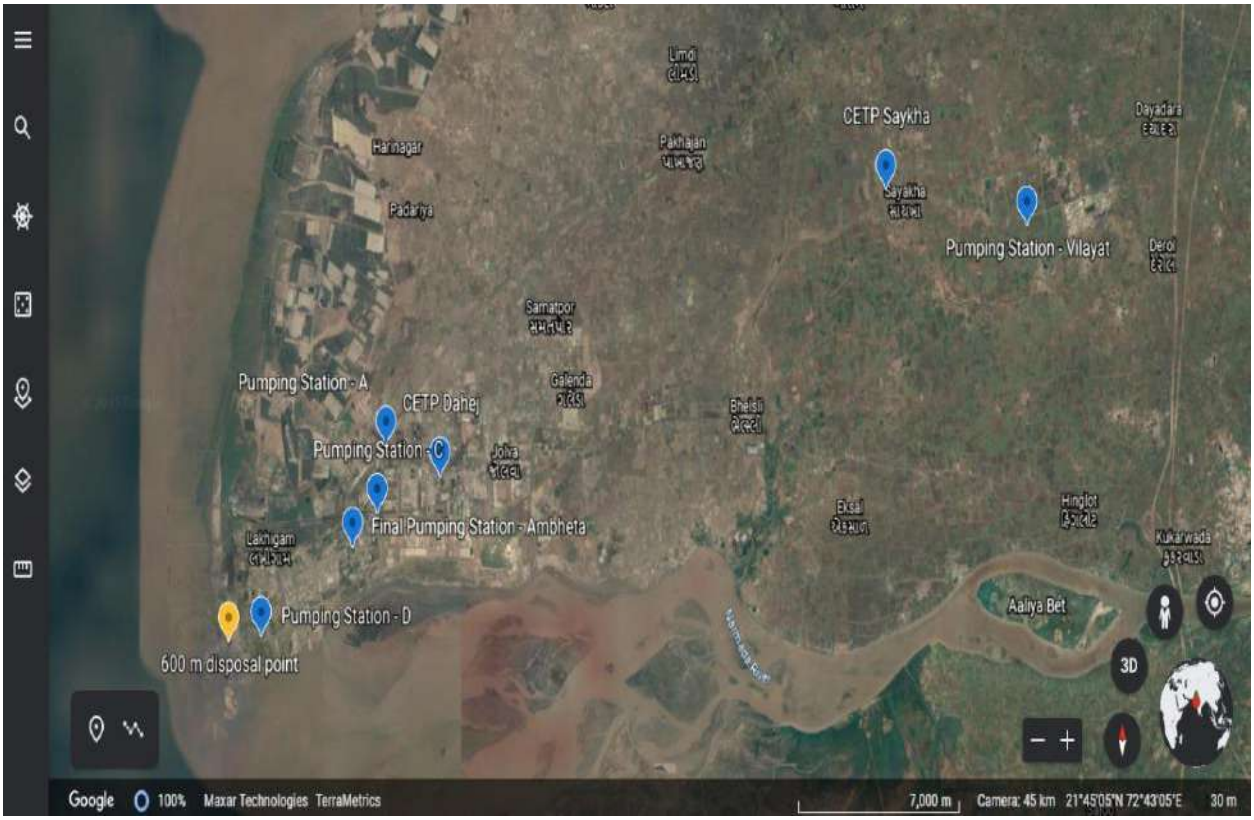
The industrial estate of Dahej known as Gujarat Petroleum, Chemical and Petro-chemical Investment Region (PCPIR) is amongst the 04 PCPIRs notified by Government of India under PCPIR Policy 2007. The PCPIR region has total area of 452.98 sq. km which includes 8.53 sq. km. of reserved forests and is located near Gulf of Khambat. The PCPIR region covers the industrial establishments in the area namely Dahej-I, Dahej-II, Dahej-III, SEZ-I, SEZ-II, Vilayat, Saykha etc. The infrastructure facilities in the Dahej PCPIR region are managed by Gujarat Industrial Development Corporation, Dahej.

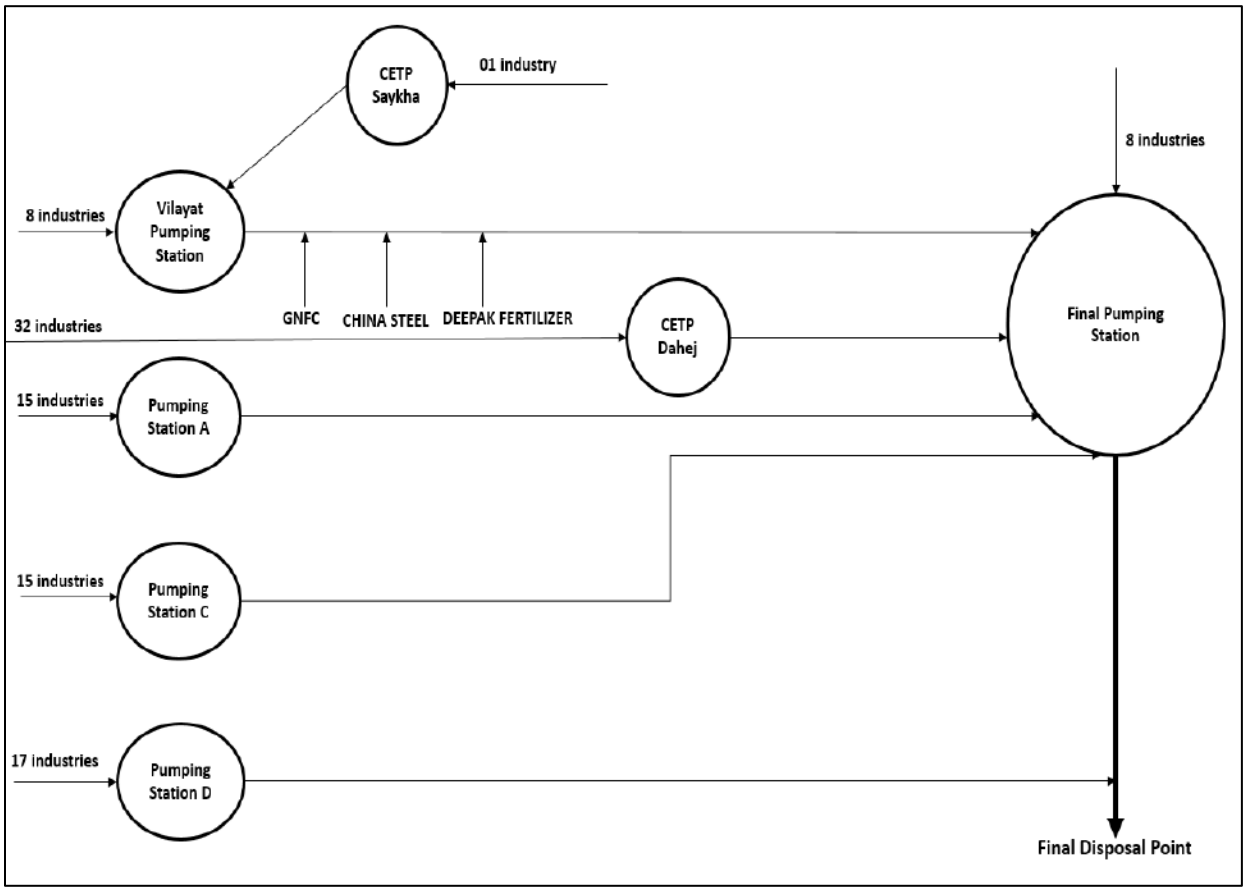
Dahej GIDC has provided fresh water supply network, wastewater pumping and drainage network, roads, storm water drain etc. in the area. Presently the fresh water requirement of the industries in the area is supplied by GIDC through pumping from River Narmada near Bodeli through a piping network of about 134 km. Fresh water requirement in the area is about 55MLD. As informed by GIDC, Desalination plant of 100 MLD is under process to meet the future requirement of the industries in the area. GIDC charges Rs. 43.51 per Kl of fresh water supply to the industries.

GIDC had commissioned 90 MLD (65 MLD for Dahej + 25 MLD for Vilayat Industrial estate) wastewater collection and disposal scheme at Dahej PCPIR in year 2006-07. GIDC Dahej has provided wastewater drainage conveying network for which GPCB has granted CCA to GIDC. GIDC charges Rs. 9.70 per Kl as Drainage Cess from the member industries. The entire drainage system is underground supported by gravity flow to pumping stations. The discharge network pipeline was provided with total length of 52.5 kms, out of that 4.5 Kms of pipeline was in the offshore area underground buried in the inter tidal zone and sea bed in the gulf of Cambay, about 9 kms is in the coastal area and 39 kms in the onshore area. The hydraulic capacity of the drainage network was 90 MLD. The discharge point was provided at a point recommended by NIO i.e. Latitude 21°39'26"N and Longitude 72°29'50"E in the Gulf of Khambhat with the discharge norms stipulated in CCA issued by GPCB. The drainage network is shown in the image below:



There are total 232 Red Category industries in the area as per records of GPCB. The wastewater management and disposal conditions varies from Zero Liquid Discharge, reuse for gardening, reuse in the process, discharge to CETP through tankers/pipelines, discharge to GIDC drainage system, direct discharge to FPS etc. Details of industries which obtained discharge connection from GIDC and connection in the drainage network is detailed below:


CETP Saykha
Pumping Station - Vilayat
Pumping Station - A
CETP Dahej
Pumping Station - C
Final Pumping Station - Ambheta
Pumping Station - D
600 m disposal point
Google
Maxar Technologies TerraMetrics
7,000 m
Camera: 45 km 21°45'05"N 72°43'05"E
30 m


CETP Saykha
01 industry
8 industries
Vilayat Pumping Station
8 industries
GNFC
CHINA STEEL
DEEPAK FERTILIZER
32 industries
CETP Dahej
Final Pumping Station
15 industries
Pumping Station A
15 industries
Pumping Station C
17 industries
Pumping Station D
Final Disposal Point

As shown above final pumping station receives

- Wastewater through Pumping Station A which conveys wastewater from 15 drainage connection (15 industries)
- Wastewater through Pumping Station C which conveys wastewater from 15 drainage connection (15 industries)
- Wastewater through Vilayat Pumping Station which conveys wastewater from 03 drainage connection (08 industries) also receives wastewater directly from 03 industries located at Dahej Area.
- Wastewater through CETP Dahej which conveys wastewater from 32 drainage connection (32 industries)
- Wastewater through direct pipeline from 08 industries at Final Pumping Station.
- Wastewater through Pumping Station D which conveys wastewater from 17 drainage connection (17 industries)

The wastewater from FPS is pumped to Final disposal point into Gulf of Khambhat. Wastewater from pumping station D is meeting the disposal line from FPS to final disposal point through T-joint at SEZ-II area. The pumping station D having 17 drainage connections (17 industries). Thus there are total 99 industries in the area which are discharging wastewater into GIDC drainage network/ GIDC infrastructure.

GIDC carries out monitoring of the GIDC drainage network through third party laboratory M/s Unistar Environment and Research Lab. Pvt. Ltd., Dahej. GPCB also carries monthly monitoring of wastewater from all pumping stations in addition to random inspection of industries in the area which also includes night monitoring. Based on the observations of past monitoring data of wastewater drainage network, observation on night monitoring of industrial discharges, various Show Cause Notices (SCN), Notice of Directions (NOD) and closure directions issued to various industries and GIDC by GPCB, the joint team has carried out inspection of total 34 industries including CETP Dahej in the area during two rounds (Round 01: 25.10.2021 to 27.10.2021, Round 02: 16.11.2021 to 18.11.2021). The joint team also carried out survey of the GIDC area, visited pumping stations, final disposal point and collected grab samples.

The observations of inspection of industries pumping station wise is mentioned in the subsequent paragraphs.

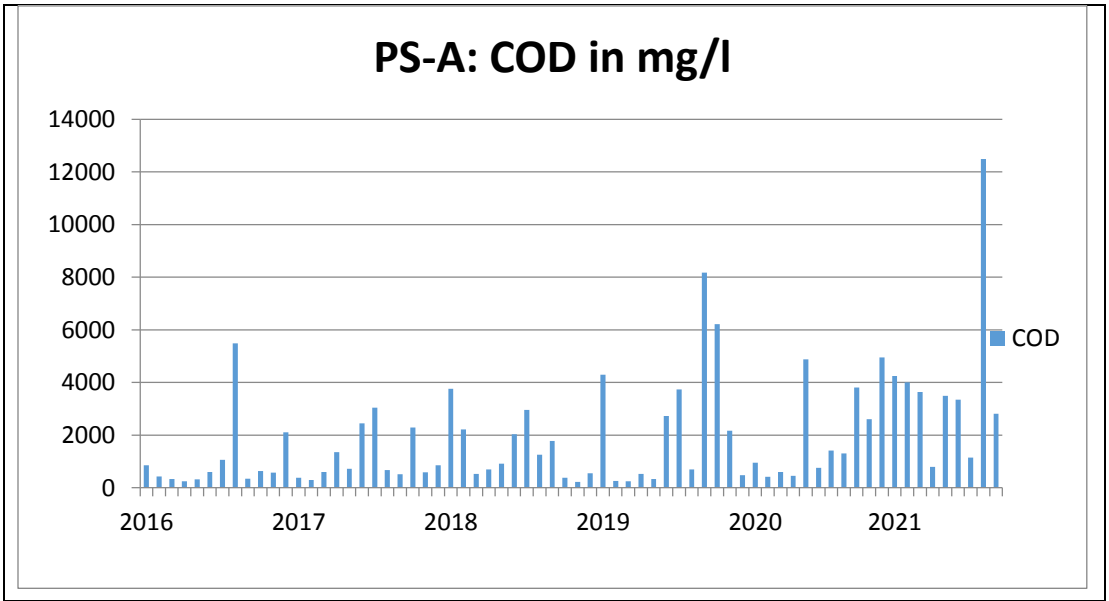
3.1. Observations with respect to Pumping Station A:

The pumping station A has 15 drainage connection covering about 139.3 Hectares of Area in the GIDC. The Booked wastewater discharge quantity from the member industries in the underground drainage network to pumping station A is 6,932 KLD. The pumping station A has

hydraulic design capacity of 13,000 KLD (13 MLD) to pump the wastewater to final pumping station.

Condition of wastewater from Pumping Station A at FPS

It is observed from the past monitoring results of GIDC and GPCB of sample of pumping station A that the COD of wastewater from pumping station A varies from 247 mg/l (04.07.2016) to 12,490 mg/l (06.10.2021). The variation of concentration of COD in last 05 years is shown in the graph (Graph: 1.0).



Graph 1.0: Variation in concentration of COD in last 05 years at Pumping Station A

From the graph plotted for concentration of COD observed during last 05 years it can be seen that regular non-compliance with respect to discharge standard observed since 2016. The joint team has also collected sample of wastewater from pumping station A on 26.10.2021. The analysis results are tabulated below:

Parameters	**Discharge norms as per CCA**	**Analysis Results by GPCB**	**Analysis Results by third party laboratory**
pH	6 to 9	**5.29**	**5.32**
Colour	--	**10,000**	>500
Total Suspended Solids	100	**384**	**400**
Fluorides	15	1.3	BDL
Sulphides	5	**28.8**	**>50**
Ammonical Nitrogen	50	**143.36**	**114**
Sulphate	--	1108	1764
Total Kjeldahl Nitrogen	50	**170.24**	**120**
Nitrate Nitrogen	50	**113.19**	2.4
BOD (3 days at 27 C)	100	**1985**	**1650**
COD	250	**9023**	**7207**
Chlorides	--	15625	19783
Phenolic Compounds	5	**24.3**	**88**

Note: All parameters are in mg/l except pH and Colour in Pt/Co scale

The analysis results shows that concentration of TSS, COD, BOD, Ammonical Nitrogen, Nitrate Nitrogen, TKN, Phenol and Sulphide and, pH exceeds the discharge standards as mentioned in the CCA. The exceedance factor shows gross non-compliance.

The member industries in the area discharging into pumping station A were examined for the present status of manufacturing, operational condition, type/ category etc. it is found that presently out of 15 member industries discharging wastewater through pumping station A, 02 industries are closed, 10 industries are manufacturing different organic chemicals including pesticides and remaining 03 are producing other chemicals. The joint teams have carried out inspection of 07 industries (which includes industry of Respondent 01 in the matter) discharging into “pumping station A” considering past records of GPCB inspection & directions, newly established industries and probability of generating wastewater having high organic pollutant.

Inspection reports of the industries are attached from Annexure A1 to A7. Brief findings industry wise and its compliance status are tabulated below:

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
1	M/s Meghmani Organics Ltd., Plot No. CH-1, CH-2/A, D-2/CH 10/A, GIDC Dahej	The industry is non-complying to wastewater discharge standards and violating the CCA conditions with very high concentration of organic contamination such as COD of 3964 mg/l and Phenol of 312 mg/l. This indicates industry is discharging phenol based wastewater without treatment into GIDC drainage. Furthermore, dilution of treated wastewater from ETP through fresh raw water through hidden pipeline also shows malpractices and noncompliance by the industry. About 800 MT of solid hazardous waste and about 200 MT of liquid hazardous waste/chemical is stored in haphazard way inside the premises of the industry leading to formation of ponding of contaminated wastewater with high concentration of analyzed parameters like Phenol etc. over open ground behind ETP near hazardous waste storage area. Such haphazard storage of hazardous waste has potential to contaminate soil and groundwater in and around the premises of the industry. The industry has previously been issued closure directions on multiple occasions by GPCB in reference to wastewater management. This shows that the industry is a routine violator of environmental norms. The industry need to improve effluent treatment efficacy and hazardous waste storage and handling measures. The industry need to immediately dispose	Non Complying	A-1

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		of solid and liquid hazardous waste stored inside the premises and provide adequate hazardous waste storage facility. The industry need to operate phenol recovery plant effectively to reduce phenol concentration in its treated wastewater.		
2	M/s. Bharat Rasayan Ltd.(Old Name:Siris Crop Science Limited), 42/4, GIDC, DAHEJ, Amod road, Tal: Vagra, Dahej - 392130	The industry found meeting the discharge standards except for TSS which slightly exceeds from the sample of wastewater collected from final outlet. However, high concentration of COD :19065 mg/l, Phenol:105.5 mg/l, BOD: 9360 mg/l, Ammonical Nitrogen: 742 mg/l was found in main storm water drain. Similarly high concentration of measured parameters and high alkaline wastewater was observed in another drain inside the premises. The storm water drains should be dry except during rainfall and no contaminated runoff is even allowed to discharge during rains. As no permanent arrangement is provided for the pumping of contaminated wastewater from storm water drain to ETP, the industry need to take immediate action to remove contaminated wastewater from main storm water drains, tank form area and treat it as per the requirement. The overall mismanagement of acidic and alkaline material/wastewater, leakages of phenolic material on the approach road having slope towards the storm water drain, highly contaminated wastewater in the storm water drain shows gross negligence towards the handling and management of	Non-complying	A-2

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		chemicals. Such condition of contamination in the storm water drain has potential of contaminated runoff from the premises. The installed capacity of ETP is less than the consented wastewater generation. The industry need to provide ETP of adequate capacity as per the total wastewater generation mentioned in the CCA or amend CCA as per actual generation. The OCEMS installed found defunct during visit. The industry found storing HW in open area, the HW storage shed provided was not having proper leachate collection and transfer to ETP facility. In total storage of 98.529 MT of various HW including drums were found stored outside the shed at various locations. Looking to the site conditions of high COD and Phenolic wastewater into the main storm water drains and mismanagement of HW has potential of soil and ground water contamination in and around the premises. Mishandling of High COD wastewater, leakages, storage of high organic residue from CMAC plant in open etc. also resulted for VOCs which was sensed during visit. The industry also not compliance with CCA condition to make storage facilities to store the effluent for atleast 48 hours. The industry need to take adequate measures for compliance of observations and CCA conditions.		
3	M/s. Hemani Industries Ltd, CH-5,E-362	The industry is discharging wastewater to GIDC drain without complying with CCA discharge norms. Foaming and	Non Complying	A-3

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
	GIDC Dahej, Tal: Vagra, Bharuch	scum deposition at the top of clarifier was observed The industry need to operate ETP properly to meet the discharge standards. The installed capacity of incinerator is less than the permitted quantity. The industry need to provide adequate capacity of incinerator and operate it efficiently. The industry found storing HW in open area, the HW storage shed provided was not having proper leachate collection and transfer to ETP facility. Present stock of about 2500 MT of MEE salt, 200 MT of ETP sludge stored for disposal of CHWTSDF. In addition drums containing incinerable HW (more than 500 drums) found stored in open area inside the premises. Physical conditions of some of the drums were dilapidated/corroded. In total about 100 MT of hazardous waste were found stored haphazardly at various locations inside the premises of the industry. Mishandling of High COD wastewater, leakages, storage of high organic residue from CMAC plant in open etc. has potential to contaminate soil and groundwater in and around the premises of the industry. Moreover, it has also resulted in release of VOCs observed during visit. Records for the generation of high COD wastewater was not maintained by the unit. The industry is not complying with CCA condition to provide guard pond to store the wastewater for atleast 48 hours. The industry need to take adequate steps to comply with the CCA conditions, provide proper storage facility of HW and dispose the presently		

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		stored HW as per the CCA conditions.		
4	M/s Insecticides India Ltd., Plot no. CH-21, GIDC Dahej, Tal: Vagra, Bharuch	The industry is discharging wastewater to GIDC drain without complying with CCA discharge norms. The industry need to take adequate steps to operate ETP to meet the discharge standard. The industry found stored drums containing various hazardous wastes, the drums were not labeled and found leakage, spillage of hazardous waste due to leakages of drums etc. shows violation towards the overall environmental management. The HW storage shed provided was not having proper leachate collection and transfer to ETP facility. More than 800 drums (200lt capacity each) about 160MT containing incinerable HW/ products/In-process material found stored in open area inside the premises. Such haphazard storage and handling of hazardous waste has potential for contamination of soil and groundwater in and around the premises of the industry. The industry is not compliance with CCA condition to make storage facilities to store the effluent for atleast 48 hours. The industry need to take adequate steps to comply with the CCA conditions, provide proper storage facility of HW. The industry need to dispose the presently stored HW as per the CCA conditions.	Non Complying	A-4
5	M/s Meghmani Limited Liability Partnership, D-2/CH-3, GIDC, DAHEJ,	The industry in non-complying to CCA discharge standards for pH, OCEMS connectivity, conditions related with management of hazardous waste such as dilute acetic acid. The industry is selling dilute acetic acid categorized under Rule 9 of Hazardous waste Rules	Non-complying	A-5

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
	TAL: VAGRA, DIST: BHARUCH	without following proper manifest system and to unauthorized end users. The industry has not connected OCEMS at ETP outlet to CPCB/GPCB server. Further, the industry was found discharging contaminated water/wastewater in GIDC drain through a ghost pipeline during visit by GPCB team. Therefore, the industry need to improve ETP sludge storage facility and improve handling of dilute acetic acid as per rules and, provide connectivity of OCEMS to CPCB/GPCB server. The industry also need to comply to CCA discharge conditions, provide arrangement for treatment of contaminated wastewater in storm water drains inside the industry and stop any discharges of contaminated wastewater into GIDC drain through ghost connections.		
6	M/s Meghmani Novotech Pvt. Ltd. (Old Name: M/s Meghmani Speciality Chemicals LLP) Plot No: CH-22, GIDC Estate-Dahej, Ta: Vagra, Dist: Bharuch.	During the visit, large quantity of various types of hazardous waste like process distillation residue, off specification/reject material, ETP sludge was found stored on open land without impervious flooring in haphazard manner without any labelling at various locations within the industry premises. Many drums containing process distillation residue, off-specification/reject material were found leaking and leaking waste contaminating the surrounding soil. Also fugitive emissions from many such drums were found. Such mismanagement of hazardous waste has potential to contaminate soil and groundwater within the industrial premises. As reported by the industry	Non Complying	A-6

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		about 560 MT hazardous waste were stored within the premises. Industry has not provided proper and adequate hazardous waste storage area and also there is no leachate collection system provided by the industry. Therefore, industry needs to provide proper hazardous waste storage shed area with impervious flooring & other adequate safety measures to avoid contamination of the environment. Industry needs to dispose-off hazardous waste to Common Hazardous Waste Incineration/ disposal facility on priority basis. Industry is discharging waste water to GIDC drain without meeting prescribed discharge norms. Therefore, Industry needs to upgrade the treatment system to meet the prescribed discharge norms. Industry has installed online analyzers at the final treated waste water discharge line. However the analyzer provided by the industry is not connected with the server of GPCB/ CPCB. Industry needs to provide connectivity of the online analyzer with the server of GPCB/ CPCB. Industry should display the hazardous waste handled in the industry and other relevant information at the entrance gate of the industry.		
7	M/s Tagros Chemicals India Limited Plot No. 43/1, GIDC Estate	Industry discharging waste water without meeting the discharge norms prescribed in the CCA by GPCB. During the visit deposition of oily sludge observed in the equalization and	Non Complying	A-7

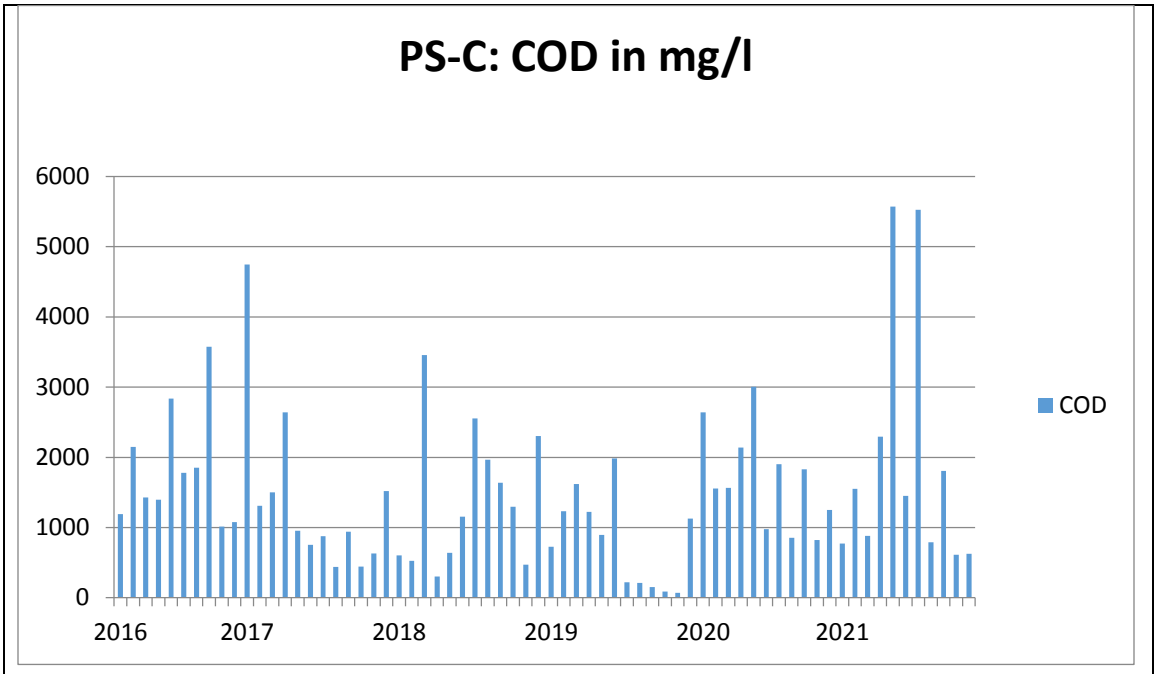
S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
	Dahej , Tal. Vagra, Dist. Bharuch.	neutralization tank of ETP provided for the treatment of high COD/TDS process waste water. Leakages of high COD/TDS waste water were observed in MEE section. Industry needs to upgrade waste water treatment system to meet the discharge norms prescribed in the CCA. Industry needs to control the leakages of high COD/TDS waste water in MEE section and industry should remove the oily sludge deposited in the equalization tank and in neutralization tank of the high COD/TDS ETP. Reportedly 950 MT hazardous waste of various type were stored in the hazardous waste storage shed. The hazardous waste storage shed is inadequate as some process waste drums were kept outside the shed on concrete flooring. Industry needs to provide hazardous waste storage shed of adequate capacity.		

3.2. Observations with respect to Pumping Station C:

The pumping station C has 15 drainage connection covering about 97.02 Hectares of Area in the GIDC. The Booked wastewater discharge quantity from the member industries in the drainage network of pumping station C is 4,007.24 KLD. The pumping station C has hydraulic design capacity of 5,000 KLD (5 MLD). Presently the pumping station C is not in operation and GIDC has provided temporary station namely Pumping Station E. Wastewater from member industries through gravity (underground drainage) reaches to the chamber of pumping station E from where the wastewater is pumped to Final Pumping Station along with the CETP Dahej discharge line.

It is observed from the past monitoring results of GIDC and GPCB of sample of pumping station C that the COD of wastewater from pumping station C varies from 70 mg/l (07.11.2019) to

5,571 mg/l (05.05.2021). The variation of concentration of COD in last 05 years is shown in the graph (Graph: 2.0).



Graph 2.0: Variation in concentration of COD in last 05 years at Pumping Station C

From the graph plotted for concentration of COD observed during last 05 years it can be seen that regular non-compliance with respect to discharge standard observed since 2016. The joint team has also collected sample of wastewater from pumping station E on 17.11.2021. The analysis results are tabulated below:

Parameters	**Discharge norms as per CCA**	**Analysis Results by GPCB**	**Analysis Results by third party laboratory**
pH	6 to 9	**5.01**	**5**
Colour	--	7500	>500
Total Suspended Solids	100	**712**	**820**
Fluorides	15	10.3	BDL
Sulphides	5	BDL	**>50**
Ammonical Nitrogen	50	**77.28**	**81**
Sulphate	--	4492	3385
Total Kjeldahl Nitrogen	50	**117.6**	93
Nitrate Nitrogen	50	36.9	24.6
BOD (3 days at 27 C)	100	**952**	760
COD	250	**4115**	**3160**

Chlorides	--	1174	1661
Phenolic Compounds	5	2.06	1.95

Note: All parameters are in mg/l except pH and Colour in Pt/Co scale

The analysis results shows that concentration of TSS, COD, BOD, Ammonical Nitrogen, TKN and pH exceeds the discharge standards as mentioned in the CCA. The exceedance factor shows gross non-compliance.

In addition, accumulation of wastewater on open plot in front of M/s Torrent power was observed during visit. The joint team visited the area to understand the reason for such accumulation. It was found that there was leakage of wastewater from the T-Junction of pressure line from pumping station E to FPS (joining the discharge line from CETP to FPS). This location is about 1 Km from pumping station E. pH of water was checked and found highly acidic. The joint team contacted GIDC official over phone, due to unavailability of GIDC official at Dahej, GIDC official send the maintenance contractor. He was unable to answer the probable source of such acidic discharge as entire drainage network is underground. The joint team along with the contractor also visited the discharge points and no traces of acidic discharge were found. Thus it clearly indicates the illegal connection into the underground drainage network and malpractice of acidic wastewater discharge from one or other member industry in the area. The joint team collected grab sample from the leakage and also from the discharge end of the drainage line at FPS.

The analysis results are given below:

Parameters	**Discharge norms as per CCA**	**GPCB Analysis Results of leakage of PS-C**	**Analysis Results by third party laboratory of leakage of PS-C**	**GPCB Analysis Results of PS-C discharge into FPS**	**Analysis Results by third party laboratory of PS-C discharge into FPS**
pH	6 to 9	**1.23**	**1.3**	2.29	2.33
Colour	--	1250	>500	300	>500
Total Suspended Solids	100	**228**	**180**	**114**	**240**
Fluorides	15	12.9	3.9	2.9	BDL
Sulphides	5	1.2	4	9.6	27
Ammonical Nitrogen	50	**442.4**	**256**	161.84	170
Sulphate	--	8542	12053	1333	1324
Total Kjeldahl Nitrogen	50	**560**	**290**	**201.6**	182
Nitrate Nitrogen	50	44.32	**98**	19.12	39
BOD (3 days at 27 C)	100	**782**	**720**	**304**	250
COD	250	**3596**	**3600**	**1248**	**1104**
Chlorides	--	2817	2970	2910	6393
Phenolic Compounds	5	0.99	1.32	0.71	0.89

Note: All parameters are in mg/l except pH and Colour in Pt/Co scale

The GPCB analysis results of leakage of PS-C shows that the wastewater was highly acidic and having high contamination. The concentration of TSS, COD, BOD, Ammonical Nitrogen, TKN and pH even exceeds the discharge standards as mentioned in the CCA. Variation in concentration of COD and Chloride & Ammonical Nitrogen from the sample collected from pumping station C and from the leakages indicates that the concentration of COD do not vary much in both the samples. However, concentration of chloride and ammonical nitrogen increases significantly. The exceedance of concentration of chloride and ammonical nitrogen may be due to illegal discharge of waste water containing Hydro chloric acid and ammonical compounds.

The GPCB analysis results of PS-C discharge to Final Pumping Station (FPS) shows that the wastewater was highly acidic and having high contamination. The concentration of TSS, BOD, COD and pH exceeds the discharge standards as mentioned in the CCA. Variation in measured values of sample collected from the leakage point to that from the FPS may have resulted due to dilution from CETP Dahej discharge.

The member industries in the area were examined for the present status of manufacturing, operational condition, type/ category etc. it is found that presently out of 15 member industries discharging wastewater through pumping station C (or Pumping Station E), 01 industry is closed, 04 industries are manufacturing different organic chemicals including pesticides, 02 industries are manufacturing pharmaceutical products, 04 industries are producing dyes & dyes intermediates and remaining 04 are producing other chemicals. The joint teams have carried out inspection of 08 industries (including pesticides, organic, dyes & dyes intermediates, pharma, etc.) considering past records of GPCB inspection & directions and probability of generating highly polluted wastewater.

Inspection reports of the industries are attached from Annexure B1 to B8. Brief findings industry wise and its compliance status are tabulated below:

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
1	M/s Meghmani Industries Ltd., (Old name: Meghmani Speciality Chemicals Ltd.) (12286), Plot No. Z-6, SEZ, Dahej, Tal. Vagra & Dist.: Bharuch- 392130	The industry is non-complying to wastewater discharge standards and violating the CCA conditions. About 1000 MT of hazardous waste is stored in inadequate storage facility inside the premises of industry which led to contaminated wastewater runoff to storm water drains and ponding over open ground. Contaminated water from storm water drains flowed into GIDC storm water drain. It is worth to mention that storm water drains are meant to carry only rainwater during heavy rainfall. The GIDC storm water drains ultimately discharge into estuarine zone of River Narmada. Moreover, formation of contaminated wastewater ponding over open ground due to haphazard way of	Non Complying	B-1

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		handling hazardous wastes in the premises of the industry has potential to contaminate soil and groundwater in and around the premises of the industry. The industry has previously been issued closure directions on multiple occasions by GPCB in reference to wastewater management. This shows that the industry is a routine violator of environmental norms. The industry need to improve effluent treatment efficacy and hazardous waste storage and handling measures. The industry need to provide gate valves to stop discharge of contaminated water in GIDC storm water drains and provide appropriate facility for pumping and treating contaminated water in industry's storm water drains.		
2	M/s Sun Pharmaceuticals Pvt. Ltd., Plot No. Z-15, SEZ, Dahej, Tal. Vagra & Dist.: Bharuch- 392130	The industry is discharging wastewater to GIDC drainage network without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP. Further, the hazardous waste handling at the industry is poor. About 50 MT of hazardous waste was found stored in open land such as internal roads etc. and leachate seepages from the wastes flowing to open ground and storm water drains has potential to contaminate soil and ground water in	Non Complying	B-2

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		around the premises of the industry. The industry need to increase capacity of its existing hazardous storage facility or provide new facility for safe storage of hazardous waste inside the premises.		
3	M/s Aries Color Chem Pvt Ltd, PLOT NO Z/29 ,Z/30,DAHEJ SEZ PART I, Dahej, Tal. Vagra & Dist.: Bharuch-392130	The industry is discharging wastewater to GIDC drains without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP and for MEE condensate reused in the process. Connectivity of OCEMS to GPCB/CPCB server need to be provided by the industry. The hazardous waste storage facility provided by the industry is without leachate collection and pumping facility to ETP for treatment. Therefore, the industry needs to provide adequate hazardous waste storage facility.	Non Complying	B-3
4	M/s Accent Microcell Pvt. Ltd. PLOT NO Z/59 ,Z/63,Z/64,DAHEJ SEZ PART I, Dahej, Tal. Vagra & Dist.: Bharuch-392130	Though the industry is discharging wastewater meeting the GPCB discharge standards, however the industry has provided ETP of treatment capacity (reportedly 250 KLD) lesser than the wastewater generation and discharge permission as per CCA (790 KLD). Therefore, the industry is considered as non-complying with the CCA condition. Moreover, the industry was issued multiple closure directions with	Non-complying	B-4

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		respect to wastewater management in past by GPCB. The industry need to re-examine the quantity of wastewater generation to augment the ETP with adequate capacity. Hazardous waste was found stored on uncovered area for drying without leachate collection and treatment facility. The industry also needs to improve facility for intermediate storage and handling of hazardous waste by providing covered shed with leachate collection.		
5	M/s Indofil Industries Ltd. Plot No. Z-8, SEZ-1, Dahej Tal. Vagra District Bharuch.	During the visit ETP was not operational due to breakdown in chlorination tank and in Activate Carbon Filter (ACF). Industry needs to put more efforts in operation of all the ETP units in proper way so that ETP may be functional at all the time. During the visit, industry has stored about 616 MT ETP sludge in temporary sludge storage shed having concrete flooring at various locations near the ETP area. Industry has not provided proper leachate collection facility with the sludge storage sheds. Therefore, Industry needs to provide adequate ETP sludge storage shed with impervious flooring and proper leachate collection facility to avoid the seepages of leachate. Industry needs to dispose-off this large quantity of stored sludge in the ETP area.	Complying	B-5
6	M/s Meghmani Organics Limited	Industry discharging the waste water without meeting discharge norms as	Non Complying	B-6

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
	(Unit-8) Plot No. Z-31, Z-32 Dahej SEZ Part- 1, Tal. Vagra, Dist. Bharuch.	prescribed in CCA. The industry is not operating ETP in adequately as during the visit all the units of ETP were not found in operation. Therefore, industry needs to improve operation and maintenance of ETP or upgrade the same in order to meet the discharge norms. During the visit about 400 MT of hazardous waste (Gypsum and ETP sludge) was found stored in haphazard way on open land without impervious flooring at various locations in ETP area. Such haphazard storage and handling of hazardous waste has potential to contaminate the soil and groundwater in and around the premises of the industry. Industry needs to provide proper ETP and gypsum sludge storage shed with leachate collection facility to avoid seepages of leachate in open area. Industry needs to dispose-off all stored huge quantity of ETP sludge, Gypsum sludge and MEE salt on priority basis. Industry should provide proper storage tank of adequate capacity for the MEE feed waste water so that incase of any breakdown in MEE, the MEE feed waste water can be stored safely. During the visit flow meter and online analysers were found nonfunctional. Hence the industry should provide operational flowmeter and online analyzers at the final discharge line. Also, the industry need to maintain proper record of ETP operation, hazardous waste management in the proper logbook.		

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
7	M/s Shiva Pharmachem Ltd. Plot No. Z-88,Z-88/4 Dahej SEZ Part- 1, GIDC Dahej 392130, Tal. Vagra, Dist. Bharuch.	Industry was found discharging waste water into GIDC drainage system during shutdown period of drainage network by GIDC. Sample was collected from the the final discharge point. Analysis of sample reveals that the sample collected from final discharge point exceeds the discharge standard prescribed by GPCB for the parameters COD. Industry needs to upgrade treatment system so that industry may achieve the discharge standard norms prescribed by GPCB. During the visit in the industrial premises it is observed that in hazardous waste storage shed the proper leachate collection facility is not provided. However, industry has provided concrete and impervious flooring in hazardous waste storage shed. Therefore, industry Needs to provide proper leachate collection facility in the hazardous waste storage shed.	Non-Complying	B-7
8	M/s Meghmani LLP (UNIT-II) Plot No: Z-34, Dahej SEZ, Ta: Vagra, Dist: Bharuch – 392130.	Industry is discharging waste water into the GIDC drainage system without meeting discharge norms prescribed by the GPCB. Therefore, industry needs to upgrade ETP to meet the discharge norms. During the visit, Reportedly, 200 MT of ETP sludge was stored in the hazardous waste storage area having concrete flooring in industry premises. Industry has not provided sludge storage shed of adequate capacity and proper leachate collection facility is not	Non Complying	B-8

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		provided in the storage shed. Industry needs dispose-off the stored waste to CHWTSDF on priority basis. The industry should provide covered shed of adequate capacity with leachate collection facility. Industry has installed online analyzers at the line of final discharge point. However, connectivity is not provided with the server of GPCB and CPCB. Industry should provide connectivity of online TOC analyzer with the server of GPCB and CPCB. Industry should update the information related with hazardous waste handling and other relevant information on the display board at the entrance gate of the industry.		

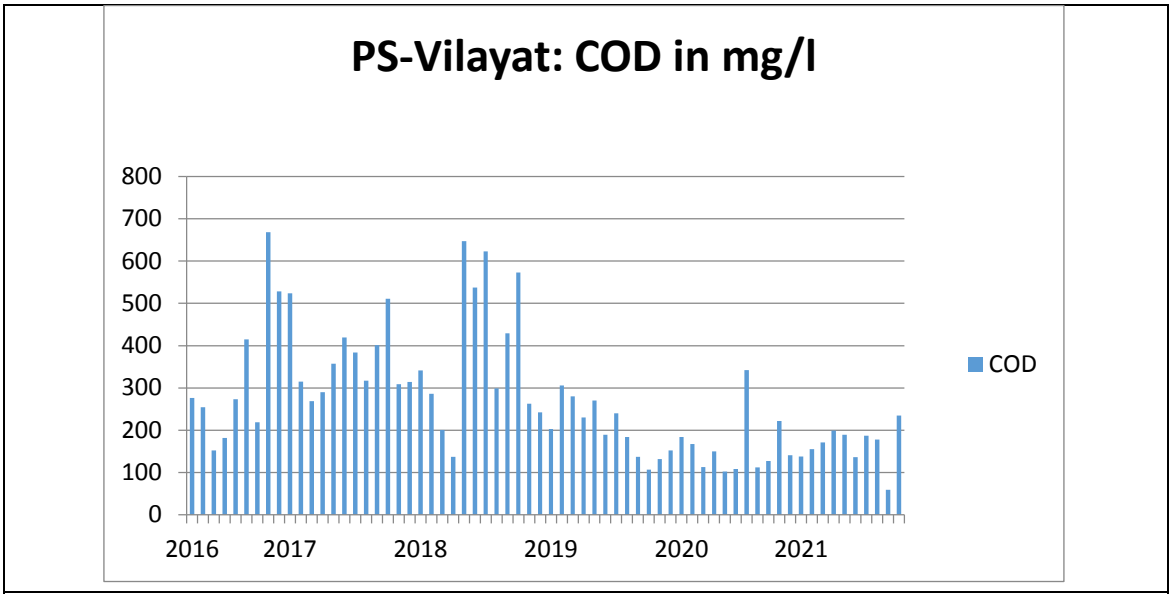
3.3. Observations with respect to Vilayat Pumping Station:

Vilayat pumping station has 03 drainage connections (comprising of discharge from 08 industries). The drainage network from Vilayat Pumping station to FPS passes through GIDC Saykha. Presently GIDC has not provided separate drainage network for discharging of wastewater from Saykha GIDC. It is gathered that wastewater from 01 industry located at GIDC Saykha which discharges the wastewater into the Saykha CETP (the CETP is presently not operational and CCA is still not granted by GPCB) is connected to the drainage network from Vilayat Pumping station to FPS.

Coverage area of Vilayat Pumping station is about 376.84 Hectares. The Booked wastewater discharge quantity from the member industries in the underground drainage network of Vilayat pumping station is 13705 KLD. The Vilayat pumping station has hydraulic design capacity of 25,000 KLD (25 MLD). Wastewater from member industries through gravity (underground drainage) reaches to Vilayat pumping station from where the wastewater is pumped to FPS at Ambetha, Dahej.

It is observed from the past monitoring results of GPCB of sample of Vilayat Pumping station that the COD of wastewater from vilayat pumping station varies from 59 mg/l (02.09.2021) to

668 mg/l (08.11.2016). The variation of concentration of COD in last 05 years is shown in the graph (Graph: 3.0).



Graph 3.0: Variation in concentration of COD in last 05 years at Vilayat Pumping Station

From the graph plotted for concentration of COD observed during last 05 years, some instances of non-compliance can be seen with respect to discharge standard observed since 2016. However, less contaminated discharge as compared to the gross non-compliance of pumping station A and C (Pumping station E) was observed.

The member industries in the area were examine for the present status of manufacturing, operational condition, type/ category etc. it is found that presently out of 08 member industries discharging wastewater having 03 discharge connection. The joint teams have carried out inspection of 03 industries considering comparatively less polluted wastewater in Vilayat pumping station as compared to Pumping Station A and C.

Inspection reports of the industries are attached as Annexure C1 to C3. Brief findings of the industries and its compliance status are tabulated below:

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
1	Grasim Cellulosic (A Unit Of Grasim Ind. Ltd), Plot No.1, GIDC Vilayat,	Industry is discharging the waste water almost meeting the discharge norms prescribed in the CCA as per GPCB analysis results. Industry has not provided	Complying	C-1

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
	Tal: Vagra, Dist: Bharuch	proper leachate collection facility in the sludge storage area. Industry should provide proper/adequate leachate collection facility in the sludge storage area. Industry needs to dispose-off ETP sludge/gypsum sludge periodically to avoid accumulation of large quantity of ETP sludge.		
2	Grasim Industries Ltd- Chemical Division (Chlor Alkali), Plot No.1, GIDC Vilayat, Tal: Vagra, Bharuch	The industry meeting the discharge norms prescribed by the GPCB. Huge quantity (6000 MT) of process Sludge (mainly Phospho Gypsum Sludge & Brine Sludge) was found stored in the specified Storage area having concrete flooring within the plant premises. However, storage area capacity seems to be inadequate. Unit has not provided proper leachate collection system with the sludge storage area. The industry needs to provide adequate sludge storage area with proper leachate collection facility and needs to be covered entire sludge storage area.	Complying	C-2
3	Grasim Industries Ltd (Chemical Division- Epoxy), Plot No. 1 GIDC Vilayat, Tal: Vagra, Bharuch	As per GPCB analysis results, the industry is discharging wastewater meeting the discharge norms prescribed in the CCA. The hazardous waste management and overall housekeeping was found satisfactory.	Complying	C-3

The joint team also visited 01 industry located in the Saykha GIDC considering the discharge from the industry into CETP Saykha and discharge from the CETP Saykha into the drainage network from Vilayat Pumping Station to FPS.

Inspection report of the industry is attached as Annexure D1. Brief findings of the industry and its compliance status are tabulated below:

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
1	M/s Hemani Crop Care Private Limited, Plot No. 73-74, GIDC Saykha, Tal. Vagra & Dist.: Bharuch- 392130	The industry is non-complying to the CCA conditions. The industry has not provided OCEMS connected to GPCB/CPCB server. The toxic fumes from VTFD condensate has potential to damage health and safety of human population, flora and fauna in and around the premises of the industry. About 40 MT of hazardous waste stored haphazardly in the premises of the industry spreading in form of dust over open ground, roads etc. has potential to contaminate soil and groundwater in and around the premises of the industry. The industry need to improve effluent treatment efficacy and hazardous waste storage and handling measures. The industry need to provide stripper and MEE system before VTFD and provide closed tanks for VTFD condensate. Digital Flowmeter at inlet of ETP and VTFD need to be provided along with connectivity of OCEMS to CPCB/GPCB server.	Non Complying	D-1

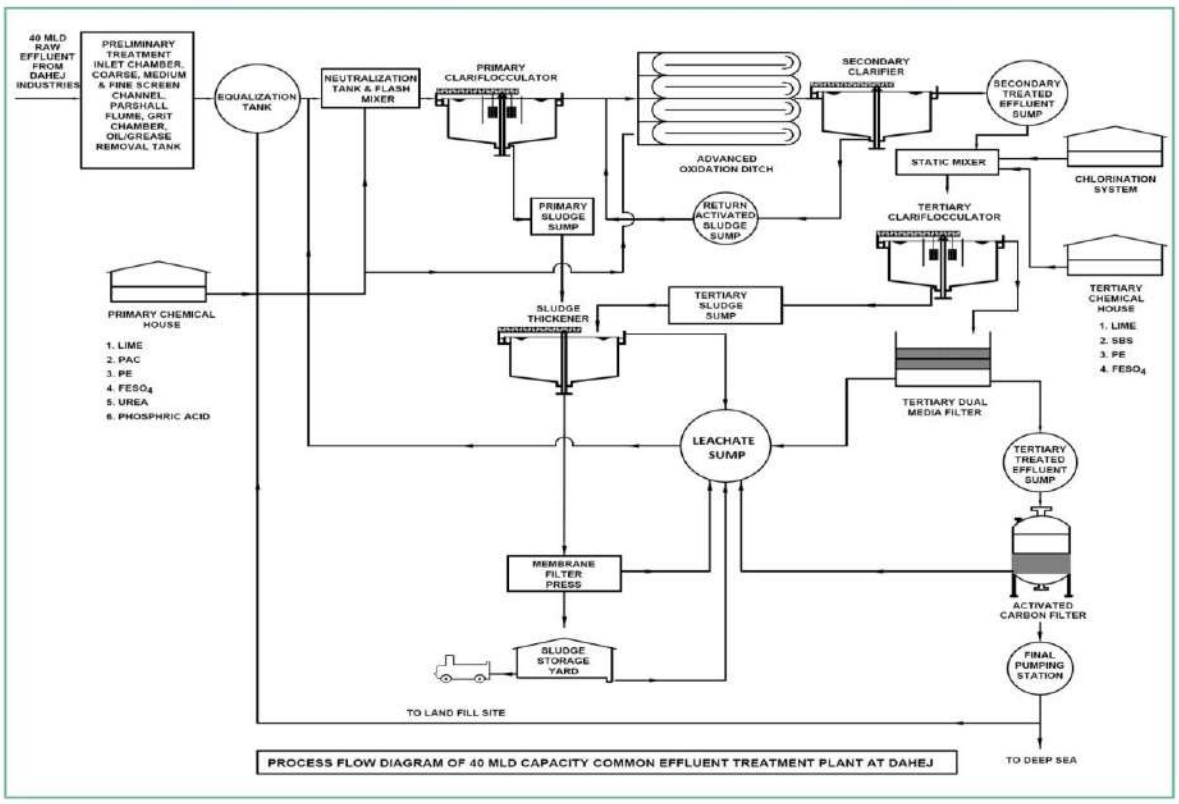
3.4. Observations with respect to CETP Dahej:

The Common Effluent Treatment Plant (CETP) Dahej has installed capacity 40 MLD. The total area of CETP is 549732 Sqm. The project got finance of about 50 Cr. by industries commissionerate and GIDC has invested about 197.72 Cr. in the CETP. The CETP has obtained

Environmental clearance and has obtained CTE from GPCB on dated 11.12.2017. The CTE was amended on 19.07.2018, which is valid up to 27.06.2024. The CETP has obtained CCA from GPCB via order no: AWH-107883 which is valid up to 14.01.2025. The CETP is commissioned on 15.05.2017.

This CETP consists of following treatment units: Inlet chamber (1 no),→ Screen chamber(2Nos) →Grit Chamber(2 Nos) → Parshal Flume(1 No) → Oil & Grease Tank(2 No) → Equalization Tank(2 Nos) → Neutralization Tank(12 Nos) → Flash Mixer (4 Nos) → Primary Clariflocculator(2Nos) → Oxidation Ditch(4 Nos) → Secondary Clarifier(4 Nos) → Secondary Treated Sump(1Nos) → Chlorine Reaction Tank(8Nos) with Chlorine dosing system→ SBS Reaction Tank(8Nos) → Static Mixer(6 Nos) → Tertiary Clariflocculator (2Nos) → Sludge Sump(3 Nos) → Sludge Thicker(5 Nos) → Filter Press(8 Nos) → Gravity Sand Filter(4 Nos) → Tertiary treated Sump(1 No) → Activated Carbon Filter(16 No) → discharged into sea through final pumping station. The CETP is provided with fully controlled and operated by PLC (Programmable Logic Controller) and SCADA (Supervisory Control and Data Acquisition) system. The flow diagram of CETP is shown below:

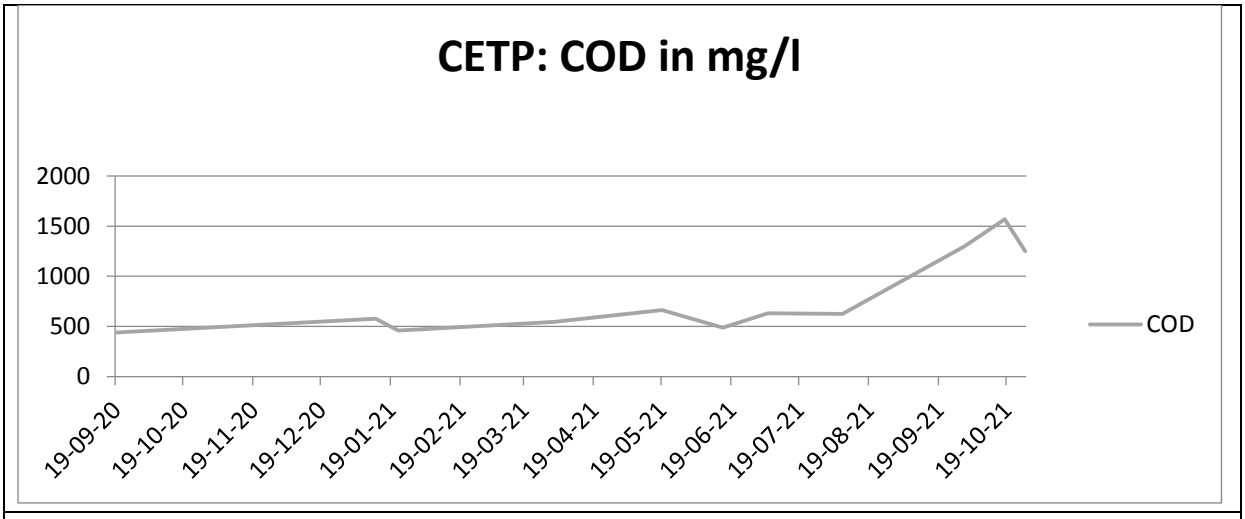
Flow Diagram of CETP



As informed, the CETP was conceptualized mainly for small scale and medium scale industries in the area having wastewater discharge less than 1MLD. Presently, the CETP is receiving

wastewater from industries located in Dahej-II and from Dahej-III area of the Estate. In total there are 32 member industries having membership from CETP with booked quantity of only 2.37 MLD out of installed 40 MLD capacity. Out of 32 member industries, about 05 industries send wastewater to CETP through tankers and remaining through GIDC drainage network. The number of member industries of CETP also includes discharge from a few large scale industries like M/s SRF, M/s Mehali Papers etc. to CETP to increase hydraulic load.

GPCB started monitoring of the CETP since 2020, It is observed from the past monitoring results of GPCB that the CETP is discharging wastewater with concentration of COD exceeding GPCB discharge norms. Increase in concentration of COD at the outlet of CETP observed in September 2021. The variation of concentration of COD is shown in the graph (Graph: 4.0).



Graph 4.0: Variation in concentration of COD in CETP

The joint team has visited the CETP on 27.10.2021 and collected grab sample from inlet (Equalization Tank) and final outlet from the CETP. The analysis results of the sample collected is tabulated below:

Analysis result by GPCB:

Parameters	Equalization tank of CETP	Final outlet of treated wastewater discharge point of CETP	GPCB Discharge Standards as per CCA
pH	7.43	7.55	5.5-9.0
Colour	500	500	--
Total Suspended Solids	114	82	100
Fluorides	4.05	3.15	15
Sulphides	5.6	**39.84**	5

Ammonical Nitrogen	172.48	**151.2**	50
Sulphate	465	82	--
Total Kjeldahl Nitrogen	185.92	**166.88**	50
Nitrate Nitrogen	12.58	4.15	50
BOD (3 days at 27 C)	208	**315**	100
COD	840	**1250**	250
Chlorides	1978	2613	--
Phenolic Compounds	0.98	1.68	5

Note: All parameters are in mg/l except pH and Colour in Pt/Co scale

Analysis result by third party:

Parameters	Equalization tank of CETP	Final outlet of treated wastewater discharge point of CETP	GPCB Discharge Standards as per CCA
pH	7.52	7.59	5.5-9.0
Colour	>500	>500	--
Total Suspended Solids	175	**150**	100
Fluorides	0.69	2.1	15
Sulphides	7	**48**	5
Ammonical Nitrogen	169	**164**	50
Sulphate	602	62	--
Total Kjeldahl Nitrogen	178	**173**	50
Nitrate Nitrogen	19	5	50
BOD (3 days at 27 C)	211	**340**	100
COD	880	**1216**	250
Chlorides	2013	1133	--
Phenolic Compounds	1.9	1.5	5

Note: All parameters are in mg/l except pH and Colour in Pt/Co scale

The analysis results reveal that the concentration of Sulphides, Ammonical Nitrogen, TKN, BOD and COD at the outlet of CETP is exceeding the discharge standards. The CETP has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 01/03/2021, 26/05/2021 and 31/07/2021.

The CETP provided seems to have good infrastructure. However, the CETP is not yet started functioning. The waste water simply flows from inlet chamber to final discharge storage tank without any treatment. The non-operational condition of CETP since inception shows the non-utilization of huge investment and also installed plant, Machinery and sensors will get defunct due to non-functioning since long.

The member industries in the area were examine for the present status of manufacturing, operational condition, type/ category etc. it is found that presently out of 32 member industries discharging wastewater to CETP most of the industries are of small and medium scale. The joint teams have carried out inspection of 08 industries including 02 large and 06 small / medium scales of industries.

Inspection reports of the industries are attached as Annexure E1 to E8. Brief findings of the industry and its compliance status are tabulated below:

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
1	M/s Mehali Papers Pvt. Ltd., Plot No. D2/11/B/2, GIDC Dahej, Bharuch	The industry is discharging wastewater to GIDC drains and using for gardening and other purposes without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP.	Non Complying	E-1
2	M/s. Viswaat Chemical Limited, Plot No. D-3/10, GIDC Dahej, Ta. Vagra, Dist. Bharuch	The industry is discharging wastewater to CETP through tankers without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP.	Non Complying	E-2
3	M/s Rossari Biotech Ltd., Plot no. D-3/24/3, GIDC, Galenda, Bharuch	The industry is discharging wastewater to CETP Dahej without complying with CCA discharge norms prescribed for inlet of CETP. Moreover, as the CETP Dahej is non-operational since beginning, the wastewater from the industry is being discharged into GIDC final	Non Complying	E-3

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		pumping station without further treatment. Therefore, the industry need to provide wastewater treatment facility to comply with discharge norms prescribed to industries discharging directly into GIDC drainage network. The industry also needs to provide connectivity of OCEMS to CPCB/GPCB servers.		
4	M/s ANAGHA CHEM, PLOT NO D-2/CH-318 , GIDC , DAHEJ, TAL: VAGRA, DIST: BHARUCH	The industry has not provided proper records of products, raw material consumption, water consumption, wastewater generation and disposal of wastewater, hazardous waste generation and haphazard storage, stacks without monitoring facility, storage of Contaminated drums, not sharing of requisite details, production of various products without CCA shows gross noncompliance of the industry. About 10MT of hazardous waste were stored within premises of the industry which has potential to contaminate soil and groundwater in and around the premises of the industry. The industry need to take adequate steps to make the ETP functional, amend CCA for the actual products which are intended to manufacture, provide proper storage facility of HW. The industry need to dispose the presently stored HW as per the CCA conditions.	Non Complying	E-4
5	M/s Magxid Fine	The industry manufactured	Complying	E-5

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
	Chem D/2, CH-323, GIDC Dahej, Bharuch	inorganic products. The analysis results of sample collected from storage tank of ETP reveals that the industry exceeds discharge norms for concentration of COD based on analysis results of third party however meets the discharge standards for all measured parameters as per analysis results of GPCB. Variation in concentration of COD at final outlet from GPCB and third party may be attributed because of high chloride interference.		
6	M/s MEGHMANI LLP (Unit-3), D-2/CH-5, GIDC, DAHEJ, TAL: VAGRA, DIST: BHARUCH	The industry is discharging wastewater to CETP without complying with CCA discharge norms. The industry generates very high COD wastewater and no separate collection and treatment system is provided. During visit the installed ETP was not in operation. The records submitted for the generation of dilute acetic acid varies with the mass balance data submitted by the industry. The industry is not following online manifest system for the disposal of dil. Acetic acid (HW). The industry need to improve treatment efficiency of its ETP through regular maintenance, proper operation and stream segregation. The industry also needs to provide flowmeter at wastewater inlet of ETP. The industry need to follow online manifest system for the disposal of HW and implement good housekeeping practices. The industry is not complying with CCA	Non Complying	E-6

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		condition to make storage facilities to store the effluent for atleast 48 hours. The industry need to take adequate steps to comply with the CCA conditions, provide proper storage facility of HW.		
7	M/s Pragna Pharma Private Limited Plot No. D2-CH-224, GIDC, Dahej-2, Tal:-Vagra, Dist:-Bharuch, 392130	The industry is meets the discharge standards of the analysed parameters. However, the industry found stored about 900 drums (approx. 180 MT) of various incinerable HW and solvents on open area and stored about 800 MT of solid hazardous waste inside the storage shed. The HW storage shed provided was not having proper leachate collection and transfer to ETP facility. The storage condition of HW, the drums were not labeled and found leakage, spillage of hazardous waste due to leachate etc. shows violation towards the overall environmental management. Huge quantity (about 800 T) of HW found stored in HDPE bags inside the storage shed and near High COD wastewater storage tank. The industry has stored lot of drums (@ 900 nos. of about 200 lt capacity) containing various HW inside the premises at many locations on open ground. The industry is not complying with CCA condition to make storage facilities to store the effluent for atleast 48 hours. The industry need to take adequate steps to comply with the CCA conditions, provide proper storage facility of HW and disposed the presently stored HW as per the	Non Complying	E-7

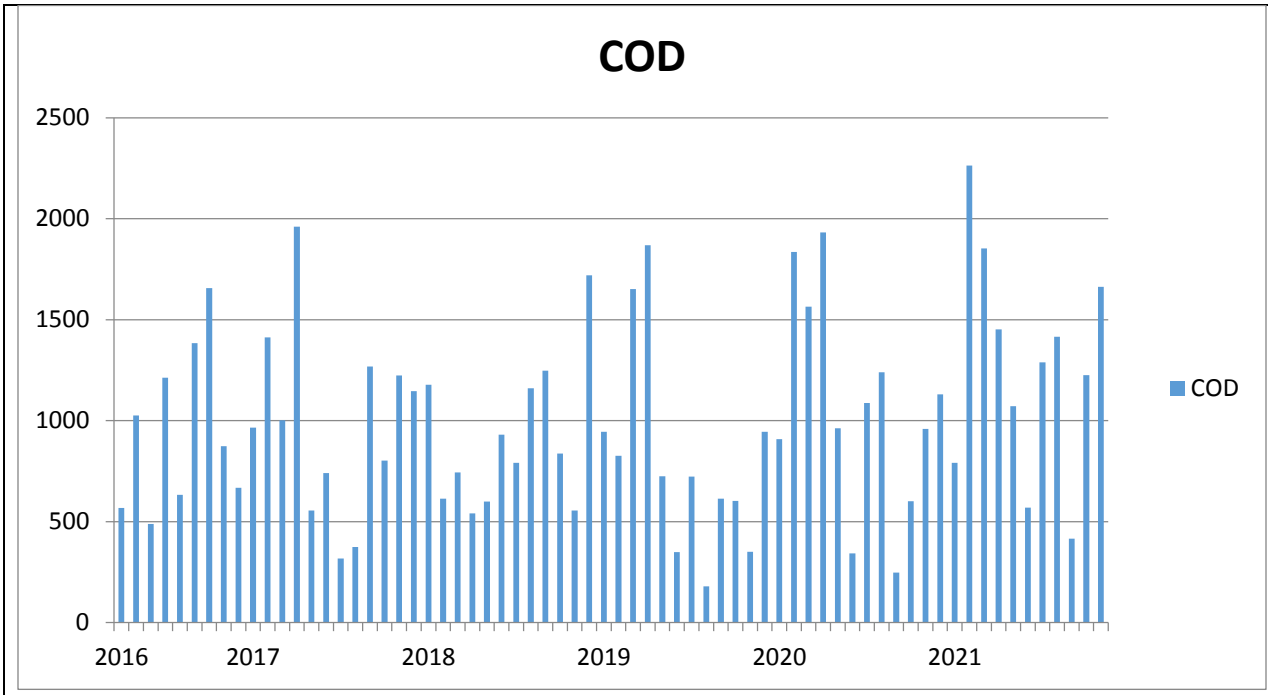
S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		CCA condition.		
8	M/s Deramic Battery Separator India Pvt. Ltd. Plot No. D3-17, GIDC Dahej III Tal Vagra, District Bharuch	Industry was operational during the visit. The waste water samples collected from the ETP reveals that Industry meeting the discharge norms prescribed by the GPCB. The industry disposing its waster through tanker to CETP Dahej. Industry has provided proper hazardous waste storage area. The overall housekeeping in the ETP and in plant found satisfactory.	Complying	E-8

3.5. Observations with respect to Final Pumping Station:

The final pumping station located at Ambetha, Dahej receives wastewater from 08 drainage connection covering about 1040.40 Hectares of Area in the GIDC. The Booked wastewater discharge quantity from the member industries discharging directly to FPS is 20343.3 KLD. Industry wise HDPE storage tank is provided before discharge from member industries to FPS. The final pumping station also receives wastewater from Vilayat Pumping Station, Pumping Station A, Pumping Station C and CETP.

The final pumping station is provided with pumping arrangement to discharge the wastewater to final disposal point through pipeline having hydraulic capacity of 90,000 KLD (90 MLD). The final pumping station has collection sump and also provided with three sludge drying beds. Heavy sludge deposition is observed on the walls of collection sumps.

It is observed from the past monitoring results of GIDC and GPCB of sample of final pumping station that the COD of wastewater from final pumping station varies from 179 mg/l (02.08.2019) to 2264 mg/l (03.02.2021). The variation of concentration of COD in last 05 years is shown in the graph (Graph: 5.0).



Graph 5.0: Variation in concentration of COD in FPS

From the graph plotted for concentration of COD observed during last 05 years it can be seen that regular non-compliance with respect to discharge standard observed since 2016. During last five years, there are only two occasions when the sample from FPS meets GPCB discharge standards.

Out of 08 member industries discharging directly into FPS, the joint team has visited 05 industries. Inspection report of the industries is attached as Annexure F1 to F5. Brief findings of the industry and its compliance status are tabulated below:

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
1	M/s Deepak Nitrite Limited, Plot No. 12/B Dahej GIDC Estate Dist. Bharuch.	During the visit industry was not operational reportedly due to annual boiler maintenance shutdown and non-availability of raw materials. ETP was also not operational during the visit therefore waste water samples were not collected. During the visit reportedly 1010 MT hazardous waste of various type was stored in the hazardous waste storage shed. Industry has provided concreate flooring in the sludge storage area. However, industry has not provided proper leachate collection facility in sludge storage shed. Industry needs to dispose-off the all the waste stored in the Hazardous waste storage area. Industry needs to provide proper leachate collection facility in the storage shed. During the visit it is observed that unit is not maintaining the logbook record of ETP operations and waste water discharge. The current flow meter readings were not matching with the last discharge of waste water into GIDC pumping station. Industry needs to maintain the proper logbook for the discharge of treated waste water and ETP operations.	Non operational during visit	F-1

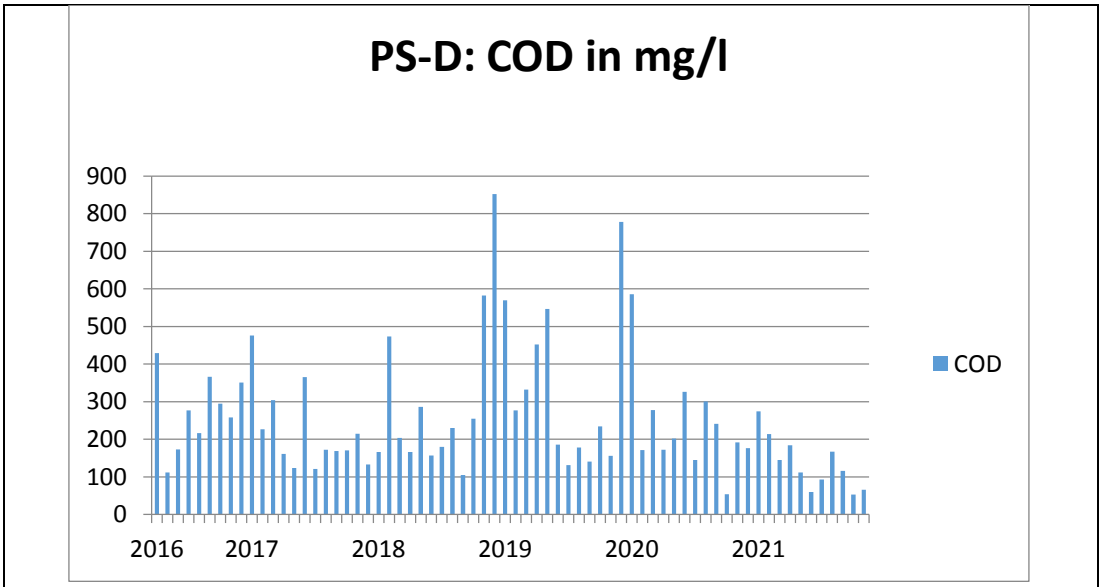
S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		Industry needs to update the details of hazardous waste and other information on the display board at the entrance gate of the industry.		
2	M/s Deepak Phenolics Limited (DPL) Plot No.12/B/1 GIDC Estate Dahej. Tal. Vagra, Distric Bharuch	Industry meeting the norms for final outlet discharge prescribed by the GPCB and overall compliance is found satisfactory.	Complying	F-2
3	M/s Gujarat Fluorochemicals Ltd., Plot no. 12-A, GIDC Dahej, Tal. Vagra, Bharuch	The industry is discharging wastewater to Final pumping station of GIDC without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP for each stream. The industry had stored calcium chloride along with other waste haphazardly inside the premises. The industry need to explore to utilize or sell calcium chloride produced instead of disposing it in CHWTSDF. The industry need to improve handling of coal dust, fly ash and other wastes inside the premises and implement good housekeeping practices.	Non Complying	F-3
4	M/s. ONGC Petro Additions Ltd, OPAL-Petrochemical Complex, Vill: Ambheta , Ta: Vagra, GIDC Dahej	The sample collected from the final discharge point meets the GPCB discharge standard. However, the industry has not provided proper hazardous waste storage shed. Seepage was observed from some of the drums. The present practice	Complying	F-4

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
		of storage of HW needs improvement.		
5	M/s NOCIL LTD. Plot No. 12/A/1 & 13/B, GIDC , Dahej 392130 Tal. Vagra, District Bharuch	Industry is discharging waste water without meeting discharge norms as prescribed in CCA by GPCB. Therefore, industry needs to upgrade treatment system to meet the discharge norms. During the visit it is observed that ETP is not of adequate hydraulic load as per CCA condition hence, Industry needs to increase the ETP capacity of adequate hydraulic load as per CCA condition. Unit should have installed flow meter at the collection pits of respective plant and should maintain the proper record in logbooks.	Non Complying	F-5

3.6. Observations with respect to Pumping Station D:

The pumping station D has 17 drainage connection (comprising 15 Red category industries and 02 orange category industries) covering about 118.66 Hectares of Area located in SEZ-II. The Booked wastewater discharge quantity from the member industries in the underground drainage network of pumping station D is 5959.75 KLD. The pumping station D has hydraulic design capacity of 5,000 KLD (5 MLD). Wastewater from member industries through gravity (underground drainage) reaches to the chamber of pumping station D from where the wastewater is pumped to T-joint into the drainage line from FPS to final disposal point.

It is observed that the booked quantity found higher than that of the hydraulic pumping capacity. From the past monitoring results of GIDC and GPCB of sample of pumping station D it is observed that the COD of wastewater from pumping station D varies from 53 mg/l (06.10.2021) to 852 mg/l (01.12.2018). The variation of concentration of COD in last 05 years is shown in the graph (Graph: 6.0).



Graph 6.0: Variation in concentration of COD in last 05 years at Pumping Station D

From the graph plotted for concentration of COD observed during last 05 years it can be seen that some non-compliances with respect to discharge standard observed since 2016. However, less polluted discharge as compared to the gross non-compliance of pumping station A and C was observed. The joint team has also collected sample of wastewater from pumping station D on 17.11.2021. The analysis results are tabulated below:

Parameters	**Discharge norms as per CCA**	**Analysis Results by GPCB**	**Analysis Results by third party laboratory**
pH	6 to 9	7.1	7.19
Colour	--	100	185
Total Suspended Solids	100	28	**120**
Fluorides	15	1.31	1
Sulphides	5	<1	3
Ammonical Nitrogen	50	20.16	26
Sulphate	--	3674	1560
Total Kjeldahl Nitrogen	50	31.92	34
Nitrate Nitrogen	50	0.51	5
BOD (3 days at 27 C)	100	34	35
COD	250	165	120
Chlorides	--	2044	2003
Phenolic Compounds	5	0.14	0.12

Note: All parameters are in mg/l except pH and Colour in Pt/Co scale

The GPCB analysis results show that concentration of all the parameters are within the permitted discharge standards as mentioned in the CCA.

The member industries in the area were examine for the present status of manufacturing, operational condition, type/ category etc. it is found that presently out of 17 member industries discharging wastewater through pumping station D, 02 industries are orange category, 08 industries are manufacturing different organic chemicals including pesticide, 05 industries are manufacturing pharmaceutical chemicals/API and 02 industries are producing dye & dye intermediates remaining. The joint teams have carried out inspection of only 01 pesticide manufacturing industry considering comparatively less polluted wastewater in pumping station D as compared to Pumping Station A and C.

Inspection report of the industry is attached as Annexure G1. Brief findings of the industry and its compliance status are tabulated below:

S.No.	Name of Industry	Brief findings	Compliance status	Inspection Report Annexed as
1	M/s Yashashvi Rasayan Pvt. Ltd. Plot No. Z/96/E Dahej SEZ II Tal. Vagra, District Bharuch	Industry discharging the waste water into the GIDC pumping station meeting the discharge norms as per GPCB analysis results. Industry has stored about 1114 MT of various type of hazardous waste in hazardous waste storage area. The industry needs to provide leachate collection facility in the storage shed. Industry needs to provide safety measures like fire alarming system, smoke detectors and water sprinkling system in the hazardous waste storage shed. Industry needs to dispose-off stored hazardous waste on priority basis. Industry should update the hazardous waste details and other information on the display board at the entrance gate of the industry.	Complying	G-1

3.7. Observations with respect to Final Disposal point:

The joint team has visited the final disposal point on 26.10.2021. It is found that the present main disposal line is routed for disposal through a separate pipeline near the shore with extension limited to about 600 m into the Sea, instead of 4.5 km line (due to damage /choking of 4.5 km off-shore pipeline /diffuser system) as was suggested by NIO. The 600 m off shore pipe line used is having leakages at a number of locations in between High Tide Level (HTL) & Low Tide Level (LTL) into CRZ-IB Area. Google image of final disposal point and photographs taken during visit are shown below:

Grab Sample of wastewater from the present disposal point was collected during visit. The analysis results of the sample collected is tabulated below:

Parameters	**Discharge norms as per CCA**	**Analysis Results by GPCB**	**Analysis Results by third party laboratory**
pH	6 to 9	7.41	7.21
Colour	--	300	>500
Total Suspended Solids	100	**278**	**286**
Fluorides	15	6.4	2.2
Sulphides	5	14.4	24
Ammonical Nitrogen	50	**89.04**	**53**
Sulphate	--	4712	5848
Total Kjeldahl Nitrogen	50	**99.1**	**60**
Nitrate Nitrogen	50	11.78	1.4
BOD (3 days at 27 C)	100	**481**	**552**
COD	250	**1860**	**2495**
Chlorides	--	3215	2466
Phenolic Compounds	5	**13.89**	**12**

Note: All parameters are in mg/l except pH and Colour in Pt/Co scale

The analysis results shows that concentration of TSS, COD, BOD, Ammonical Nitrogen, TKN and phenols exceeds the discharge standards as mentioned in the CCA. The exceedance factor with respect to discharge standards shows gross non-compliance.

It was informed that now GIDC has undertaken the work of Providing and Laying 1000 mm Dia HDPE pipe line for discharging 90MLD wastewater up to 800 mtr offshore replacing the above mentioned 600mt offshore discharge line. The present disposal point is also not suggested by NIO.

3.8. Other Observation on Survey of GIDC area:

During survey of the GIDC area, coloured patches or accumulation of wastewater was observed in the vacant plots, near many manhole chambers of the drainage network etc. It is understood that it may be due to overflow of wastewater from the manhole chambers and its spread on the area surrounding the chambers. Moreover, the overflow was not addressed timely and properly which indicates from the dried colored patches (white, yellow, black, reddish etc.).

Contaminated water ponding due to leakages/overflow from Pumping Station C drainage network

Contaminated water ponding on vacant plot due to leakages/overflow from Pumping Station C drainage network

- During visit, the storm water drains in the area was having contaminated wastewater.

Grab samples of wastewater was also collected by the joint team during visit. The analysis results of the sample collected is tabulated below:

Analysis results by GPCB:

Parameters	**Discharge norms as per CCA**	**GIDC storm water drain near m/s Momai Impex**	**GIDC storm water drain near m/s Indofil Industries Ltd Unit-3**	**Storm water drain beside Khaitan Fertilizer road near Salt Pan, Dahej**	**Storm water ponding near Salt pan, Dahej (storm water drain coming from Amod road)**
pH	6 to 9	7.79	6.83	**4.92**	8.6
Colour	--	150	400	500	30
Total Suspended	100	**366**	**4704**	76	28

Solids					
Fluorides	15	0.7	1.6	**18.25**	4.7
Sulphides	5	<1	**13.6**	**5.28**	BDL
Ammonical Nitrogen	50	BDL	**50.4**	**515.2**	1.68
Sulphate	--	158	477	1103	476
Total Kjeldahl Nitrogen	50	1.68	**84**	**604.8**	4.48
Nitrate Nitrogen	50	4.89	1.69	12.89	3.45
BOD (3 days at 27 C)	100	60	**424**	**512**	24
COD	250	237	**1737**	**2086**	101
Chlorides	--	327	2946	7845	2309
Phenolic Compounds	5	BDL	**15.6**	**11.96**	< 0.1

Note: All parameters are in mg/l except pH and Colour in Pt/Co scale

Analysis results by third party laboratory:

Parameters	**Discharge norms as per CCA**	**GIDC storm water drain near m/s Momai Impex**	**GIDC storm water drain near m/s Indofil Industries Ltd Unit-3**	**Storm water drain beside Khaitan Fertilizer road near Salt Pan, Dahej**	**Storm water ponding near Salt pan, Dahej (storm water drain coming from Amod road)**
pH	6 to 9	7.68	6.92	**4.78**	8.58
Colour	--	>500	>500	>500	200
TSS	100	**450**	**3600**	**140**	**120**
Fluorides	15	1	BDL	**15.5**	2.9
Sulphides	5	BDL	**20.5**	**42**	2.5
Ammonical Nitrogen	50	BDL	50	**203**	BDL
Sulphate	--	61	226	1228	404
TKN	50	BDL	**58**	**210**	8
Nitrate	50	2	7.4	9	7

Nitrogen					
BOD (3 days at 27 C)	100	40	**195**	**550**	15
COD	250	168	**880**	**2040**	52
Chlorides	--	294	2869	9212	2265
Phenolic Compounds	5	0.23	1.6	1.45	2.19

Note: All parameters are in mg/l except pH and Colour in Pt/Co scale

The analysis results of samples of storm water drain collected from 4 locations shows very high organic contamination. It is understood that the rainwater runoff from the industries in the area is one of the reason of contamination of storm water drains besides overflow from manholes and pumping stations. As the evidences of mismanagement of hazardous waste in form of storage on open ground, seepages, waste dust laying on roads etc. is observed during visit to industries in the area. Such improper management of hazardous waste may have led to runoff of contaminated water during rainfall to the storm water drains in the area.





Storm water drains in the area

Thus, be inferred that there are lapses on part of treatment of industrial wastewater in the area. Illegal discharges of high COD wastewater through ghost connections in the underground drainage network may also be possible as high COD of more than 9000 mg/l observed from drainage line from pumping station A to FPS and acidic wastewater observed in the sample collected from drainage network of pumping station C (Pumping Station E). The non-compliance of wastewater discharge is observed from the last 5 year monitoring results of GPCB/GIDC.

The overall noncompliance of discharge standards at Final disposal point, heavy sludge deposition at FPS, overflowing of manholes due to choking / leakage problems of GIDC drainage lines, frequent overflowing of wastewater from manholes and pumping stations, contaminated runoff from industries etc. is leading to storm water drain / surface drains. The drains ultimately carry wastewater to estuary of River Narmada & to the Sea. Accumulation of wastewater in some area may also lead to soil and ground water contamination in the area.

3.9. Action taken by GPCB against GIDC:

The GIDC Dahej-Vilayat Pipeline Development cell has been issued closure directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 23.09.2021, 24.03.2021, 14.08.2021, 23.03.2021 & 30.01.2019 and issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 27.05.2020, 31.12.2019, 24.08.2019, 24.12.2018, 06.09.2018, 25.07.2018, 20.06.2018, 25.01.2018, 16.11.2017, 25.09.2017, 12.06.2017, 03.03.2017, 31.08.2016 & 04.04.2016 by GPCB.

3.10. Observation based on Visit of Industries in the Area:

As detailed above, there are total 99 industries discharging wastewater into the drainage system of GIDC Dahej which includes Red, Orange category of the industries, Large, Medium & small scale industries. The Joint team visited total 34 industries in the area including one orange category industry, CETP Dahej which are discharging wastewater into the GIDC Drainage system. The inspection reports of individual industries are provided in the Annexures as detailed above. The findings of the inspection of industries were tabulated based on the point of discharge on the GIDC drainage network. The overall findings based on the inspection of industries are surmised below:

It was found that the member industries discharging wastewater to pumping station A and C are mostly organic chemicals, pesticides, Pharmaceuticals, Dyes & Dyes intermediates manufacturing units which have potential of generating highly polluted wastewater.

Many industries in the area have provided separate treatment systems for high COD/high TDS wastewater and Low COD/low TDS wastewater. In general, it is observed that systems like MEE followed by ATFD, Incinerator, RO system etc. are provided for High COD/TDS wastewater streams. It was also found that industries are also sending the high COD/TDS stream to common MEE and Common Spray Dryer through drums/tankers. The industries have provided treatment system comprising of primary, secondary and/or tertiary system for the treatment of low COD/TDS streams.

Mishandling/improper storage/runoff of leachate/spillages of various types of hazardous waste (ETP Sludge/MEE Salts/Gypsum/residue/solvent cut etc.) was observed in most of the visited industries. Drums containing hazardous chemicals/waste/residue was found stored on open grounds without labeled/identification. In some of the industries the stored drums were found in dilapidated condition and emitting fumes.

Most of the industries have not provided 48 hr wastewater guard pond as per one of the condition of CCA.

The joint team has collected samples of final discharge into the GIDC drainage system and analyzed parameters were compared with the GPCB discharge norms. The industry wise compliance status were considered based discharge condition/mismanagement of hazardous Waste/accumulation of polluted wastewater on open land or storm water drain, inadequate capacity of ETP/OCEMS system not provided/leakages leading to storm water drain/ponding of wastewater etc.

Summarily, all 07 visited industries discharging at Pumping station A found non-complying, 07 out of 08 visited industries discharging at Pumping station C found non-complying, 01 out of 04 visited industries discharging at Vilayat Pumping station found non-complying, 06 out of 08

visited industries discharging at CETP Dahej found non-complying, 02 out 05 visited industries discharging at Final Pumping station found non-complying and 01 industry was not in operation, the visited industry discharging at Pumping station D found meeting the norms as per GPCB analysis results. It is worth to mention that exceedance (marginal or gross) and numbers of parameters are varying and thus degree of non-compliance.

4. ENVIRONMENT DAMAGE COMPENSATION:

Hon'ble NGT has also directed the joint team to assess the environmental compensation in case violation is observed. The joint team has referred earlier order dated 10.7.2019 of Hon'ble NGT in the matter OA 1038/2018 wherein, in the para 13 it is mentioned that *"…….assessing and recovering compensation from such identified polluters at least for five years which is the period specified under section 15(3) of the National Green Tribunal Act 2010…."*. The joint team has considered number of days of violation starting from the first date of NOD/ direction with respect to wastewater management issued by GPCB to the industry since 01.04.2016 till 29.11.2021 (Date of Hearing of the matter before Hon'ble NGT). In case GPCB not issued any directions during last five years, the number of days of violation is considered from the date of visit. The joint team has considered continual violation of the industry with respect to wastewater management because of the fact that the final disposal quality of the wastewater found non-complying the discharge conditions based on the last five years data.

During inspection of the industries in the area, GIDC Infrastructure, CETP Dahej etc. it was found that many industries are not complying with the discharge standards/conditions as per CCA and gross non-compliance of hazardous waste management practiced in terms of storage HW in open area, leakages, spillages, runoff etc. by the industries in the area. Such mismanagement of various types of hazardous waste and its runoff during rains may be considered as one of the reasons for contamination observed in the storm water drains in the area. Huge stored quantity of incinerable hazardous waste in open area may also have potential of fire accidents. Moreover present practice of hazardous waste management also results in contamination of soil and ground water in addition to health and safety hazards. As mismanagement of hazardous waste is detrimental to overall wastewater management, therefore the environmental damage compensation was calculated for the non-complying industries considering two aspects viz.

- non-compliance of discharge conditions/OCEMS and overall wastewater management
- mismanagement of hazardous waste

Environmental Compensation is also calculated for GIDC (Respondent no 4) considering gross violation of CCA condition by GIDC in terms of:

- Discharging wastewater exceeding the discharge standards on CRZ area since 2016.
- Spillages and contamination on vacant plots observed at many locations in the GIDC.
- Storm water drains having contaminated wastewater
- Non-availability of flow measuring device/OCEMS system
- Non-complying with various directions of GPCB

The Environment Compensation is calculated following the guideline/methodology prepared by CPCB for calculation of Environmental Compensation. Summary of methodology adopted is briefed below:

The environmental damage compensation for present case (EC) can be defined as

$$\mathbf{EC = EC_1 + EC_2}$$

Where, EC_1 is environmental compensation for violation of CCA conditions and EC_2 for environmental compensation for violation of HW Rules [CPCB guideline May 2019: Determination of Environmental Compensation to be recovered for violation of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016] as detailed below.

EC_1 was calculated for following cases:

a) Discharges in violation of consent conditions, mainly prescribed standards/ consent limits
b) Not complying with the directions issued, such as direction for closure due to non-installation of OCEMS, non-adherence to the action plans submitted etc.
c) Intentional avoidance of data submission or data manipulation by tampering the online continuous emission/effluent monitoring systems

As per this method, the Environmental Compensation shall be based on the following formula:

$$\mathbf{EC_1 = PI \times N \times R \times S \times LF}$$

Where:

PI= Pollution Index of industrial sector, as the concerned industries falls in the Red Category, its Pollution Index is 80

N= Number of days for which the violation took place is considered from the first date of NOD/ direction with respect to wastewater management issued by GPCB to the industry since 01.04.2016 till 29.11.2021 (Date of Hearing of the matter before Hon'ble NGT). In case GPCB not issued any directions during last five years, the N is considered from the date of visit. The joint team has considered continual violation of the industry with respect to wastewater

management because of the fact that the final disposal quality of the wastewater found non-complying the discharge conditions based on the last five years data.

R= A factor in Rupees (Rs.) for EC is Rs. 250/day

S= Factor for scale of operation is 1.5 for large scale, 1.0 for medium scale and 0.5 for small or micro scale.

LF= Location Factor is 1 as the population of the area is less than 1 million.

These values have been applied to the formula for EC_1 determination for the industries and GIDC where non-compliance observed.

EC_2 was calculated for following cases:
Where mismanagement of hazardous waste was observed, stored quantity of hazardous or other wastes, which may have caused environmental damages, may be proportionate to extent of damages thereof.

The Environmental compensation EC_2 may, therefore, be directly correlated with the quantity of hazardous or other waste under reference as per Determination of Environmental Compensation to be recovered for violation of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

Under such wide variables, the following quantity based environmental compensation EC2 calculation in Rupees may be used and be imposed on violating facility /operator:

$$\mathbf{EC_2 = Q \times ERF \times R}$$

Where,

Q is noticed or observed quantity (in MT) of hazardous or other wastes which have not been managed in compliance with various provisions of the Acts/Rules/Guidelines/conditions of the authorisation/directions issued by CPCB/SPCB/PCC/MoEF&CC

ERF = Environmental Risk Factor which is a number denoting the increasing degree of risk to the environment and human health due to the scenarios = 1.5 (When hazardous and other wastes is disposed at un-authorized place or handed over or sold to unauthorized party)

R= Environmental Compensation factor, which may be taken as Rs. 30,000 (as per referred guideline).

Based on the non-compliance observed, calculated EC for industries and GIDC are tabulated below.

S.No.	Name of Industry	Scale of Operation (as per GPCB records)	No. of days of violation	EC_1 (Rs. In crores)	Quantum of HW observed (MT)	EC_2 (Rs. In crores)	Total EC (Rs. In crores)
1.	M/s Meghmani Organics Ltd., Plot No. CH-1, CH-2/A, D-2/CH 10/A, GIDC Dahej	1.5	1936	5.808	1000	4.5	10.308
2.	M/s. Bharat Rasayan Ltd.,42/4, GIDC, DAHEJ, Amod road, Tal: Vagra, Dahej - 392130	1.5	1867	5.601	98.529	0.443381	6.044
3.	M/s. Hemani Industries Ltd, CH-5,E-362 GIDC Dahej, Tal: Vagra, Bharuch	1.5	1569	4.707	100	0.45	5.157
4.	M/s Insecticides India Ltd.,Plot no. CH-21, GIDC Dahej, Tal: Vagra, Bharuch	1.5	1338	4.014	160	0.72	4.734
5.	M/s Meghmani Limited Liability Partnership, D-2/CH-3, GIDC, Dahej, TAL: Vagra, DIST: Bharuch	1	1377	2.754	0	0	2.754
6.	M/s Meghmani Novotech Pvt. Ltd. Plot No: CH-22, GIDC Estate-Dahej, Ta: Vagra, Dist: Bharuch.	1	12	0.024	560	2.52	2.544
7.	M/s Tagros Chemicals India Limited, Plot No.	1.5	2014	6.042	0	0	6.042

S.No.	Name of Industry	Scale of Operation (as per GPCB records)	No. of days of violation	EC_1 (Rs. In crores)	Quantum of HW observed (MT)	EC_2 (Rs. In crores)	Total EC (Rs. In crores)
	43/1, GIDC Estate Dahej , Tal. Vagra,						
8.	M/s Meghmani Industries Ltd., Plot No. Z-6, SEZ, Dahej, Tal. Vagra & Dist.: Bharuch-392130	1.5	2051	6.153	1000	4.5	10.653
9.	M/s Sun Pharmaceuticals Pvt. Ltd., Plot No. Z-15, SEZ, Dahej, Tal. Vagra & Dist.: Bharuch- 392130	1.5	36	0.108	50	0.225	0.333
10.	M/s Aries Color Chem Pvt Ltd, PLOT NO Z/29 ,Z/30,DAHEJ SEZ PART I, Dahej, Tal. Vagra & Dist.: Bharuch- 392130	1	1762	3.524	0	0	3.524
11.	M/s Accent Microcell Pvt. Ltd. PLOT NO Z/59, Z/63,Z/64,DAHEJ SEZ PART I, Dahej, Tal. Vagra & Dist.: Bharuch- 392130	1	2058	4.116	0	0	4.116
12.	M/s Meghmani Organics Limited (Unit-8) Plot No. Z-31, Z-32 Dahej SEZ Part- 1, Tal. Vagra,	1.5	2013	6.039	400	1.8	7.839
13.	M/s Shiva Pharmachem Ltd. Plot No. Z-88,Z-88/4 Dahej SEZ Part- 1, GIDC Dahej	1.5	1035	3.105	0	0	3.105
14.	M/s Meghmani LLP (UNIT-II), Plot No: Z-34, Dahej	1.5	1463	4.389	0	0	4.389

S.No.	Name of Industry	Scale of Operation (as per GPCB records)	No. of days of violation	EC_1 (Rs. In crores)	Quantum of HW observed (MT)	EC_2 (Rs. In crores)	Total EC (Rs. In crores)
	SEZ,						
15.	M/s Gujarat Fluorochemicals Ltd., Plot no. 12-A, GIDC Dahej, Tal. Vagra, Bharuch	1.5	1730	5.19	0	0	5.190
16.	M/s NOCIL LTD.Plot No. 12/A/1 & 13/B, GIDC , Dahej 392130Tal. Vagra, District Bharuch	1.5	35	0.105	0	0	0.105
17.	M/s Mehali Papers Pvt. Ltd., Plot No. D2/11/B/2, GIDC Dahej, Bharuch	1.5	1182	3.546	0	0	3.546
18.	M/s. Viswaat Chemical Limited, Plot No. D-3/10, GIDC Dahej, Ta. Vagra, Dist. Bharuch	1.5	34	0.102	0	0	0.102
19.	M/s Rossari Biotech Ltd., Plot no. D-3/24/3, GIDC, Galenda, Bharuch	1	34	0.068	0	0	0.068
20.	M/s ANAGHA CHEM, PLOT NO D-2/CH-318 ,GIDC , Dahej, TAL: Vagra, DIST: Bharuch	0.5	34	0.034	10	0.045	0.079
21.	M/s MEGHMANI LLP (Unit-3),D-2/CH-5, GIDC , Dahej, TAL: Vagra, DIST: Bharuch	1	172	0.344	0	0	0.344
22.	M/s Pragna Pharma Private Limited, Plot No. D2-CH-224, GIDC,	0.5	34	0.034	180	0.81	0.844

S.No.	Name of Industry	Scale of Operation (as per GPCB records)	No. of days of violation	EC_1 (Rs. In crores)	Quantum of HW observed (MT)	EC_2 (Rs. In crores)	Total EC (Rs. In crores)
	Dahej-2, Tal:- Vagra, Dist:- Bharuch						
23	M/s Hemani Crop Care Private Limited, Plot No. 73-74, GIDC Saykha, Tal. Vagra & Dist.: Bharuch	1	13	0.026	40	0.18	0.206
24	CETP Dahej	1.5	274	0.822	0	0	0.822
25	GIDC Dahej	1.5	2066	6.198	0	0	6.198

The Environmental Damage compensation is calculated for the visited non-complying industries. However, the overall condition of wastewater management in the area is not limited to the visited industries. The other industries in the area may also contribute to the condition. However, the industries visited cover the regular non-complying industries in the area as per records of GPCB.

5. CONCLUSIONS

In the matter of Hon'ble NGT OA no. 60/2021 (WZ) [Aryavart Foundation v/s Hemani Industries Ltd. & Ors.] related with wastewater management by the industries and Gujarat Infrastructure Development Corporation (GIDC) in the Dahej industrial area, joint teams of CPCB and GPCB has carried out inspection of industries located in the area which are discharging wastewater into the GIDC drainage system. There are total 99 industries discharging wastewater into the drainage system of GIDC Dahej which includes Red, Orange category of the industries, Large, Medium & small scale industries. The remaining industries in the area are having Zero Liquid Discharge condition as per CCA. The Joint team visited total 34 industries in the area including one orange category industry and CETP Dahej which are discharging wastewater into the GIDC Drainage system. The joint team has also visited and collected samples from various pumping stations and final disposal point of GIDC drainage network to check the final discharge quality and also GIDC drainage network as GIDC is issued CCA by GPCB categorized under Red Category.

The joint team visited total 34 industries including CETP Dahej and the industry of Respondent No.1 in the matter and has collected samples of final outlet which is being discharge into the

GIDC drainage system and analyzed parameters were compared with the norms prescribed in the CCA. The industry wise compliance status is assessed on the basis of discharge condition/management of hazardous Waste/accumulation of polluted wastewater on open land or storm water drain, inadequacy of ETP/OCEMS system, leakages leading to storm water drain/ponding of wastewater etc. The industry wise findings are discussed in the respective annexed reports. Summarily, all 07 visited industries discharging at Pumping station A found non-complying, 07 out of 08 visited industries discharging at Pumping station C found non-complying, 01 out of 04 visited industries discharging at Vilayat Pumping station found non-complying, 06 out of 08 visited industries discharging at CETP Dahej found non-complying, 02 out 05 visited industries discharging at Final Pumping station found non-complying and 01 industry was not in operation, the visited industry discharging at Pumping station D found meeting the norms as per GPCB analysis results. It is worth to mention that exceedance (marginal or gross) and numbers of parameters are varying and thus degree of non-compliance.

The joint team also visited the CETP Dahej and collected samples. The CETP has good infrastructure. However, the CETP is not yet started functioning. The waste water simply flows from inlet chamber to final discharge storage tank without any treatment. The non-operational condition of CETP since inception shows the non-utilization of huge investment and also installed plant, Machinery and sensors will get defunct due to non-functioning over the period. The analysis results reveal that the CETP is not meeting the discharge standards.

The analysis results of the sample collected from the pumping station A and Pumping station C indicates illegal discharges of high COD wastewater through ghost connections in the underground drainage network as high COD of more than 9000 mg/l observed from drainage line from pumping station A to FPS and acidic wastewater observed in the sample collected from drainage network of pumping station C.

The last 5 years monitoring results of GIDC pumping network analyzed by GPCB were examined. The analysis results show continual non-compliance with respect to wastewater discharge standards. It can thus be inferred that there are lapses on part of treatment of industrial wastewater in the area.

The joint team has visited the final disposal point and found that the present main disposal line is routed for disposal through a separate pipeline near the shore with extension limited to about 600 m into the Sea, instead of 4.5 km line (due to damage /choking of 4.5 km off-shore pipeline /diffuser system) as was suggested by NIO. The 600 m off shore pipe line used is having leakages at a number of locations in between High Tide Level (HTL) & Low Tide Level (LTL) into CRZ-IB Area. The analysis results of sample collected shows that concentration of TSS, COD, BOD, Ammonical Nitrogen, TKN and phenols exceed the discharge standards as mentioned in

the CCA. The exceedance factor of the sample collected by the joint team shows gross non-compliance with respect to prescribed standards.

The overall noncompliance of discharge standards at Final disposal point, heavy sludge deposition at FPS, overflowing of manholes due to choking / leakage problems of GIDC drainage lines, frequent overflowing of wastewater from manholes and pumping stations, contaminated runoff from industries etc. is leading to storm water drain / surface drains. The drains ultimately carry wastewater to estuary of River Narmada & to the Sea. Accumulation of wastewater at some places may also lead to soil and ground water contamination.

As per order of Hon'ble NGT, the environmental damage compensation for the non-complying industries, CETP and GIDC is also calculated for kind consideration by the Hon'ble NGT. Hon'ble NGT has also directed the joint teams to come out with solutions. Based on the above detailed findings, following actions/measures are suggested for kind consideration:

For the Industries and CETP in the area:

- Strict action including closure directions (with disconnection of Electricity and GIDC water supply and drainage connection) against the industries found grossly and repeatedly violating the CCA condition may be issued by GPCB.
- All the Industries need to take corrective action for the non-compliances observed and mentioned in the respective reports including compliance of conditions prescribed in the CCA.
- Environment Damage compensation is calculated for respective non-complying industries till the date of hearing i.e. 29.11.2021 which may be extend till the date of actual compliance achieved by the respective industry. The industry may require depositing Environment Damage Compensation (EDC) and submitting compliance report/time bound action plan to GPCB and after verification, GPCB may further charge EDC till the date of actual compliance.
- The industries in the area need to provide separate flow meters and energy meters for ETP, MEE, incinerator and color coding of all pipeline networks of wastewater within the premises of Industries with flow directions and nomenclatures. Only single discharge point at the final outlet tank should be practiced by the industries.
- All the industries in the area need to handle, store and dispose various types of hazardous waste as per the Hazardous & Other Waste (Management and Handling) Rules, 2016. Industries need to provide adequate in-house HW storage facility with leachate management system.

- Industries in the area are handling various toxic and hazardous chemicals as raw material and manufacturing many such products. Many of such chemicals contains high VOCs. All industries need to take adequate measures to prevent leakage, spillage while handling such chemicals.

For the GIDC

- GIDC may be directed to stop discharge of wastewater in CRZ 1B area and to lay down the deep sea disposal pipeline with diffusers as suggested by NIO at the earliest. GIDC may also explore technology for regular cleaning or select such Material of construction of pipeline to avoid scaling and chocking. GIDC should take the requisite permission from CRZ Authority, GPCB etc. for laying new pipeline and changes if any.
- GIDC may require to deposit EDC and submit compliance report/time bound action plan to GPCB and after verification, GPCB may further charge EDC till the date of actual compliance. In addition, considering the years of non-compliance and discharge of high polluted wastewater into CRZ area which has potential to create adverse effect on Marine ecology, detailed impact assessment study from institute of repute involved in the research of coastal/marine ecology may be carried out by GIDC and the measures for the restoration of the marine ecology as suggested by the institute need to be implemented.
- GIDC need to take immediate action to lift accumulated wastewater due to leakages/seepage/overflow in PCPIR area and also dredging of contaminated soil. The dredged contaminated soil need to be disposed safely at CHWTSDF site. GIDC may also identify the reasons and take corrective measures to prevent frequent overflow from the manholes and pumping stations.
- Augmentation of the infrastructure like replacing the subsided drainage lines near OPAL in SEZ-1 and replacing damaged/leaking other drainage lines to be made by GIDC on priority basis.
- GIDC reported past incidence of choking of final discharge pipeline. The probable reasons like discharge of wastewater beyond CCA standards, reaction tendency during mixing of various types of wastewater discharged from different types of industries etc. has resulted in such chokings. To avoid such chokings & scaling in the pipeline again in future, GIDC may explore and implement measures to help in removal of salts formation at final pumping station before discharge of wastewater.
- GIDC need to provide Guard Pond at Final Pumping station to hold wastewater in case of maintenance of pumping stations/drainage network, monsoon or any such emergency so that discharge/bypass from pumping stations to storm water drain may not occur.

- GIDC need to provide flow measuring system and to make online TOC/COD meter operational at all the pumping stations. Proper records of flow and COD need to be maintained by GIDC. GIDC need to take strict action against non-complying industries.
- The GIDC need to switch to Express discharge line for better surveillance. Express discharge lines with free fall and auto sampler arrangements may be initiated first for Industrial units connected to Pumping station A and Pumping station C as both was found to have high pollution potential (e.g. high TDS/COD/NH3-N/phenol) and then to replace all underground drainage system.
- The GIDC need to explore the SCADA system as practiced in the GIDC area of Vatva for drainage system.
- GIDC need to frame Standard Operating Procedure to address the leakages which should also include the steps required for proper disposal of contaminated sludge removed during de-sludging of drainage lines/manholes.

For the GIDC and GPCB

- Considering the aspect of ghost connection into the drainage network, it is urgent need to be checked all GIDC manholes/ drainage lines by GIDC in presence of GPCB. All necessary action to be taken by GIDC to identify ghost connection particularly in Pumping station-A & Pumping Station-C area. GIDC shall ensure that no ghost connection of any industry to the GIDC drainage system. In case of Ghost connection observed, strict action may be initiated against such industries by GPCB & GIDC.
- GPCB & GIDC may need to frame guideline for stringent action against ghost connections of wastewater discharge into drainage network which should also include provisions of financial penalty.
- GPCB and GIDC need to strengthen the surveillance of the area by adopting proper mechanism and take strict action against the non-complying industries.
- As it is observed that most of the industries in the area do not meet the discharge standard as per CCA and the installed CETP of 40 MLD capacity is presently defunct. Therefore, all necessary measures to be taken for making the Installed CETP in operation. GPCB and GIDC may conduct mass drive for the industries to send the wastewater streams to CETP for treatment. Proper functioning of CETP need to be ensured to meet the discharge standards.

For the GPCB

- GPCB need to frame guideline for limiting maximum storage of High TDS/ High COD wastewater at any point of time in the premises of the industry and other precautionary measures associated with the management of such high COD/TDS wastewater.
- GPCB need to revise the CCA by amending the discharge norms presently prescribed as per CETP inlet norm for the industries to general discharge norms till the CETP is in operation and meets the discharge standards.
- GPCB need to be more vigilant and take strict action against the polluting industries.

All the stakeholders may examine the findings and work on further self-assessment for actions required. The stakeholders may prepare set of actions of their respective concerns with timeline and status which can be updated from time to time and submitted to authorities.

*****

Amit R Thakkar, Scientist-D, CPCB

Falgun M. Modi, RO Bharuch, GPCB

Saket Kumar, Scientist B,CPCB

B.D. Prasad, DEE, GPCB RO Bharuch

Manoj K. Sharma, Scientist B,CPCB

Niraj D. Patel, DEE,GPCB RO Bharuch

Rajendrasinh R. Gaekwad, AEE,GPCB RO Bharuch

Ajay H. Vasava, AEE, GPCB RO Bharuch

ANNEXURE I

MINUTES OF MEETING DATED 20.10.2021 IN REFERENCE TO HON'BLE NGT MATTER OA 60/2021 (WZ) [ARYAVAT FOUNDATION V/S HEMANI INDUSTRIES LTD.]

In reference to the Hon'ble NGT order dated 04.10.2021 in the matter OA 60/2021 (WZ), a meeting was held at CPCB RD Vadodara office on 20.10.2021. Regional Director, CPCB welcomed all the participants and discuss the matter in brief.

The meeting continued with following participants:

S.No.	Central Pollution Control Board, RD Vadodara [Respondent No.3]	Gujarat Pollution Control Board, RO Bharuch [Respondent No. 2]
1.	Shri Amit R Thakker, Scientist D & Chairman of the meeting	Shri Falgun M. Modi, RO Bharuch
2.	Shri Saket Kumar, Scientist B	Shri B.D. Prasad, DEE
3.	Shri Manoj K Sharma, Scientist B	Shri Rajendra Sinh Gaikwad, AEE

The meeting started with discussion on the NGT order dated 04.10.2021 and various actions to be taken based on the NGT order. Excerpt from the said order where direction for Respondent 2 (GPCB) and Respondent 3 (CPCB) is mentioned is reproduced below:

".....18. The Respondent No. 2 in coordination with the Respondent No. 3, shall cause inspection of industrial units which fall under "Red Category" to find out whether they discharge untreated/partly treated effluents into the STPs maintained by the Respondent No. 4 and if any infractions/violations are noted, shall come out with the solutions as well as the assessment of the environmental compensation, to be paid by them. It is also made clear that depending upon the contents of the said report to be filed by the Respondent Nos. 2 & 3, further action would follow against the Respondent No. 1 as well as the other industrial units, in accordance with law.

19. The Respondent No. 5 as well as the jurisdictional Superintendent of Police, shall provide all necessary assistance to Respondent Nos. 2 & 3 to carry out the inspection of the units which come under "Red Category", in the Industrial Estate maintained by the Respondent No. 4....."

Since the matter is related with Dahej industrial estate, the RO Bharuch introduced the industrial zone in detail with following information:

A. GIDC Dahej area in divided into 3 segments, namely Old GIDC (or D-I), D-II & D-III. Moreover, there are other industrial estates nearby the GIDC such as Vilayat GIDC, Saykha GIDC, Dahej SEZ I, Dahej SEZ II etc.
B. There are 117 operational Red category industries in the above area with permission to discharge their effluent either in GIDC drainage or direct discharge through own pipeline at Final Pumping station or discharge to sister concern unit for treatment in ETP and CETP or direct pipeline to final pumping station for discharge into sea. Additionally, several other Red categories industries (115 nos.) are also permitted for Zero Liquid Discharge, discharge to common MEE of BEIL Dahej or Detox Ankleshwar and reuse of treated effluent for gardening purposes.
C. Respondent No. 04 i.e. GIDC has provided underground pipeline drainage with localized pumping stations in various sections for discharge of effluent into sea. The original effluent discharge was 4.5 km into deep sea, however due to choking of pipeline, the present discharge is only 600m in

the sea by a separate line which is discharging into CRZ-IB. The various pumping stations are Pumping Station A, Pumping Station C, Pumping Station D and Vilayat Pumping Station with additional newly installed seven new pumping stations in Dahej D-II & D-III area.

D. In addition, GIDC has provided a final pumping station where effluent from all the above pumping stations except pumping station D are discharged along with discharges from CETP Dahej and 09 industries with individual pipeline connected directly to the final pumping station. The effluent from "Final Pumping Station" FPS is discharged into sea at "Final Disposal Point" FDP (as mentioned in 'C' above). Effluent from Pumping Station D meets in between FPS and FDP. The overall capacity of the drainage pipeline is 90 MLD.

E. There are 02 nos. of CETPs in the above area, namely CETP Dahej and CETP Saykha each with 40 MLD treatment capacity. The effluent from CETP Saykha is presently discharged into pipeline connected to Vilayat Pumping Station. However, CETP Saykha is permitted for direct deep sea discharge. Moreover, both the CETPs are non-operational or partially operational.

F. GPCB also informed about monitoring mechanism and closure directions issued to various industries located in the area in last three years.

Based on the above information, Hon'ble NGT order dated 04.10.2021 and other technical inputs, following approach is decided in the meeting:

1. Joint teams comprising of members from CPCB and GPCB shall carry out the inspections of Red category industries in the area. Based on available manpower & resources, three joint teams will be constituted.
2. Requirement of sampling and analysis of samples was also discussed in detailed. It was decided that sampling will be carried out by the joint team in duplicate. The samples will be sealed. One set of samples will be analysed at GPCB Laboratory and another set will be analysed by any E(P)A approved laboratories through GPCB.
3. As per order inspection of units which fall under "Red Category" to find out whether they discharge untreated/partly treated effluents will be initiated on random basis covering following aspects:
    a. The respondent no.1 in the matter, M/s Hemani Industries Ltd. shall be inspected.
    b. Inspected Industries should represent all possible mode of effluent disposal/discharges practiced in the area.
    c. Priority shall be given to industrial zones with persistent past issues such as industries discharging in Pumping Station A, C and directly in final pumping station etc.
    d. All industries received closure direction due to serious non-compliances in terms of wastewater management in past 3 years by GPCB.
4. The field observations and information to be collected from the industries shall be based on the finalized format attached as Annexure I.
5. As per point no. 19 of the said order, The RO, GPCB shall intimate to the Collector and Superintendent of Police of the area about the NGT order and actions to be carried out by the joint team and requesting for support wherever & whenever required.

The meeting ended with thanks to the chair.

ANNEXURE A-1

1. General Information of the Industry:		
a)	Name & Address	**M/s Meghmani Organics Ltd.,** Plot No. CH-1, CH-2/A, D-2/CH 10/A, GIDC Dahej
b)	Contact Person & Contact Numbers, Fax	Mr. Thomas Fernandes, DGM, Operations Mobile: 6359976401 Mr. Rajendra Rathod, ETP In-charge Mobile: 9099908796
c)	Year of Establishment	2010
d)	CCA Validity	GPCB has issued CCA with validity upto 01.08.2025
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	As informed, during visit the industry was producing following products: • 2,4 D Amine • 2,4 D Acid • Cypermethrin • Meta Phenoxy Benzaldehyde (MPB) • Profenophos • Bifenthrin • 2, 6 DCP • Chlorophenols
g)	Main Raw Materials	Major raw materials for the industry are 2,4 D Acid, DMA, Para Toluene Sulphonic Acid, Toluene, Benzene, Phenol, Chlorine, Caustic lye, HCl, CMAC, MPB, Benzaldehyde, soda Ash etc.
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 927.92 KLPD. B. As per CCA The industry is permitted to consume 2004 KLPD fresh water, sourced through GIDC water supply.

b)	Wastewater segregation with specification of criteria of such segregation (if any)	The industry has segregated the wastewater streams as per following criteria: High TDS: Wastewater with TDS>80,000 mg/l from Cypermethrin process plant. For High TDS wastewater, the industry has provided a treatment comprising of stripper, MEE and ATFD of capacity 125 KLD. Phenol recovery plant: Phenol containing wastewater from phenol based process plants such as 2,4 D amine plant, 2,4 D acid, Di-Chloro phenol etc. is sent to 'Phenol Recovery Plant'. After phenol recovery, the wastewater is sent to ETPs provided for low COD wastewater. As informed, the capacity of phenol recovery plant is 1500 KLD. Low TDS: For the wastewater with TDS<30,000 mg/l from phenol recovery plant (for wastewater for 2,4 D Amine plant) and Meta Phenoxy Benzaldehyde (MPB) plant, the industry has provided two ETPs comprising of biological treatment with common collection tank each with capacity of 800 KLD (total 1600 KLD).
c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided 02 nos. equalization cum collection tank of capacity 450 KL each for low COD wastewater. For the high TDS wastewater, 02 nos. of collection tanks of capacity 60 KL each is provided. For the phenol containing wastewater, the industry has provided 05 nos. of collection tanks of total capacity 1070 KL capacity (individual capacity of 50 kL, 50 Kl, 70 KL, 450 KL and 450 KL). The industry has provided flowmeter at inlet of high TDS wastewater treatment and phenol recovery plant however no flowmeter is provided at inlet of ETP for low TDS wastewater. The industry has provided flowmeter at the outlet of the ETP and at outlet of MEE condensate.

d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry discharged on an average total wastewater of 649.05 KLD. B. As per CCA The industry is permitted to generate 1365 KLD wastewater (industrial: 1335 KLD, Domestic:35 KLD). The industry is permitted to discharge 791 KLD treated wastewater into GIDC drain and *"1 KLD MEE bottom to TSDF"*. As per the CCA, the industry shall reuse 573 KLD treated wastewater.

e)	Wastewater treatment process with capacity and operational status The treatment process for high COD and Low COD were operational during visit. The process brief is provided below: • **For High COD** **Storage tanks→Stripper→MEE→ATFD** As informed, the low boiling condensate from stripper are sent to CHWTSDF. The MEE condensate is sent to collection tank of ETP for treatment. The salt generated in ATFD is sent to CHWTSDF. During visit, the stripper, MEE and ATFD was operational. • **Phenol Recovery Plant** **Collection tanks→Filter press→Underground tank→Filter press→holding tanks→catridge filters→intermediate storage tanks→Resin columns→treated wastewater to collection tank of ETP** The resins adsorbing phenols (in resin columns) are regenerated through caustic solution. The regenerated solution containing Sodium Phenolate is sent back to 2,4 D amine plant for reuse in process. During visit the phenol recovery plant was operational. • **For Low COD** The industry has provided 02 nos. of ETPs with common collection tank and common final treated tank. Both the ETPs have same capacity of 800 KLD and same treatment process. The treatment process for the low COD stream comprises of: **Collection cum Equalization tank (A&B)→Neutralization tanks (I&II)→Primary clarifier→Aeration tank I→Secondary Clarifier I→Aeration tank II→Secondary clarifier II→Holding tank→Holding tank of Old ETP→ACF→Resin Filter→to GIDC drain** The treated wastewater from both ETPs are stored in holding tank of Old ETP and passed through ACF and Resin filter before being discharged into GIDC drain. During visit, the new ETP was operational. As informed, the Old ETP was temporarily non-operational due to maintenance of Primary clarifier.
f)	On site Record keeping During visit, the industry provided updated logbook for ETP, MEE and phenol recovery plant.

g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has provided 02 nos. of guard ponds of capacity 300 KL each.
h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	GIDC drain connected to Pumping Station-A.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	The industry has provided flowmeter at inlet of high TDS wastewater treatment and phenol recovery plant however no flowmeter is provided at inlet of ETP for low TDS wastewater. The industry has provided flowmeter at the outlet of the ETP and at outlet of MEE condensate.

3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server

The industry has provided operational OCEMS at the final outlet of ETP to GIDC drain. The industry has provided connectivity of OCEMS to CPCB/GPCB server.

4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed

During visit, an accumulation of contaminated water was observed behind ETP area, wherein land was dug for road construction. A sample was collected from the accumulated contaminated water to assess its quality.

Accumulation of contaminated water observed behind ETP

5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Inlet of ETP at Collection tank A
B. Inlet of ETP at Collection tank B
C. Outlet of ETP to GIDC drain

D. Contaminated water ponding behind ETP

The analysis results of the samples collected and analysed by GPCB are tabulated below:

Parameters	Inlet of ETP at Collection tank A	Inlet of ETP at Collection tank B	Outlet of ETP to GIDC drain	Contaminated water ponding behind ETP	**GPCB Discharge Standards as per CCA**
pH	<1	1.38	7.13	7.37	5.5-9.0
Colour	50	100	400	400	--
TSS	46	18	**1248**	16	100
Fluorides	3.85	5.3	3.6	0.4	15
Sulphides	10.72	2.72	**7.2**	BDL	5
Ammonical Nitrogen	11.2	165.2	39.2	5.6	50
Sulphate	255	103	537	461	--
TKN	14	190.4	52.64	8.4	--
Nitrate Nitrogen	12.3	11.8	1.8	5.06	--
BOD (3 days at 27^0C)	1194	922	**880**	95	100
COD	5363	4208	**3964**	**405**	250
Chlorides	27233	23610	21290	558	--
Phenolic Compounds	606.28	17.39	**312**	**37**	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	Inlet of ETP at Collection tank A	Inlet of ETP at Collection tank B	Outlet of ETP to GIDC drain	Contaminated water ponding behind ETP	**GPCB Discharge Standards as per CCA**
pH	Highly Acidic	1.44	7.08	7.24	5.5-9.0
Colour	>500	70	>500	>500	--
TSS	250	170	**1570**	**180**	100
Fluorides	BDL	5.1	0.6	BDL	15
Sulphides	20	BDL	**>50**	**8**	5
Ammonical Nitrogen	BDL	146	**66**	BDL	50
Sulphate	240	79	282	432	--
TKN	10	153	72	5	--

Nitrate Nitrogen	6.4	6	BDL	6.4	--
BOD (3 days at 27^0C)	100	730	**760**	**100**	100
COD	388	4039	**3485**	**388**	250
Chlorides	528.6	17015	21444	528.6	--
Phenolic Compounds	33.5	12.6	**>250**	**33.5**	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

- The GPCB analysis results of the sample collected from the final outlet of treated wastewater into GIDC drain reveals that concentration of TSS, Sulphides, BOD, COD & Phenolic compounds exceeds GPCB standards. Similarly, exceedance of TSS, Sulphides, Ammonical Nitrogen, BOD, COD & Phenolic compounds observed in the analysis results by third party laboratory.
- The GPCB analysis results of the sample collected from the contaminated pond reveals that concentration of Phenolic compounds, BOD and COD even exceed the GPCB discharge standards as per CCA for treated wastewater. Similarly, the analysis results by third party laboratory reveals exceedance in concentration of TSS, Sulphides, Phenolic compounds, BOD and COD in comparison to the GPCB wastewater discharge standards.

6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has been issued closure directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 12.08.2016, 30.01.2017, 28.11.2017, 19.06.2018, 30.01.2019 & 23.07.2021.

The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 17.05.2019, 15.02.2020 & 17.07.2020.

7. Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.

- The industry has provided display board at the entry gate of the premises. However the display board was not updated.
- Intense odour of phenol based VOCs was observed in and around the industry during visit.
- The analysis results of samples of final treated wastewater to GIDC drain reveals that concentration of TSS, Sulphides, Ammonical Nitrogen, BOD, COD and Phenol exceeds GPCB discharge norms. Moreover, the concentration of Sulphides and Phenol in the final outlet to GIDC drain is greater than the inlet of ETP in collection tank. This reveals that the industry may be discharging wastewater from phenol based process plants such as 2, 4 D amine, 2,4 D acid, di-chloro phenol etc. without treatment in “Phenol Recovery Plant” and ETP of the industry.
- The industry has stored about 800 MT of hazardous waste in haphazard manner inside the premises out of more than 6000 MT hazardous waste stored inside the industry. The hazardous wastes are stored in open land such as internal roads, open ground etc. Moreover, about 200 MT of phenol based hazardous waste (as informed chlorophenol) in more than 1000 HDPE

drums were stored on open ground inside the premises of the industry. Leakages from the drums on open ground were observed during visit. Such haphazard storage of hazardous wastes (in solid and liquid form) may lead to severe contamination of soil and groundwater in the area.

Hazardous wastes haphazardly stored inside the premises of industry

- The analysis results of accumulated contaminated wastewater in form of ponding on open ground behind ETP even exceeds GPCB discharge norms. Such high concentration of organic contamination reveals that the leakages/spillages from HDPE drums containing phenol based wastewater/chemicals and haphazard storage of hazardous waste has led to accumulated contaminated wastewater ponding. Accumulation of such contaminated wastewater with very high concentration of phenol on open land has potential to contaminate soil & groundwater.
- The industry was again visited on the next day (i.e. 17.11.2021) during random sampling of final outlet of treated wastewater to GIDC drain. The analysis results of final outlet again reveals concentration of COD, BOD, TSS, Sulphide, Nitrate nitrogen exceeding discharge norms. Moreover, during re-visit to the ETP area it was observed that the industry was diluting treated wastewater in treated wastewater holding tank through fresh raw water from a 4 inch pipeline.

The 4 inch pipeline originated from an idle 30 KL tank near the ETP, wherein fresh raw water was being stored through another 2 inch pipeline.

Hence, it can be concluded that the industry is non-complying to wastewater discharge standards and violating the CCA conditions with very high concentration of organic contamination such as COD of 3964 mg/l and Phenol of 312 mg/l. This indicates industry is discharging phenol based wastewater without treatment into GIDC drainage. Furthermore, dilution of treated wastewater from ETP through fresh raw water through hidden pipeline also shows malpractices and noncompliance by the industry. About 800 MT of solid hazardous waste and about 200 MT of liquid hazardous waste/chemical is stored in haphazard way inside the premises of the industry leading to formation of ponding of contaminated wastewater with high concentration of analyzed parameters like Phenol etc. over open ground behind ETP near hazardous waste storage area. Such haphazard storage of hazardous waste has potential to contaminate soil and groundwater in and around the premises of the industry. The industry has previously been issued closure directions on multiple occasions by GPCB in reference to wastewater management. This shows that the industry is a routine violator of environmental norms.

The industry need to improve effluent treatment efficacy and hazardous waste storage and handling measures. The industry need to immediately dispose of solid and liquid hazardous waste stored inside the premises and provide adequate hazardous waste storage facility. The industry need to operate phenol recovery plant effectively to reduce phenol concentration in its treated wastewater.

8. Date of visit	16.11.2021
9. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE A-2

1.	**General Information of the Industry:**		
	a)	Name & Address	**M/s. Bharat Rasayan Ltd.(Old Name:Siris Crop Science Limited),** 42/4, GIDC, DAHEJ, Amod road, Tal: Vagra, Dahej - 392130
	b)	Contact Person & Contact Numbers, Fax	Shri Ajay Gupta—7046500020
	c)	Year of Establishment	2012
	d)	CCA Validity	11/10/2022
	e)	Operational Condition	The industry was operational during inspection
	f)	Present manufacturing Products	As informed, during visit the industry was producing following products: Meta Phenoxy Benzaldehyde, Ethion Technical, Phenthoate Technical, Thiomethoxam Technical, Lambda Cyhalothrin Technical, Flumethrin technical, Metribuzine technical, Clodinafop, Pendimethaline, CMAC, Cypermethrin technical, Alpha Cypermethrin, Bifenthtin.
	g)	Main Raw Materials	Monochloro acetic acid, sulphur, Ferric chloride, chlorine, Acrylonitrile, 3-chloro propionitrile, caustic lye, propargyl alcohol, thionyl chloride, dimethyl formamide etc.
2.	**Wastewater Management**		
	a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record Average Water consumption : 603KLD B. As per CCA • Industrial : 1349 KL/day • Domestic : 120 KL/day • Gardening: 60 KL/day

	b)	Wastewater segregation with specification of criteria of such segregation (if any)	• Process stream (High COD stream) were collected at unit wise and sent to Stripper & MEE followed by VTFD. • low COD stream & condensate from MEE is treated in ETP • Treated water from ETP is further fed to RO Plants and RO permeate is reused in plant and RO reject is fed to MEE.
	c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	Provision of flow meter was provided at final discharge line and RO permeate to utility line.
	d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record The industry has not provided flow meter at the inlet. Based on flow reading of final discharge to GIDC drainage system, average discharge is about 60 KLD. B. As per CCA • 122KLD high COD effluent shall be sent to MEE. • 715 KLD total treated effluent shall be disposed to GIDC sewer line. • 100KLD total domestic wastewater shall be treat in STP and disposed in GIDC drain /Gardening.

	e)	Wastewater treatment process with capacity and operational status • For High COD • For Low COD	LOW COD STREAM: The industry has provided two set of ETPs comprising of Set 01: Primary treatment→ Aeration tank (400 Kl and 100 kl)→ Secondary Clarifier Set 02: Primary Treatment → Aeration Tank (800 Kl) → Secondary Clarifier. Wastewater from secondary clarifier of both the sets fed to Membrane Bio Reactor (MBR Capacity 300 KLD). The industry has provided 05 set of RO plants RO Plant 01: Capacity 150 KL RO Plant 02: Capacity 50 KL RO Plant 03: Capacity 100 KL RO Plant 04: Capacity 200 KL RO Plant 05: Capacity 75 KL Treated wastewater from MBR is fed to RO Plant 01 and 04. Permeate from RO 01 & 04 is further subjected to RO 02 & 05 and again the permeate generated from RO02 & 05 is fed to RO 03. The final permeate is reused in the process and the reject from respective RO is fed to MEE. **High COD/TDS stream:** The industry has provided stripping followed by MEE for High COD stream. The industry has provided 03 MEEs of reported capacity 200 KL, 125 KL (2 Nos.) and VTFD. Condensate from MEE is fed to ETP of low COD stream and salt generated from VTDF is collected and disposed at CHWTSDF. During visit ETP and MEE were found operational.

	f)	On site Record keeping	The industry has provided PLC control system for operation of MEE. Records for the operation of MEE and ATFD/VTFD were shown maintained online. However records for the operation of ETP and RO plant was not maintained properly onsite. Moreover, records for the generation of high COD wastewater from various process plants were reportedly not maintained.
	g)	Provision of any intermittent storage/guard pond etc. before disposal	200KL treated effluent storage holding tank provided before disposal of effluent.
	h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal in GIDC drainage through Pumping Station A.
	i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	Flow meter is provided at final discharge point. PLC control system provided for MEE operation.
3.	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**		TOC meter is provided at final outlet and was found defunct during visit. During visit, algal deposition in the capillary tubes of TOC meter was observed. As informed, online connectivity of OCEMS to GPCB and CPCB is provided.

4. **Details of Effluent Samples collected and analysis results**

Parameters	from collection tank of ETP	from main storm water drainage of unit within premises	from storm water drainage near plant a of MPBD plant	final treated waste water outlet into GIDC drain (outside the premises)	GPCB Discharge Standards as per CCA
pH	6.8	5.89	**12.03**	7.3	5.5-9.0
Colour	425	300	225	250	--
TSS	152	**16040**	**268**	68	100
Fluorides	1.95	3.85	0.8	1.6	15
Sulphides	6.4	72	9.12	BDL	5
Ammonical Nitrogen	210	**742**	14	36.4	50
Sulphate	926	4331	2507	218	--
TKN	232.4	803.6	19	46.48	50
Nitrate Nitrogen	4.41	**78.86**	**117.9**	4.3	50
BOD (3 days at 27^0C)	320	4360	2295	50	100
COD	1490	**19065**	**7463**	214	250
Chlorides	708	7690	12115	302	--
Phenolic Compounds	0.47	**105.5**	**33.58**	0.18	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	from collection tank of ETP	from main storm water drainage of unit within premises	from storm water drainage near plant a of MPBD plant	final treated waste water outlet into GIDC drain (outside the premises)	GPCB Discharge Standards as per CCA
pH	6.88	6.20	11.79	7.09	5.5-9.0
Colour	>500	>500	350	450	--
TSS	347	**>10000**	**1030**	110	100
Fluorides	BDL	BDL	1.6	0.5	15
Sulphides	32	>50	>50	>50	5
Ammonical Nitrogen	158	**195**	12	38	50
Sulphate	908	6076	2294	192	--
TKN	165	**205**	16	45	50
Nitrate Nitrogen	7	**63**	**88.2**	22.3	50

BOD (3 days at 27^0C)	250	**2720**	**2510**	35	100
COD	1307	**13622**	**13226**	146	250
Chlorides	747.5	8306	14749	272	--
Phenolic Compounds	0.8	88	73	BDL	5

The Analysis of samples reveals that the sample collected from final discharge point found meeting the discharge standard except for TSS which slightly exceeds. However, high concentration of COD :19065 mg/l, Phenol:105.5 mg/l, BOD: 9360 mg/l, Ammonical Nitrogen: 742 mg/l was found in main storm water drain. Similarly high concentration of measured parameters and high alkaline wastewater was observed in another drain.

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	• Acidic spillage was observed on road area near Plant A. • Accumulated acidic and alkaline wastewater was found at many locations in tank farms in the premises. • Alkaline wastewater was observed in storm water drain near Plant A of MPBD plant area. • High black coloured contaminated wastewater was observed in main storm water drain.
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 20/10/2016, 08/10/2018 & 22/11/2018.
	Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc. • The industry has provided digital display board at the entry gate. During visit the industry, ETP, MEE plant was found operational. • The team has collected grab sample of wastewater from the final discharge point into GIDC drainage network. The Analysis of samples reveals that the sample collected from final discharge point found meeting the discharge standard except for TSS which slightly exceeds. • The team has observed accumulation of colored water near the boundary of the premises. The team has checked the location from inside of the industry and found that the portion of drain was dry and there was no discharge during visit. It was informed that the storm water drain was recently closed after monsoon.  	

Portion of drain outside the premises where accumulated wastewater observed	*Portion drain inside of the industry*

- The team has traced the entire storm water drain and it was found that the storm water drain has accumulated high black coloured contaminated wastewater in the portion of main storm water drain from ETP to GIDC fresh water tank inside the premises. It is worth to mention that, the storm water drain was meant for discharge of rainwater from the industry during monsoon and should remain dry during other seasons. Grab sample of wastewater was also collected and the analysis results show high organic contamination.

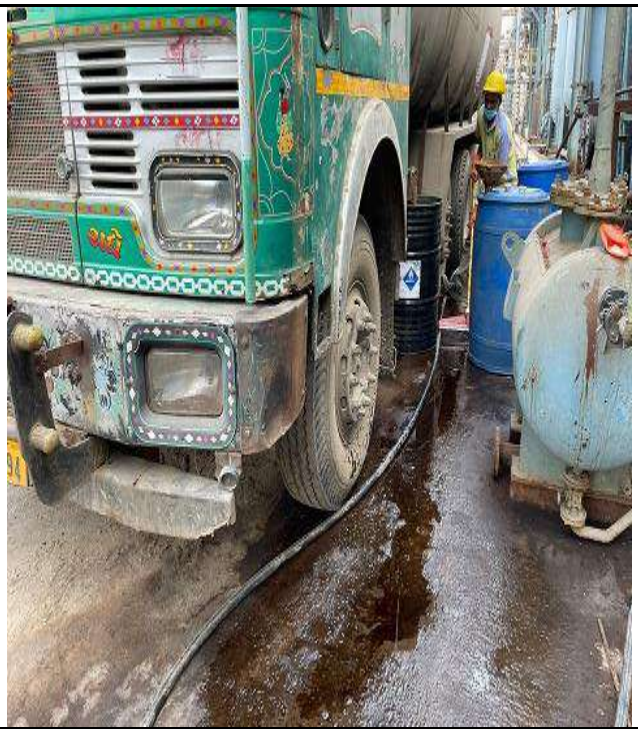
Portion of main storm water drain having COD > 19000 mg/l

- The Analysis of sample collected from main storm water drain reveals that the sample collected high concentration of analsysed parameters like COD :19065 mg/l, Phenol:105.5 mg/l, BOD: 9360 mg/l, Ammonical Nitrogen: 742 mg/l etc. Similarly high concentration of measured parameters and high alkaline wastewater was observed in another drain. No permanent provision for collection of wastewater was observed. Such condition of high contaminated wastewater into the storm water drain has potential of runoff from storm water drains outside the premises.
- During visit, spillage of wastewater was observed on road area near Plant A area near main storm water drain. The pH of wastewater was checked and found acidic. No explanation/reason regarding the incidence of such spillage was provided by the industry.

- The team has checked pH of accumulated wastewater in the storm water drain near plant A and was found alkaline. The team collected grab sample of wastewater from the drain and found having COD of 13,226 mg/l with pH 11.79. The analyzed parameter shows high organic contamination.

- During visit accumulation of wastewater/material in tank farm area was observed at many locations. The accumulated wastewater/material was found acidic at some place and alkaline at some place.

- During visit, one tanker filled with phenol was observed in tank farm area. Leakage of phenol from the tanker bottom was observed. However, there was no any corrective action taken by the industry. After the observation, the industry started taking action.



- Unit has provided wastewater collection tank for storage of wastewater generated from process in their all production plant, during visit oozing of pinkish colored water near the storage tank of high COD wastewater was observed.

- During visit, Effluent treatment system comprising of ETP, Stripper followed by MEE, ATFD & RO were found in operation. Separate authorization of the generation and disposal of low boiling stream from stripping of high COD wastewater were not taken by the industry.
- The industry has taken temporary permission for sending 30KLD of concentrated/High COD stream of industrial effluent to CMEE of Detox India Pvt Ltd, Ankleshwar vide GPCB letter dated 30.06.2021 for the period of six months.
- The industry has installed incinerator for disposal of concentrated wastewater, however incinerator is found in not in operation. As informed, the industry has not operated the incinerator since installation and now dismantling this incinerator.
- The industry has provided ETP with capacity 300KLD against the permitted generation quantity is 715 KLD as per CCA.
- The industry has provided many collection tanks in the ETP area. The collection tanks were having variety of wastewater in physical appearance. Nomenclature, records and reason for such collection and storage were not provided by the industry.
- VOC odour was sensed around collection tanks, primary treatment section of High COD/ high TDS wastewater, production plant and tank farm area.
- The industry manufactured CMAC. As informed, acidification of high COD stream of wastewater generating from plant need to be carried out to separate residue (high organic tarry type sludge) in the collection tank. It was observed that the industry carry out such operation manually through nutch filter. The drains were when opened. Emission of VOCs and eye irritation were felt near the area. Handling of such high organic residue, addition of acid, working in such hazards condition without proper safety needs improvement. Provision of detection of concentration of VOCs and HCs may be provided

with safety alarm.

- During visit, Hazardous waste was found haphazardly stored inside the storage shed. The storage shed was covered however leachate collection system is not provided. As informed, present stock of about 98.529 MT of process waste/waste residue and about 3000 MT of total landfillable waste were stored.


- In addition, drums containing HW found stored in open area inside the premises. Physical condition of some of the drums were dilated/corroded and leakage from bottom from some of drums. Even some drums were found open from top. In total storage of about 98.529 MT of various HW including drums were found stored outside the shed at various locations. Looking to the site conditions of high COD and Phenolic wastewater into the main storm water drains and mismanagement of HW has potential of soil and ground water contamination in and around the premises.


	• As per condition of CCA, "*the unit shall be required to make storage facilities to store the effluent for atleast 48 hours by providing acid proof brick lined impervious tanks/ HDPE tanks*", However, the industry has provided only one storage tank of 200 KL capacity against the required capacity of 1430KL (the permitted discharge quantity is 715 KLD). Hence, it can be concluded that the industry found meeting the discharge standards except for TSS which slightly exceeds from the sample of wastewater collected from final outlet. However, high concentration of COD :19065 mg/l, Phenol:105.5 mg/l, BOD: 9360 mg/l, Ammonical Nitrogen: 742 mg/l was found in main storm water drain. Similarly high concentration of measured parameters and high alkaline wastewater was observed in another drain inside the premises. The storm water drains should be dry except during rainfall and no contaminated runoff is even allowed to discharge during rains. As no permanent arrangement is provided for the pumping of contaminated wastewater from storm water drain to ETP, the industry need to take immediate action to remove contaminated wastewater from main storm water drains, tank form area and treat it as per the requirement. The overall mismanagement of acidic and alkaline material/wastewater, leakages of phenolic material on the approach road having slope towards the storm water drain, highly contaminated wastewater in the storm water drain shows gross negligence towards the handling and management of chemicals. Such condition of contamination in the storm water drain has potential of contaminated runoff from the premises. The installed capacity of ETP is less than the consented wastewater generation. The industry need to provide ETP of adequate capacity as per the total wastewater generation mentioned in the CCA or amend CCA as per actual generation. The OCEMS installed found defunct during visit. The industry found storing HW in open area, the HW storage shed provided was not having proper leachate collection and transfer to ETP facility. In total storage of about 98.529 MT of various HW including drums were found stored outside the shed at various locations. Looking to the site conditions of high COD and Phenolic wastewater into the main storm water drains and mismanagement of HW has potential of soil and ground water contamination in and around the premises. Mishandling of High COD wastewater, leakages, storage of high organic residue from CMAC plant in open etc. also resulted for VOCs which was sensed during visit. The industry also not compliance with CCA condition to make storage facilities to store the effluent for atleast 48 hours. The industry need to take adequate measures for compliance of observations and CCA conditions.	
7.	**Date of visit**	16/11/2021
8.	**Name of Visiting Officials**	Amit Thakkar, Sc. D-CPCB N. D. Patel, DEE-GPCB

ANNEXURE A-3

1.	**General Information of the Industry:**		
		Name & Address	**M/s. Hemani Industries Ltd,** CH-5,E-362 GIDC Dahej, Tal: Vagra, Bharuch
		Contact Person & Contact Numbers, Fax	Shri Somkumar Shukla – 8155966663 Shri Viral Pastagia -9825107212
		Year of Establishment	2010
		CCA Validity	14/07/2025
		Operational Condition	The industry was operational during inspection.
		Present manufacturing Products	As informed, during inspection production of CMAC (D. V. Tech), MPBD, Deltamethrin Tech, Metamitron Tech, Bifenthrin, Alphamethrin, Permethrin, Dicamba are under production.
		Main Raw Materials	Following are the major raw materials used by the industry: Bromine, Chlorine, EDC, AlCl3, Formic Acid, Sodium Thiosulfate, Phenol, Nitro Benzene, Toluene, 3 – Bromo Nitrobenzene, Tetra butyl Ammonium Bromide, Methanol, Lambda Cyhalothric Acid, Thionyl Chloride (TC), D M Formamide (DMF) etc.
2.	**Wastewater Management**		
		Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record Average Water consumption : 1892.3 KLD B. As per CCA • Industrial : 2181 KL/day • Domestic : 202 KL/day • Others: 55 KL/day • Gardening: 68 KL/day
		Wastewater segregation with specification of criteria of such segregation (if any)	• Process stream (High COD stream) from certain units were collected at unit wise and sent to MEE for further treatment. • low COD stream & condensate from MEE is treated in ETP (capacity-1018 KLD) • Treated water from ETP is further fed to RO and RO permeate is reused in plant and RO reject is treat in MEE.

		Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	Storage tanks for collection of wastewater were provided in following Plant: 1. CMAC 2. Cypermethrin 3.MPBAD 4.Metamitron Tech 5.Delthmethrin Tech 6.Dicamba manufacture in MPP 7. Cypermethrin (T) & Beta/Zeta/Theta Isomers (T) Provision of flow meter was not provided. Proper records for the collection and treatment of wastewater and operation of MEE/ATFD were not available.
		Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record The industry has not provided flow meter at the inlet. Based on flow reading of final discharge to GIDC drainage system, average discharge is about 371 KLD. B. As per CCA • 344KLD high COD effluent shall be sent to MEE. • 50KLD of concentrated/High COD stream of industrial effluent from process shall be sent to incinerator • 646 KLD total treated effluent shall be disposed to GIDC sewer line • 145KLD domestic wastewater shall be sent to biological treatment of ETP.

		Wastewater treatment process with capacity and operational status • For High COD • For Low COD	The industry has segregated waste water generated from the various operations into following streams and provided separate treatment schemes. **High COD/TDS stream:** Pretreatment comprising of acidification and neutralization is provided for wastewater generated from manufacturing products of CMAC. Three Common MEE (capacity 100 KLD, 100 KLD and 300 KLD) followed by ATFD (25 KLD) is provided for high COD/TDS stream generated from various processes. Salt generated from ATFD is disposed in CHWTSDF. Condensate generated from MEE and ATFD is feed to RO plant. RO permeate is reportedly reused in the process and RO reject is feed to the common MEE. As informed the industry has installed RO plant with capacity 200KLD since 2018, however in corporation for same is not found in CCA. Direct ATFD (VTFD) is provided for Mother liquor generated during manufacturing of Dicamba. Salt generated from VTFD is disposed in CHWTSDF. Incinerator (8.5 TPD solid residue and 30 KLD liquid waste) and is provided for high COD stream generated from Metramethin plant. **Low COD/TDS stream:** Low COD streams including domestic wastewater generated is treated in the ETP (reported installed capacity : 1008 KLD, operating capacity: 600 KLD) comprising of collection tank→ primary treatment→ aeration tank→ secondary clarifier→ filter feed tank→ pressure sand filter→ activated carbon filter→ holding tank (350 KLD)→ HDPE Tank (10KL)→disposal to GIDC.
		On site Record keeping	Proper records for the operation of ETP, MEE, incinerator, ATFD etc. were not available onsite. Records for the generation of high COD wastewater process plant wise were reportedly not maintained.
		Provision of any intermittent storage/guard pond etc. before disposal	HDPE tank of 10KL capacity is provided near boundary wall before final discharge into GIDC drainage network.

		Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal in GIDC drainage through Pumping Station A.
		Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	Flow meter is provided at final discharge point. However, flow meter at inlet to ETP, inlet to MEE feed tank from various process units etc. are not provided.
3.	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**		TOC meter (SUMAZDUE MAKE) is provided at final outlet and was found operational during visit. During Visit value of TOC displayed on the TOC meter was 68.04 mg/l. However, online connectivity of OCEMS to GPCB/CPCB is not provided. 

4.

Details of Effluent Samples collected and analysis results
Two sample collected from final discharge & collection tank of ETP (Low COD)
GPCB analysis report

Parameters	**Mixed Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	6.29	6.2	5.5-9.0
Colour	400	70	--
TSS	278	26	100
Fluorides	3.6	0.3	15
Sulphides	114	BDL	5
Ammonical Nitrogen	20.16	BDL	50
Sulphate	942	1424	--
TKN	30.8	7.84	50
Nitrate Nitrogen	26.56	64.1	50
BOD (3 days at 27^0C)	292	85	100
COD	1296	**356**	250
Chlorides	3058	6940	--
Phenolic Compounds	4.69	BDL	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	**Mixed Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	6.73	6.27	5.5-9.0
Colour	>500	100	--
TSS	460	30	100
Fluorides	0.89	2.2	15
Sulphides	73	BDL	5
Ammonical Nitrogen	23	BDL	50
Sulphate	1432	2412	--
TKN	33	4	50
Nitrate Nitrogen	8.5	**54.4**	50
BOD (3 days at 27^0C)	330	72	100
COD	1232	**368**	250
Chlorides	3151	6826	--
Phenolic Compounds	3.6	BDL	5

Note: all values are reported in mg/l except pH and color

- Analysis of samples reveals that the sample collected from final discharge point exceeds the discharge standard for COD and Nitrate N.

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	During visit no bypass/ponding/accumulation of wastewater inside or outside the premises was observed.
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	The industry has been issued closure directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 14/08/2017, 14/11/2018, 30/01/2019, 22/08/2019 and issued closure direction under section 5 of the Environment Protection Act-1986 for violation of Hazardous waste Rule-2016 by GPCB on following dates in last five years: 01/02/2017. The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 03/05/2019, 04/05/2021, 19/07/2021 & 15/09/2021.
7.	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.**	
	• The unit has provided display board outside the premises. However, the display board was not updated.  • During visit ETP for low COD wastewater, 02 MEEs, ATFD and incinerator was found operational. • During visit foaming and scum deposition at the top of clarifier was observed.	

- The installed capacity of incinerator is 30 KLD however, as per CCA generation and disposal of 50 KLD of high COD wastewater through incinerator is permitted. The installed capacity of incinerator is less than the permitted quantity.
- During visit, huge quantity of Hazardous waste found stored inside the storage shed and also haphazardly stored outside the shed. As informed, present stock of about 2500 MT of MEE salt, 200 MT of ETP sludge stored for disposal of CHWTSDF. In addition drums containing incinerable HW (more than 500 drums) found stored in open area inside the premises. Physical conditions of some of the drums were dilapidated/corroded. In total about 100 MT of hazardous waste were found stored haphazardly at various locations inside the premises of the industry.

- As informed, acidification of stream of wastewater generating from CMAC plant containing high COD need to be carried out to separate residue (high organic tarry type sludge) in the collection tank. It was observed that the industry carry out such operation manually. The tanks when opened emit huge VOCs. The drains carrying such wastewater are also open. During visit, VOC odour and eye irritation felt by the team. Manual handling of such high organic residue, addition of acid, working in hazards condition without proper safety needs improvement.

During visit, one of the VOC meter provided near the area showing 282ppm in the meter and Hydro carbon meter was not operational. Physical condition of collection tank was found corroded. Spillage of such residue and wastewater observed near the plant.

- Records for the generation of such high COD wastewater was not maintained by the unit. It was informed that after acidification and removal of sludge, caustic is added and the wastewater is fed to MEE. Records of treatment and disposal of individual such streams at MEE feed tank were also not maintained properly.
- It was informed by GPCB that there was an accident of fire at the MEE feed tank to one 100 KLD MEE. This may be due to high organic/solvent accumulation in the MEE feed tank. The industry need to maintain proper records of generation and operation of MEE to avoid such accidents in future. During visit the 100 KLD MEE was not operational. However, remaining

	both the MEE was operational. • The unit has provided hazardous waste storage sheds for storage of MEE salt and ETP sludge. Handling and storage hazardous waste found unsatisfactory in view of spillage of colored wastewater, no proper provision for collection of leachate and runoff from the storage area etc.  • During visit, leakages from pump glands and spillage observed on floor in MEE area and other plant area inside the premises.  • During visit it was observed that the industry was sending drums containing HW to CHWTSDF loaded in the truck. It was found that the drums were not labeled with the type, quantity and category of HW.

- The industry has obtained CCA for manufacturing of various products and Captive power plant. However, as informed there are many such products like Thionyl chloride, sulphur chloride, acid chloride, CPP, fungicides, 2,5 DCP, sulfentrazone etc. which the industry is presently not manufacturing and the requisite manufacturing facility is also not available. Therefore the industry needs to apply of amendment in CCA accordingly.
- As per condition of CCA, "*the unit shall be required to make storage facilities to store the effluent for atleast 48 hours by providing acid proof brick lined impervious tanks/ HDPE tanks*", However, the industry has provided only one storage tank of 350 KL capacity against the required capacity of 1292 KL (the permitted discharge quantity is 646 KLD).

Hence, it can be concluded that the industry is discharging wastewater to GIDC drain without complying with CCA discharge norms. Foaming and scum deposition at the top of clarifier was observed The industry need to operate ETP properly to meet the discharge standards. The installed capacity of incinerator is less than the permitted quantity. The industry need to provide adequate capacity of incinerator and operate it efficiently. The industry found storing HW in open area, the HW storage shed provided was not having proper leachate collection and transfer to ETP facility. Present stock of about 2500 MT of MEE salt, 200 MT of ETP sludge stored for disposal of CHWTSDF. In addition drums containing incinerable HW (more than 500 drums) found stored in open area inside the premises. Physical conditions of some of the drums were dilapidated/corroded. In total about 100 MT of hazardous waste were found stored haphazardly at various locations inside the premises of the industry. Mishandling of High COD wastewater, leakages, storage of high organic residue from CMAC plant in open etc. has potential to contaminate soil and groundwater in and around the premises of the industry. Moreover, it has also resulted in release of VOCs observed during visit. Records for the generation of high COD wastewater was not maintained by the unit. The industry is not complying with CCA condition to provide guard pond to store the wastewater for atleast 48 hours. The industry need to take adequate steps to comply with the CCA conditions, provide proper storage facility of HW and dispose the presently stored HW as per the CCA conditions.

8.	**Date of visit**	25/10/2021

9.	**Name of Visiting Officials**	Amit Thakkar, Sc. D-CPCB F. M. Modi, RO-GPCB N. D. Patel, DEE-GPCB

ANNEXURE A-4

1.	**General Information of the Industry:**		
		Name & Address	**M/s Insecticides India Ltd.,** Plot no. CH-21, GIDC Dahej, Tal: Vagra, Bharuch
		Contact Person & Contact Numbers, Fax	Shri. S A KHAN – 8866177612 Shri. Anil Gupta -- 7600021054
		Year of Establishment	2011
		CCA Validity	30/03/2026
		Operational Condition	The industry was operational during inspection.
		Present manufacturing Products	As informed, during inspection Attrazine and Chlorpyriphos are under production.
		Main Raw Materials	Toluene, Cynauric Chloride, Isopropyl Amine, Mono ethyl Amine, Soda Ash, Water with Caustic Soda, Caustic lye, NaTCP, DETC, EDC, Catalyst etc.
2.	**Wastewater Management**		
		Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record Average Water consumption : 106 KLD B. As per CCA Total water consumption 280KLD. (Domestic-25KLD, Industrial-235KLD and Gardening-20KLD)

		Wastewater segregation with specification of criteria of such segregation (if any)	• Concentrated /high salt stream containing heavy inorganic & organic load stream of industrial effluent from process (washing) collected and sent to the evaporation system (MEE) after primary treatment. • Concentrated stream of industrial effluent manufacturing process containing organic and pesticides residue collected and sent along with highly concentrated stream of MEE for incinerator at on site incinerator. • Biodegradable industrial effluent along with domestic waste water (sewage) is treated in ETP for primary, secondary and tertiary treatment
		Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	Storage tanks for collection of high COD wastewater are mentioned bellow: MEE Feed Tank 14 KL Incinerator Feed Tank 10 KL In addition the industry has stored wastewater into the UASB reactor which is not in operation since long.

		Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record The industry has not provided flow meter at the inlet. However, the industry has submitted records of wastewater generation based on flow reading of final discharge to GIDC drainage system, average discharge is about 72 KLD. B. As per CCA • 35KLD of concentrated/high salt stream containing heavy inorganic & organic load stream of industrial effluent from process (washing) shall be sent to the evaporation system (MEE) after primary treatment condensate from MEE shall be reused back in cooling tower. • 30KLD of concentrated stream of industrial effluent manufacturing process containing organic and pesticides residue shall be sent along with 2KLD of highly concentrated stream of MEE for incinerator at on site incinerator. • 62KLD of biodegradable industrial effluent along with domestic wastewater- 20KLD will be sent to ETP for primary, secondary and tertiary treatment after treatment the treated effluent shall be sent for disposal in to GIDC drainage.

		Wastewater treatment process with capacity and operational status • For High COD • For Low COD	The industry has segregated waste water generated from the various operations into following streams and provided separate treatment schemes. **High COD/TDS stream:** • Concentrated /high salt stream containing heavy inorganic & organic load of industrial effluent from process is fed to the evaporation system (MEE-2KL/hr) along with ATFD. MEE condensate is reused in cooling tower. • Concentrated stream of industrial effluent manufacturing process containing organic and pesticides residue with highly concentrated stream of MEE is incinerated on captive incinerator. During visit both MEE and incinerator were not in operation. **Low COD/TDS stream:** • ETP (reported installed capacity-500KLD) is provided for treatment of Biodegradable industrial effluent along with domestic waste water (sewage). • The ETP comprises of Oil & Grease trap→ collection tank→ neutralization tank→chemical dosing tank→ flash mixer→flocculation chamber→ primary settling tank→ aeration tank→ secondary settling tank→ filter press (dewatering unit)→ sludge sump→ treated effluent sump (100 KLD) →disposal to GIDC drainage system leading to pumping station A.
		On site Record keeping	Proper records for the operation of ETP, MEE, incinerator, ATFD etc. were not available onsite.
		Provision of any intermittent storage/guard pond etc. before disposal	Guard pond of 100KL capacity is provided before final discharge into GIDC drainage network.
		Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal in GIDC drainage through Pumping Station A.

		Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	Flow meter is provided at final discharge point. However, flow meter at inlet to ETP, inlet to MEE feed tank from various process units etc. are not provided.
3.	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**		TOC meter is provided at final outlet and was found not in operational during visit. Connectivity of OCEMS to GPCB/CPCB is not provided.

4. **Details of Effluent Samples collected and analysis results**

Two sample is collected from 1) from final treated waste water discharge point and 2) from collection tank of low COD

GPCB analysis report

Parameters	**Collection tank of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	7.83	7.42	5.5-9.0
Colour	300	70	All efforts shall be made to remove colour and unpleasant odour as far as practicable.
TSS	48	20	100
Fluorides	5.7	3.7	15
Sulphides	1.92	<1	5
Ammonical Nitrogen	14	2.24	50
Sulphate	199	354	1000
TKN	20.16	17.9	--
Nitrate Nitrogen	3	**128.2**	50
BOD (3 days at 27^0C)	148	39	100
COD	468	177	250
Chlorides	1373	**1273**	600
Phenolic Compounds	<0.1	BDL	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	**Collection tank of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	8.29	7.48	5.5-9.0
Colour	450	80	All efforts shall be made to remove colour and unpleasant odour as far as practicable.
TSS	70	50	100
Fluorides	1.6	1.3	15
Sulphides	7	BDL	5
Ammonical Nitrogen	16	BDL	50
Sulphate	191	518	1000
TKN	25	7	--
Nitrate Nitrogen	1.5	**83.2**	50
BOD (3 days at 27^0C)	116	48	100
COD	420	224	250
Chlorides	1384	**1243**	600
Phenolic Compounds	0.13	BDL	5

Note: all values are reported in mg/l except pH and color

The analysis results of the sample collected from the final outlet of treated wastewater into GIDC drain reveals that concentration of Nitrate Nitrogen and Chloride exceeds GPCB standards.

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	No bypass/ponding/accumulation of wastewater inside or outside the premises was observed.
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	The industry has been issued closure directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 30/01/2019, 26/11/2020 and 11/05/2021. The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 02/04/2018.
7.	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.**	
8.	• The industry has provided display board outside the premises. However, the display board was not updated. • During visit ETP for low COD wastewater is found in operation. However, only one aeration tank was functional. As informed, the capacity of ETP is more than the present generation of low COD wastewater stream. • The industry has provided two MEEs (Old with Capacity-2KL/hr and new with capacity 250KLD (new)) and incinerator (Capacity-3KL/hr) for high COD streams. Both the MEE and incinerator were found not in operation during visit. The industry has not yet obtained CCA for new MEE and installed capacity of existing MEE is less than the high COD wastewater generation mentioned in the CCA. • During visit, More than 800 drums (200lt capacity each) about 160MT containing incinerable HW/ products/In-process material found stored in open area inside the premises. The drums were kept without proper nomenclature. Seepage observed from bottom of drums at many places.  	

- As per condition of CCA, "*the unit shall be required to make storage facilities to store the effluent for atleast 48 hours by providing acid proof brick lined impervious tanks/ HDPE tanks*", However, the industry has provided only one storage tank of 100 KL capacity against the required capacity of 164 KL (the permitted discharge quantity is 82.2 KLD).

Hence, it can be concluded that the industry is discharging wastewater to GIDC drain without complying with CCA discharge norms. The industry need to take adequate steps to operate ETP to meet the discharge standard. The industry found stored drums containing various hazardous wastes, the drums were not labeled and found leakage, spillage of hazardous waste due to leakages of drums etc. shows violation towards the overall environmental management. The HW storage shed provided was not having proper leachate collection and transfer to ETP facility. More than 800 drums (200lt capacity each) about 160MT containing incinerable HW/ products/In-process material found stored in open area inside the premises. Such haphazard storage and handling of hazardous waste has potential for contamination of soil and groundwater in and around the premises of the industry. The industry is not compliance with CCA condition to make storage facilities to store the effluent for atleast 48 hours. The industry need to take adequate steps to comply with the CCA conditions, provide proper storage facility of HW. The industry need to dispose the presently stored HW as per the CCA conditions.

9.	**Date of visit**	25/10/2021
10.	**Name of Visiting Officials**	Amit Thakkar, Sc. D-CPCB F. M. Modi, RO-GPCB N. D. Patel, DEE-GPCB

ANNEXURE A-5

1.	**General Information of the Industry:**		
	a)	Name & Address	**Meghmani Limited Liability Partnership,** D-2/CH-3, GIDC, DAHEJ, TAL: VAGRA, DIST: BHARUCH
	b)	Contact Person & Contact Numbers, Fax	Shri Rutesh Shah (Unit Head) Mobile: 9099910601
	c)	Year of Establishment	2011
	d)	CCA Validity	16.06.2022
	e)	Operational Condition	The industry was operational during visit.
	f)	Present manufacturing Products	As informed, during visit the industry was producing Paracetamol and Para Amino Phenol.
	g)	Main Raw Materials	Following are the major raw materials used by the industry: Para Nitro Chloro Benzene, NaOH lye, Hydrogen gas, Hydrochloric Acid, Para Amino Phenol, Acetic Anhydride, Carbon etc.
2.	**Wastewater Management**		
	a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for last six month is 87.1 KLD. B. As per CCA The industry is permitted to consume 395 KLPD fresh water through GIDC water supply.
	b)	Wastewater segregation with specification of criteria of such segregation (if any)	The wastewater generated from process plant, cooling tower blowdown and Reject of RO provided for fresh water supply is treated in ETP of capacity 250 KLD.
	c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided collection cum equalization tanks of total capacity 150 KL for storage of wastewater in ETP. The industry has provided flow meter at inlet and outlet of ETP.
	d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record The average wastewater discharge by the industry to GIDC drain is 78.55 KLD. B. As per CCA The industry is permitted to generate 382 KLD industrial wastewater and discharge 355 KLD into GIDC drainage.

	e)	Wastewater treatment process with capacity and operational status The industry has provided ETP of capacity 250 KLD with following treatment process: Oil & Grease Trap→Collection Cum Neutralization Tank (02 nos.)→Flash mixers→Primary settling tank→Aeration tank→ Secondary Clarifier→Underground tank→Filter press→Underground tank→PSF & ACF→Final treated tank→Disposal tank HDPE→GIDC drain The ETP was operational during visit.	
	f)	On site Record keeping	Proper records for the operation of ETP were not available onsite.
	g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has provided treated wastewater tank of capacity 85 KL
	h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal in GIDC drainage through pumping station A.
	i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	Flow meter is provided at inlet and outlet of ETP.
3.	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server** TOC meter is provided at final outlet and was found operational during visit. However, online connectivity of OCEMS to GPCB/CPCB is not provided.		

4.

Details of Effluent Samples collected and analysis results

GPCB analysis report

Parameters	from Equalization tank of ETP	Final treated wastewater holding tank of ETP	GPCB Discharge Standards as per CCA
pH	11.69	**9.28**	5.5-9.0
Colour	2125	875	--
TSS	174	54	100
Fluorides	2.15	2.65	15
Sulphides	5.6	BDL	5
Ammonical Nitrogen	19.04	2.8	50
Sulphate	231	312	--
TKN	25.76	7.28	50
Nitrate Nitrogen	18.87	9.57	50
BOD (3 days at 27^0C)	1260	54	100
COD	5057	219	250
Chlorides	1006	3192	--
Phenolic Compounds	0.51	0.17	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	from Equalization tank of ETP	Final treated wastewater holding tank of ETP	GPCB Discharge Standards as per CCA
pH	11.46	8.08	5.5-9.0
Colour	>500	>500	--
TSS	320	160	100
Fluorides	BDL	BDL	15
Sulphides	>50	BDL	5
Ammonical Nitrogen	18	BDL	50
Sulphate	37	216	--
TKN	22	8	50
Nitrate Nitrogen	23.5	41	50
BOD (3 days at 27^0C)	1075	45	100
COD	5120	160	250
Chlorides	956	3303	--
Phenolic Compounds	2.56	0.22	5

Note: all values are reported in mg/l except pH and color

- As per GPCB analysis results value of pH exceeds the range for pH prescribed in the CCA discharge standards.

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	During visit on 17.11.2021, it was observed that near ETP and spent dilute acetic acid handling area, the industry has provided 1.5 inch drainage pipeline leading to GIDC storm water drain. Again during visit of GPCB team on 20.11.2021 in reference to complaint received from GIDC, the industry was found discharging contaminated water/wastewater into GIDC storm water drain through a 6 inch ghost connection pipeline.
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.** The industry has been issued closure directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 30.01.2019. The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 03.05.2019.	
7.	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.** • The industry has provided display board at the entry gate of the premises, however the display board was not updated. • As per condition of CCA, "*the unit shall be required to make storage facilities to store the effluent for atleast 48 hours by providing acid proof brick lined impervious tanks/ HDPE tanks*", however, the industry has provided only one storage tank of 95 KL capacity against the required capacity of 790 KL (the permitted discharge quantity is 395 KLD). • Looking to the manufacturing process (mass balance), last six month production data, waste water generation data and dilute acetic acid generation, the data submitted by unit is contradictory, as unit has shown less generation of wastewater and acetic acid. • The industry has provided acetic acid recovery plant for recovery of spent acetic acid generated during paracetamol manufacturing process. As per CCA, the industry is permitted to sell dilute acetic acid to authorized reusers under Rule 9 of the Hazardous Waste Rules, 2016. On verifying the records of selling of dilute acetic acid, it was observed that the industry is selling to unauthorized industries without MoU and without proper manifest system of GPCB i.e. through "XGN portal". • During visit it was observed that the industry has provided uncovered sludge drying beds and overflow of sludge drying bed to nearby road and storm water drain was observed.	

<table>
<tr><td></td><td colspan="2"> 

During visit on 17.11.2021, it was observed that near ETP and spent dilute acetic acid handling area, the industry has provided 1.5 inch drainage pipeline leading to GIDC storm water drain. Again during visit of GPCB team on 20.11.2021 in reference to complaint received from GIDC, the industry was found discharging contaminated water/wastewater into GIDC storm water drain through a 6 inch ghost connection pipeline.

Hence, it can be concluded that the industry in non-complying to CCA discharge standards for pH, OCEMS connectivity, conditions related with management of hazardous waste such as dilute acetic acid. The industry is selling dilute acetic acid categorized under Rule 9 of Hazardous waste Rules without following proper manifest system and to unauthorized end users. The industry has not connected OCEMS at ETP outlet to CPCB/GPCB server. Further, the industry was found discharging contaminated water/wastewater in GIDC drain through a ghost pipeline during visit by GPCB team. Therefore, the industry need to improve ETP sludge storage facility and improve handling of dilute acetic acid as per rules and, provide connectivity of OCEMS to CPCB/GPCB server. The industry also need to comply to CCA discharge conditions, provide arrangement for treatment of contaminated wastewater in storm water drains inside the industry and stop any discharges of contaminated wastewater into GIDC drain through ghost connections.</td></tr>
<tr><td>8.</td><td>Date of visit</td><td>17.11.2021</td></tr>
<tr><td>•</td><td>Name of Visiting Officials</td><td>Saket Kumar, Sc. B, CPCB
N. D. Patel, DEE, GPCB</td></tr>
</table>

ANNEXURE A-6

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Meghmani Novotech Pvt. Ltd.** (Old Name: M/s Meghmani Speciality Chemicals LLP) Plot No: CH-22, GIDC Estate-Dahej, Ta: Vagra, Dist: Bharuch**.**
b)	Contact person & Contact numbers,Fax etc.	Siddh Desai ETP Manager, Mob.No.9016602289
c)	Year of Establishment	2019
d)	CCA Validity	CCA is valid up to **15.01.2026**
e)	Operational status of the industry	During inspection, industry was in operation.
f)	Present manufacturing products	During the visit unit was manufacturing following products- **1.** BCMB
g)	Main raw materials	**Raw Materials** 1. Biphenyl 2. $(CH_2O)_2$ 3. H_2SO_4 4. HCl 5. Zinc Chloride 6. Ether 7. Toluene **8.** Methanol
2.	**Waste water management:**	
a)	Quantity of fresh water consumption and its source (GIDC/Bore well /Tankers)	**A. : Based on past 07 months records** Based on past 07 months' (April 2021 to October 2021) data provided by the industry, the average total fresh water consumption is 225 KL/day**.** The source of fresh water is GIDC water supply. B. **As per CCA** As per CCA vide order no. AWH-112542 dated 01.06.2021 unit is permitted for total water consumption of **635 KL/day** including domestic consumption of 22

		KL/day.
b)	**Waste water segregation with specification of criteria of such segregation (if any)**	Industry is not segregating wastewater generated.
c)	**Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.**	The waste water generated from the plant process is collected in the pit provided in the plant. The flow meter has provided at the outlet of the pit**.**
d)	Total wastewater generation	Based on last 07 months' data provided by the unit, the average waste water generation is **67.14 KL/day.** As per CCA, unit is permitted to generate **362 KL/day** waste water as specified by the GPCB.
e)	**Waste water treatment process with capacity and operational status of ETP:**	Industry has provided ETP of capacity 650 KLD. During the visit ETP was operational. Industry has provided ETP consisting of Collection Tank (1200 KL), 2 nos. Flash Mixer (Ferrous/Lime), 1 no. Primary Clarifier (Cap. 95 M^3), 2 Nos. Aeration Tank (3000 M^3 and 1050 M^3), 2 nos. Secondary Clarifier (75 M^3 and 65 M^3), 2 Nos. Intermediate Tank, Sand Filter, Carbon Filter, Final Outlet Tank (25 M^3). Leading to pumping station A. As informed by the industry, the ETP is not operated continuously due to availability of less quantity of waste water. However Collection pit provided in process plant was observed completely full with acidic wastewater.
f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	Industry maintaining the reading of flowmeter installed at the final treated waste water discharge line..
g)	Provision of any intermittent storage /guard pond etc. before disposal	Industry has not provided any guard pond for the storage of final treated waste water.
h)	Mode of disposal of waste water(GIDC drain, direct, CETP/ZLD, Gardening etc.	GIDC drainage system.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	As informed by the Industry, there is no requirement of MEE MEE system. Industry has installed flow meter at the final treated waste water discharge line and at the outlet of the collection pit in the plant for the collection

		lection of process waste water.
3.	OCEMS/PTZ/flowmeter provision, Location of OCEMS, parameters monitored, working principals	Industry has provided online analyzers for the parameters PH, COD, BOD and TSS. However, the connectivity is not provided with GPCB/CPCB servers.
4.	Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed	NO bypass/accumulation of waste water was observed in the premises of industry.
5.	**Details of closure directions issued by GPCB in last 5 years:** No direction was issued by GPCB in last five years as industry recently started operation.	

6. Details of waste water /waste water samples collected and analysis results:

The grab samples were collected: (1) final treated waste water from final treated waste water discharge tank and (2) waste water sample from equalization tank of ETP. The results of the analysis parameters are tabulated below –

Analysis Results of GPCB Laboratory:

Name of the Parameters	Inlet to ETP (EQT)	Final Treated Waste water Discharge Tank	GPCB Standard Limit for Discharge
pH	3.32	7.29	6 to 9
Colour	15	100	---
TSS	54	**112**	100
Fluorides	1.4	0.98	15
Sulphides	<1.0	3.68	5
Ammonical Nitrogen	7.28	BDL	50
TKN	11.2	3.36	50
Sulphate	510	398	---
Nitrate Nitrogen	2.36	2.95	50
BOD (3 days at 27^0C)	230	82	100
COD	975	**375**	250
Chlorides	3830	1048	---
Phenolic compounds	0.18	<0.10	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis Results of third Party Laboratory:

Name of the Parameters	Inlet to ETP (EQT)	Final Treated Waste water Discharge Tank	GPCB Standard Limit for Discharge
pH	3.25	7.30	6 to 9
Colour	50	>500	---
TSS	110	**160**	100
Fluorides	3.5	BDL	15

Sulphides	18	**9**	5
Ammonical Nitrogen	10	BDL	50
TKN	14	5	50
Sulphate	350	450	---
Nitrate Nitrogen	BDL	BDL	50
BOD (3 days at 27^0C)	260	90	100
COD	1024	**376**	250
Chlorides	4480	1022	---
Phenolic compounds	0.33	0.21	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis results reveals that the samples collected from the final treated waste water discharge tank exceeds the discharge norms prescribed by GPCB for the parameter of COD and TSS**.**

7. Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.

During the visit following observations were noted by the visiting team-

- The industry has not provided display board at the gate of the premises.
- During the visit industry was manufacturing BCMB, a dye intermediate as per CCA.
- Large quantity of Process residue waste/ Offspecification chemical materials keeping in durms without any labelling stored in haphazard manner at various locations was observed. Proper hazardous waste storage area is not provided for the same.

Photographs showing drums of hazardous waste kept at various locations in the plant premises

- Also process process waste and ETP Sludge was found in mix up condition in various locations on open land within premises.
- A lot of leakages from the drums, spread out of leachate from the sludge as well as from the drums on the un-impervious ground and acidic , suffocating fumes were observed during the visit. It was also observed during the visit that in the industrial premises construction work was carry on and digging of the land at many places were observed, in such a situation soil and ground water contamination cannot be ruled out by the leakages and spreading of hazardous waste on the ground

Photograph showing:Drums filled with hazardous waste and leakages on the nearby land

- During the manufacturing of the product- BCMB , a semisolid process residue is formed. As informed by the industry, about 5 to 7 % process semi solid residue is formed which is collected in the plastic/metallic drums disposed to for common incineration/coprocessing.
- As informed by the industry, the industry has started its production since January 2021. During the visit, huge quantity of process residue/cleaning materials and off specification process distillation residue waste were stored at the various locations in plant premises in haphazard manner without any safety and security consideration.
- As per record provided by the industry, about 180 MT process distillation residue, 30 MT dilute sulphuric acid, 290 MT spent $ZnCl_2$ solution and 60 MT ETP sludge were stored in the ETP and plant premises.
- As informed by the industry this hazardous waste was stored since January 2021 means more than 10 months while as per hazardous waste management rules 2016 hazardous waste cannot be stored more than 90 days.
- The drums filled with hazardous waste were not labeled with the category and name of waste and the condition of the drums was very poor and most of the drums were observed leakages and spillages of hazardous waste and contaminating the nearby unpaved /raw land surfaces.
- Reportedly, the ETP of the unit is not operated continuously due to availability of less quantity of waste water. However, the collection pit provided in the process plant was found completely full with acidic wastewater.
- Analysis results reveals that the samples collected from the final treated waste water discharge tank exceeds the discharge norms prescribed by the GPCB for the parameter COD, TSS**.**
- Industry has installed online TOC analyzers. However, connectivity is not provided with the server of GPCB and CPCB.

Conclusion:

During the visit, large quantity of various types of hazardous waste like process distillation residue, off specification/reject material, ETP sludge was found stored on open land without impervious flooring in haphazard manner without any labelling at various locations within the industry premises.

	Many drums containing process distillation residue, off-specification/reject material were found leaking and leaking waste contaminating the surrounding soil. Also fugitive emission from many such drums were found. Such mismanagement of hazardous waste has potential to contaminate soil and groundwater within the industrial premises. As reported by the industry about 560 MT hazardous waste were stored within the premises. Industry has not provided proper and adequate hazardous waste storage area and also there is no leachate collection system provided by the industry. Therefore, industry needs to provide proper hazardous waste storage shed area with impervious flooring & other adequate safety measures to avoid contamination of the environment. Industry needs to dispose-off hazardous waste to Common Hazardous Waste Incineration/ disposal facility on priority basis. Industry is discharging waste water to GIDC drain without meeting prescribed discharge norms. Therefore, Industry needs to upgrade the treatment system to meet the prescribed discharge norms. Industry has installed online analyzers at the final treated waste water discharge line. However the analyzer provided by the industry is not connected with the server of GPCB/ CPCB. Industry needs to provide connectivity of the online analyzer with the server of GPCB/ CPCB. Industry should display the hazardous waste handled in the industry and other relevant information at the entrance gate of the industry.	
8.	Date of Visit	18.11.2021
9.	Name of visiting officials	Manoj Kumar Sharma,Sc-B, CPCB B.D. Prasad, DEE, GPCB

ANNEXURE A-7

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Tagros Chemicals India Limited** Plot No. 43/1, GIDC Estate Dahej , Tal. Vagra, Dist. Bharuch.
b)	Contact person & Contact numbers,Fax etc.	Shri Sunil Rai Manager EHS, Mobile No.-7069045831
c)	Year of Establishment	2014
d)	CCA Validity	GPCB issued CCA vide order No-AWH-100601 dated 08.04.2019 with validity upto **14.02.2024**
e)	Operational status of the industry	During the visit Industry found operational.
f)	Present manufacturing products	During the visit unit was manufacturing Sulfentrazone, an herbicide chemical.
g)	Main raw materials	Main raw materials are as below- Chlorine gas, Hydrogen gas, Acetic acid, Methanol, RM-01, Sodium hydroxide, Potassium carbonate, Dimethyl formamide, RM-2,Chlorodifluromethane, Oleum, RM-03, Nitric acid, Dichloroethane, RM-09, Raney Nickle, RM-08, RM-07, Toluene, RN-10, RM-11, Hydrochloric acid, Sodium hypochlorite, Soda ash, Caustic flakes, CS Lye, Tertiary butyl alcohol, Sulphuric acid 98%.
2.	**Waste water management:**	
a)	Quantity of fresh water consumption and its source (GIDC/Bore well /Tankers)	**A. : Based on past 06 months billing records** Based on past 06 months' data provided by the industry the average total fresh water consumption is **1004.4 KL/day.** B. **As per CCA** As per CCA vide order no. AWH-

		100601 dated 08.04.2019 industry is permitted for total water consumption of **988.6 KL/day** including domestic consumption of 45 KL/day and gardening 30 KL/day. The source of fresh water is GIDC water supply.
b)	**Waste water segregation & its criteria of segregation** The waste water generated is segregated into two streams based on high TDS/high COD and low TDS/low COD content of the waste water. On an average of 400 KLD of High TDS/COD stream is generated from the process plant and about 100 KLD waste water is generated from utility section of low TDS/COD stream.	
C)	Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.	Storage tanks for the collection of waste water were provided in the respective manufacturing plants. Industry has provided flow meter at the collection tank at the plant premises. However, during the visit, the flow meter installed at the collection tank found nonoperational.
d)	Total wastewater generation	**Based on last 06 months' data:** As per data provided by the industry, the average waste water generation is as below- High TDS/COD - 400 KL/day. Low TDS/COD- 100 KL/day. As per CCA unit is permitted to generate waste water of 877.8 KL/day including domestic of 41 KL/day.
e)	**Waste water treatment process with capacity and operational status of ETP:** The industry has segregated entire generated waste water into two streams of high TDS/COD and of low TDS/COD and provides separate treatment system for both the stream. **For High TDS/COD COD:** About 400 KLD of High TDS/high COD stream is generated from the manufacturing processes. The treatment system consisting of primary treatment followed by MEE comprising of oil & grease removal chamber, equalization, neutralization, tube settling tank.	

	Industry has provided 02 numbers of MEE of capacity 500 KLD and 300 KLD with 7 effect evaporation followed by 04 numbers of ATFD of capacity.2500 kg/hr (03 No) & 01 No. of 1200 kg/Hr followed by 03 numbers of ONFs. • Sludge generated from primary treatment of high TDS/COD stream is periodically disposed at CHWTSDE site. • The salt generated from O.N.F. is collected in jumbo bags and disposed to CHWTSDF site and mother liquor is feed to ATFD for further salt generation. • The MEE condensate formed is collected in MEE condensate Holding tank of capacity 620 KL. Industry has provided magnetic flow meter at the inlet of MEE condensate tank. However, flow meter was not operational during the visit. MEE condensate along with waste water from utility section is taken into the ETP of capacity about 620 KLD provided for the treatment of low TDS/low COD waste water stream. **Treatment for Low TDS/COD Stream:** Low TDS/COD stream consisting of MEE condensate, waste water from utility section and from domestic waste water**. The** industry has provided ETP for the treatment of MEE condensate along with waste water generated from utility section. The ETP consisting of the following units- **Collection Tank →Equalization Tank→ Neutralization Tank→ Flocculator→Lamella settling →Bio tower (02 No.)→Aeration Tank (02 No.)→Secondary clarifier →Holding Tank (02 No.) → Flash mixture→Tube Settler(04 No.)→Final treated water collection Tank(550 KL) → final Treated water Holding Tank→GIDC Drainage system leading to Pumping station A.** Reportedly, industry discharging on an average of 355 KL/day treated waste water to GIDC drainage system. About 140 KL/day of treated waste water is feed to RO system of capacity 400 KL/day. As per record provided by the industry on an average of 125 KL/day RO permeate is reused in the plant and RO reject is feed to MEE system. Sludge generated from ETP	
f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	Industry is maintaining the logbook for MEE feed, treated waste water feed to RO system treated waste water discharge into GIDC drainage system and condensate generated. However, flow meter provided at MEE condensate and collection tank at plant found nonoperational during the visit.

g)	Provision of any intermittent storage /guard pond etc. before disposal	Industry has provided final treated waste water holding tank before discharge in top the GIDC drainage system.
h)	Mode of disposal of waste water(GIDC drain, direct, CETP/ZLD, Gardening etc.	GIDC Drainage system leading to pumping station-A.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	Industry has provided flow meter at MEE Feed, MEE condensate, collection tank of waste water at respective plants and final treated waste water discharge line. However, during the visit flow meters installed at collection tanks and MEE condensate were not working due to some breakdown problem.
3.	OCEMS/PTZ/flowmeter provision, Location of OCEMS, parameters monitored, working principals	The flow meter and online analyzer for the parameters TOC, COD, Ammonical Nitrogen and pH installed at final treated discharge line found in working conditions during the visit. The value of TOC, COD, Ammonical Nitrogen and pH during the visit were observed 165.3, 212.6, 11.83 and 8.14 respectively. Reportedly, online analyzers are connected with GPCB/ CPCB servers.
4.	Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed	No bypass/ponding/accumulation of waste water inside the industrial premises was observed during the visit.
5.	**Details of closure directions issued by GPCB in last 5 years:** Closure direction, other direction, Notice, Show Cause Notice issued by GPCB based on various noncompliance under water Act in last five years are as under: Notice dated 26.05.2016 Notice dated 03.10.2016 Closure direction dated 16.03.2018 Other direction dated 30.01.2019 Closure direction dated 30.07.2019 Closure direction dated 13.04.2019	
6.	**Details of waste water /waste water samples collected and analysis results:** The grab samples were collected: (1) final treated waste water from the final treated waste water discharge tank and (2) waste water sample from equalization tank of ETP. The results of the analysis parameters are tabulated below – **Analysis Results of GPCB Laboratory:**	

Name of the	**Inlet to ETP (**	**Final Treated**	**Final Treated**	**GPCB Standard**

Parameters	EQT)	Waste water holding Tank	Waste water Discharge Point	Limit for Discharge
pH	11.23	7.87	7.77	6.5 to 8.5
Colour	300	100	200	---
TSS	94	48	**236**	100
Fluorides	1.65	1.35	0.95	15
Sulphides	<1.0	9.92	<1.0	5.0
Ammonical Nitrogen	78.4	38	33.6	50
TKN	103.60	47.04	40.88	50
Sulphate	327	464	463	--
Nitrate Nitrogen	38.76	41.28	36.4	50
BOD (3 days at 27^0C)	460	44	72	100
COD	1887	**167**	**303**	250
Chlorides	961	1003	1019	--
Phenolic compounds	18.72	0.55	0.48	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis Results of third Party Laboratory:

Name of the Parameters	Inlet to ETP (EQT)	Final Treated Waste water holding Tank	Final Treated Waste water Disposal Point	GPCB Standard Limit for Discharge
pH	10.97	7.73	7.64	6.5 to 8.5
Colour	>500	240	280	---
TSS	190	90	**300**	100
Fluorides	2	1.0	0.7	15
Sulphides	18	4	7.94	5.0
Ammonical Nitrogen	77	42	33	50
TKN	87	48	40	50
Sulphate	168	331	332	--
Nitrate Nitrogen	17.4	90	**89**	50
BOD (3 days at 27^0C)	320	40	100	100
COD	1529	150	**412**	250
Chlorides	745	1027	941	--
Phenolic compounds	19.3	0.6	0.6	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The GPCB analysis of samples reveals that the samples collected from the final discharge

	point exceed the discharge standard limit for concentration of COD and TSS.
7.	Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc. **During the visit following observations were noted by the visiting team-** • Industry has provided electronic hazardous waste information handling display board and other relevant information display board at the entrance gate of the unit. • During the visit industry was manufacturing sulfentrazone, an herbicide chemical. • During the visit, ETP and one seven effect (5+2) MEE of 500 KLD capacity were found in operation. The second MEE of 300 KLD capacity was not in operation due to availability of less quantity of waste water. In the RO system backwashing was carried out during the visit and RO system was not operational. • The treatment units of primary treatment system of high TDS/COD were observed very corrosive and equalization tank & neutralization tanks were observed full of oily sludge.  *Photograph: showing the corrosion and deposition of oily sludge in Equalization Tank of high COD/TDS waste water* • leakages and spillages of waste water were observed in the ETP area • Huge quantity of leakages of high TDS/COD waste water were observed in MEE section.

Photograph: Showing leakages of high COD/TDS waste water in MEE section

- The analysis of samples collected from final discharge point reveals that the samples collected from the final discharge point is not meeting the discharge standard norms for concentration of COD and TSS.
- The flow meter installed at collection tank at plant and MEE condensate were not operational during the visit. Records for the generation of such high COD/TDS waste water was not maintained properly in the logbook by the industry.
- The industry has provided hazardous waste storage shed for the storage of ETP sludge and MEE salt and other process distillation residue. Though, the storage shed having concreate flooring and leachate collection facility. However, the storage shed was observed inadequate as it is fully packed with sludge and MEE salt.. The process waste was stored outside the hazardous waste storage shed on concrete flooring.

Photograph: Showing fully packed of hazardous waste storage shed with ETP sludge and MEE salt

	• As per record provided by the industry, the industry in last six months has disposed 2744.38 MT solid waste to CHWTSDF site and 857.57 MT process residue/distillation waste to common facility for coprocessing/ incineration. Industry has made MOU with various agrochemical industries for disposing spent sulphuric acid. • During the visit about 900 MT MEE salt and ETP sludge, 35 MT Process distillation residue and 15 MT spent sulphuric acid were stored in the hazardous waste storage area in the industrial premises. **Conclusion:** Industry discharging waste water without meeting the discharge norms prescribed in the CCA by GPCB. During the visit deposition of oily sludge observed in the equalization and neutralization tank of ETP provided for the treatment of high COD/TDS process waste water. Leakages of high COD/TDS waste water were observed in MEE section. Industry needs to upgrade waste water treatment system to meet the discharge norms prescribed in the CCA. Industry needs to control the leakages of high COD/TDS waste water in MEE section and industry should remove the oily sludge deposited in the equalization tank and in neutralization tank of the high COD/TDS ETP. Reportedly 950 MT hazardous waste of various type were stored in the hazardous waste storage shed. The hazardous waste storage shed is inadequate as some process waste drums were kept outside the shed on concrete flooring. Industry needs to provide hazardous waste storage shed of adequate capacity.	
8.	Date of Visit	25.10.2021
9.	Name of visiting officials	Manoj Kumar Sharma,Sc-B, CPCB B.D. Prasad, DEE, GPCB

ANNEXURE B-1

1. General Information of the Industry:		
a)	Name & Address	M/s Meghmani Industries Ltd., (Old name: Meghmani Speciality Chemicals Ltd.) (12286), Plot No. Z-6, SEZ, Dahej, Tal. Vagra & Dist.: Bharuch- 392130
b)	Contact Person & Contact Numbers, Fax	Shri Krunal Goswami, Manager EHS Mobile: 9714686854
c)	Year of Establishment	2011
d)	CCA Validity	GPCB has issued CCA with validity upto 22.05.2026.
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	As informed, during visit the industry was producing following products: • Dyes Solvent: Petromate Yellow 07, Marker 1,2,3&7 • Agro Chemicals: Atrazine, Propanil, Tebuconazole, Pendimethalin, Metribuzin, Thiophanate Methyl • Optical Brightening Agents (OBA): OBA-DMX, OBA-DT
g)	Main Raw Materials	Major raw materials of the industry: 4 Nitro Ortho Xylene (4 NOX), Aniline Oil, Beta Napthol, Caustic Potash, Cyanuric Chloride, Di-methyl Sulphide, Hydrochloric acid, Mono ethylamine, Morpholine, Ortho Phenylene Diamine, Potassium Carbonate, Sodium Thiocyanate, Sulphuric acid etc.
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 468 KLPD. B. As per CCA The industry is permitted to consume 1332 KLPD fresh water for industrial purposes sourced through GIDC water supply.

b)	Wastewater segregation with specification of criteria of such segregation (if any)	**For In-house treatment**: The wastewater of industry is segregated into 02 streams of namely Low COD and High COD streams. The Low COD stream comprises wastewater with COD<15,000 mg/l and TDS<20,000 mg/l. The High COD comprises wastewater with COD> 15,000 mg/l and TDS > 20,000 mg/l. The industry has provided an ETP comprising of biological treatment of Low COD wastewater and stripper, MEE and ATFD system for treatment of High COD wastewater. **For sending to Common MEE facility:** The industry sends the wastewater stream from Pendimethalin manufacturing process (Agro chemical-II process plant) and stripper condensate stream to Common MEE facility of M/s Detox, Ankleshwar.
c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	For the Low COD stream, the industry has provided 02 Collection tanks with capacity 290 Kl and 1350 KL each. Flowmeter is provided at each wastewater inlet pipeline to ETP from its various production plants. For the High COD stream, the industry has provided 02 underground tanks of 150 KL capacity each. Flowmeter is provided at each wastewater inlet pipeline to the tanks.
d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry generated on an average total wastewater of 440.91 KLD which includes 94.3 KLD high COD stream & 335.5 KLD of low COD stream and, 11.11 KLD wastewater to common MEE facility. B. As per CCA The industry is permitted to generate total industrial wastewater of 897 KLD including 225 KLD High COD wastewater and 672 KLD Low COD wastewater. The industry is permitted to treat the high COD stream in-house MEE & ATFD facility and/or send to nearby "*common ZLD facility*".

e)	Wastewater treatment process with capacity and operational status The treatment process for high COD and Low COD were operational during visit. The process brief is provided below: • **For High COD** **Storage tank→ feed tank→ stripper→ MEE→ ATFD** Condensate generated from MEE is treated in ETP provided for Low COD stream and Concentrate is fed to ATFD. Residue from ATFD is disposed to CHWTSDF. • **For Low COD** The treatment process for the low COD stream comprises of: Collection Tank 1 &2 →Flash Mixers→Primary Clarifier→Filter Press→Aeration Tank→Secondary Clarifier→Chlorination Tank→Filter Press→Filtrate Holding Tank→Filter Press→Final Holding Tank→PSF&ACF→To GIDC Drain The low COD stream from Agro-chemical process plants I & II, OBA-II and Solvent Dyes plants are stored in Collection tank 1 of capacity 290 KL. The low COD streams from OBA-I plant and MEE&ATFD condensate is stored in Collection tank 2 of capacity 1350 KL. The wastewater from Collection tank 1 & 2 are fed to Flash mixer in the ratio 20:80 to control excessive formation of foams. The primary clarifier is presently defunct and is only used as storage tank. Cooling tower blow down and steam condensate generated in the plant are discharged in final holding tank.	
f)	On site Record keeping During visit, the industry provided updated logbook for ETP and MEE.	
g)	Provision of any intermittent storage/guard pond etc. before disposal	The final treated wastewater from ETP (after passing through PSF & ACF) is transferred to an intermediate PVC tank (capacity 2KL) at the premises boundary. The overflow of this tank discharges into the GIDC drain.
h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	GIDC drain connected to Pumping Station-C.

i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	The industry has provided flowmeter are inlet of the wastewater streams to Stripper & MEE and ETP. The industry has also provided flowmeter at the final outlet of from ETP. However, the industry has not provided flowmeter for stripper condensate and ATFD condensate.

3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server

The industry has not provided operational OCEMS. During visit, it was observed that the industry has provided provision for OCEMS at the ETP, however no analyzers/devices were provided. The industry has not provided connectivity of OCEMS to CPCB/GPCB server.

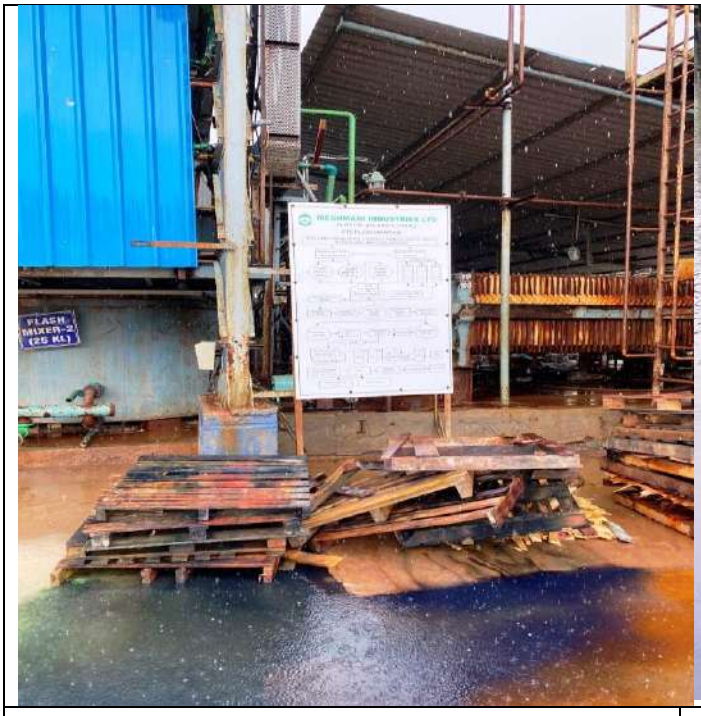
Provision for OCEMS provided at the unit, however no analysers, data logger etc. and connectivity provided

4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed

During visit there was sudden rain in the area. It was observed that rainwater runoff from process area, hazardous waste storage and MEE area were flowing to storm water drains. Further, the contaminated water in the storm water drains was being discharged outside the premises to GIDC storm water drain. This indicates that proper provision for collection and treatment of such contaminated water flowing through storm water drain is not provided by the industry. It is worth to mention that such incidences of contaminated water flowing through storm water drain into GIDC storm water drain was also observed and reported by GPCB during previous visit to the industry.

Additionally, contaminated rainwater accumulation in form of pond of approx. length 50m, width 1.5 m and depth of 0.75 m was observed in open land kept for tree plantation and gardening near ETP of the industry. Since the pond formation occurred on open ground with possibility of seepage of contaminated water into groundwater, the team collected samples of contaminated water from the pond. The inspecting team collected samples from the storm water drain outlet and contaminated pond in the industry.

Leachate flowing from hazardous waste storage area to roads and storm water drain

	
Run-off from hazardous waste handling area	*Run-off from process area*
	
Storm water drain discharging contaminated water	*contaminated water run off leading to pond formation*

Contaminated water ponding inside the premises

5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Mixed Inlet of ETP: The mixed wastewater inlet from two collection tanks into the flash mixer of the ETP.
B. Final outlet of ETP to GIDC effluent drain: The final outlet from the ETP of the industry to GIDC effluent drainage network
C. Storm water drain discharge into GIDC storm water drainage
D. Contaminated water pond formed on open land kept for gardening/tree planatation near ETP

The analysis results of the samples collected and analysed by GPCB are tabulated below:

Parameters	**Mixed Inlet of ETP**	**Final Outlet to GIDC drain**	**Storm water drain discharge**	**Contaminated water pond**	**GPCB Discharge Standards as per CCA**
pH	8.56	7.31	**11.13**	8.65	5.5-9.0
Colour	400	100	400	700	--
TSS	138	24	**602**	**158**	100
Fluorides	3.8	5.9	8.1	3.8	15
Sulphides	6.08	BDL	2.24	3.84	5
Ammonical Nitrogen	268.8	**123.2**	1.12	3.36	50
Sulphate	902	867	261	538	--
TKN	280	133.8	5	10	--

Nitrate Nitrogen	36.38	10.97	30.6	63.52	--
BOD (3 days at 27^0C)	1092	35	99	**291**	100
COD	4458	158	**516**	**1476**	250
Chlorides	6150	2700	503	1375	--
Phenolic Compounds	13.45	BDL	< 0.1	0.23	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	**Mixed Inlet of ETP**	**Final Outlet to GIDC drain**	**Storm water drain discharge**	**Contaminated water pond**	**GPCB Discharge Standards as per CCA**
pH	8.54	7.34	**11.3**	8.85	5.5-9.0
Colour	>500	150	>500	>500	--
TSS	110	50	**660**	**230**	100
Fluorides	0.75	BDL	0.71	0.65	15
Sulphides	16	BDL	**28**	**56**	5
Ammonical Nitrogen	107	**126**	BDL	BDL	50
Sulphate	1212	1294	143	506	--
TKN	159	131	9	8	--
Nitrate Nitrogen	14.5	17.2	27.5	55	--
BOD (3 days at 27^0C)	1470	51	**140**	**420**	100
COD	5040	212	**560**	**1552**	250
Chlorides	6786	2779	315	1342	--
Phenolic Compounds	14.32	BDL	0.17	0.4	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

- The GPCB analysis results of the sample collected from the final outlet of treated wastewater into GIDC drain reveals that concentration of Ammonical Nitrogen exceeds GPCB standards. Similarly, exceedance of Ammonical Nitrogen observed in the analysis results by third party laboratory.
- The GPCB analysis results of the sample collected from the storm water drain outlet reveals that pH and, concentration of TSS and COD exceed the GPCB discharge standards as per CCA for treated wastewater. Similarly, the analysis results by third party laboratory reveals exceedance in pH and, concentration of TSS, Sulphides, BOD and COD in comparison to the GPCB wastewater discharge standards.
- The GPCB analysis results of the sample collected from the contaminated pond reveals that

concentration of TSS, BOD and COD exceed the GPCB discharge standards as per CCA for treated wastewater. Similarly, the analysis results by third party laboratory reveals exceedance in concentration of TSS, Sulphides, BOD and COD in comparison to the GPCB wastewater discharge standards.

6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has been issued closure directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 19.04.2016, 20.07.2016, 30.01.2017, 30.01.2019 & 17.02.2020.

The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 15.05.2019.

7. Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.

- The industry has provided display board at the entry gate of the premises. However the display board was not updated.
- As informed, the industry procures steam for process and MEE from another nearby industry M/s Indo Baijin Chemicals Pvt. Ltd., Dahej and M/s Mirash Industries Pvt. Ltd., Dahej as per CCA. The steam condensate generated after utilization of steam is discharged in the final treated tank of ETP along with cooling water blow down leading to dilution in treated wastewater of the industry.
- It is inferred from the analysis results that the final outlet of treated wastewater of industry is exceeding GPCB discharge norms. It is worth to mention that such exceedance is observed even after dilution of treated wastewater through steam condensate and cooling water blow down.
- During visit, it was observed that the approx. 1000 MT of hazardous waste were stored in hazardous waste storage yard. After sudden rainfall in the area during visit, run-off of leachate from the hazardous waste storage area and from the other process areas to common road and storm water drains of industry ultimately discharging into GIDC storm water drain was observed. The analysis results of storm water drain outlet sample reveals high organic contamination and even exceeds wastewater discharge standards. Therefore, the hazardous waste storage facility provided at the industry is inadequate.
- The industry has provided open land beside the boundary wall for plantation of trees/gardening. However, during visit it was observed that various types of waste such as glass wool insulation, solid waste etc. were dumped on the open land. Moreover, runoff from the process area/ETP area was finding its way to the open plot leading to formation of pond of contaminated water. The analysis result of sample of pond reveals high organic contamination and even exceeds GPCB wastewater discharge norms. Percolation of such contaminated water has potential to contaminate groundwater in the area.

Various wastes dumped in open land inside the premises of industry

- The industry has not provided operational OCEMS. During visit, it was observed that the industry has provided provision for OCEMS at the ETP, however no analyzers/devices were provided. The industry has not provided connectivity of OCEMS to CPCB/GPCB server. The industry has provided 3 way valve at the final outlet of treated wastewater to GIDC drain and as informed, the 3 way valve is provided to cut-off treated wastewater discharge into GIDC drain if the COD is greater than 250 mg/l as per OCEMS readings. However, the 3 way valve is also non-operational.
- The industry has provided facility for treatment of wastewater through chlorine gas dosing in the ETP. During visit it was observed that, the chlorine gas tonner/vessel was being used without any covered shed, provision of chlorine gas sensors, and any other requisite safety precautions. Since chlorine is a toxic gas, the industry should implement proper safety measures in its handling.

Hence, it can be concluded that the industry is non-complying to wastewater discharge standards and violating the CCA conditions. About 1000 MT of hazardous waste is stored in inadequate storage facility inside the premises of industry which led to contaminated wastewater runoff to storm water drains and ponding over open ground. Contaminated water from storm water drains flowed into GIDC storm water drain. It is worth to mention that storm water drains are meant to carry only rainwater during heavy rainfall. The GIDC storm water drains ultimately discharge into estuarine zone of River Narmada. Moreover, formation of contaminated wastewater ponding over open ground due to haphazard way of handling hazardous wastes in the premises of the industry has potential to contaminate soil and groundwater in and around the premises of the industry. The industry has previously been issued closure directions on multiple occasions by GPCB in reference to wastewater management. This shows that the industry is a routine violator of environmental norms.

The industry need to improve effluent treatment efficacy and hazardous waste storage and handling measures. The industry need to provide gate valves to stop discharge of contaminated water in GIDC storm water drains and provide appropriate facility for pumping and treating contaminated water in industry's storm water drains.

8. Date of visit	25.10.2021
9. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE B-2

1. General Information of the Industry:		
a)	Name & Address	**M/s Sun Pharmaceuticals Pvt. Ltd.,** Plot No. Z-15, SEZ, Dahej, Tal. Vagra & Dist.: Bharuch-392130
b)	Contact Person & Contact Numbers, Fax	Shri Vijay Kulthe, Production Head Mobile: 9922540081
c)	Year of Establishment	2014
d)	CCA Validity	GPCB has issued CCA with validity upto 16.03.2023.
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	As informed, during visit the industry was producing following products: Mesalamine, Metformin Hydrochloride, Atorvastatin Calcium and Dolutegravir Sodium
g)	Main Raw Materials	Methanol, Xylene, Toluene, Ethylene Glycol, Caustic Soda, Sulphuric Acid, Hydrochloric Acid, Calcium Chloride, Cyclohexane
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 311.31 KLD. B. As per CCA The industry is permitted to consume 762 KLD fresh water for industrial purposes sourced from GIDC water supply.
b)	Wastewater segregation with specification of criteria of such segregation (if any)	The wastewater in the industry is segregated into 02 streams namely Low COD and High COD streams. The High COD stream comprises of streams with COD concentration > 10000 mg/l and TDS>10,000 mg/l. The Low COD stream comprises of streams with COD < 10,000 mg/l and TDS<10,000 mg/l.

c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided 02 collection tanks of capacity 90 KL each for Low COD and High COD wastewater respectively. The industry has not provided flow meter at inlet pipeline of low COD wastewater to ETP. The industry has provided flow meter at the outlet of ETP discharge to GIDC drain. The industry has provided flow meter at inlet of MEE for high COD wastewater.
d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry discharged on an average total wastewater of 74.06 KLD. B. As per CCA The industry is permitted to generate total 345 KLD low COD wastewater for discharge in GIDC drain after treatment and, 40 KLD of high COD/TDS wastewater for reuse after treatment in MEE & VTFD.

e)	Wastewater treatment process with capacity and operational status The industry has provided ETP of capacity 350 KLD comprising of biological treatment for Low COD wastewater and a treatment system comprising of stripper, MEE & VTFD with capacity 175 KLD for high COD wastewater. The ETP was operational during visit. However, stripper, MEE and VTFD were not operational during visit. The process brief is provided below: • **For High COD** **Storage tank→ feed tank→ stripper→ MEE→ VTFD** Condensate generated from MEE is treated is reused for cooling water makeup in Cooling tower and the MEE Concentrate is fed to VTFD. Stripper condensate (organic solvent) is sent to common incinerator and the residue from VTFD is disposed to CHWTSDF. • **For Low COD** The treatment process for the low COD stream comprises of: Equalization tank→Neutralization →Primary settler→ Intermediate tank →Trickling filter →Aeration Tank-IA→Secondary Settling Tank-IA→ Aeration Tank-IB→Secondary Settling Tank IB→Aeration Tank-II→Secondary Settling Tank-II→ Aeration Tank-III→Secondary Settling Tank III→Intermediate storage tank→PSF→ACF→Guard Pond→To GIDC Drain The trickling filter provided by the industry was found defunct and not operational during visit. In the Aeration tank II, aeration through diffusers was not operational during visit. As informed, the industry uses it as an intermediate storage tank. The industry has provided sludge holding tank and filter press.	
f)	On site Record keeping The industry has maintained logbook for ETP and MEE operation.	
g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has provided guard pond of capacity 650 KL.
h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	GIDC drain connected to Pumping Station-C.

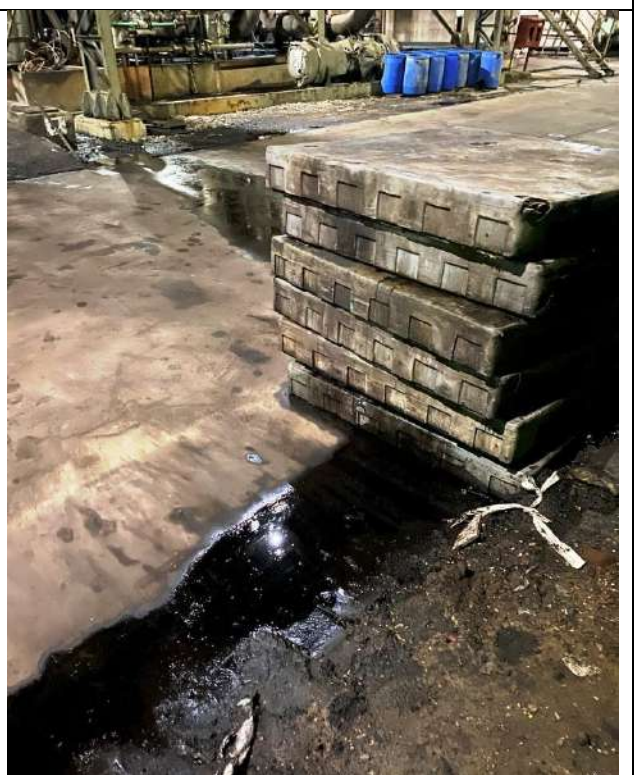
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	The industry has provided flow meter at inlet of the wastewater stream to Stripper & MEE system. However, no flow meter is provided at inlet of ETP. The industry has provided flow meter at the final outlet of from ETP.
3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server The industry has provided OCEMS connected with GPCB/CPCB server at the final outlet of ETP.		

4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed

During visit, it was observed that huge quantity of hazardous waste in jumbo bags stored in open spaces such as internal roads of the industry etc. Leachate generated from such storage of hazardous wastes were flowing to open ground beside the roads and also to storm water drains. The leachate flowing to open land may seep into ground leading contamination of groundwater and generation of such leachate may significantly increase in case of heavy rainfall.

The industry has provided check valve in outlet of storm water drain and facility for pumping and treatment of storm water. During visit, there was no outfall of storm water drain outside the premises.

Hazardous wastes stored on internal roads and leachate from the wastes flowing to open land and storm water drain



5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Inlet of ETP at collection tank (low COD wastewater)
B. Outlet of ETP to GIDC drain

The analysis results of the samples collected and analysed by GPCB are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	5.08	8.4	6 to 9
Colour	500	200	--
TSS	230	22	100
Fluorides	0.2	**30**	15
Sulphides	11.2	<1.0	5
Ammonical Nitrogen	67.2	1.12	50
Sulphate	495	937	--
TKN	76.16	5.6	50
Nitrate Nitrogen	7.96	**254.1**	50
BOD (3 days at 27^0C)	1710	18	100
COD	4194	82	250
Chlorides	1048	1025	--
Phenolic Compounds	0.23	BDL	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	5.08	8.82	6 to 9
Colour	>500	250	--
TSS	300	50	100
Fluorides	0.83	0.83	15
Sulphides	56	BDL	5
Ammonical Nitrogen	59	BDL	50
Sulphate	440	1121	--

TKN	92	4	50
Nitrate Nitrogen	BDL	**72**	50
BOD (3 days at 27^0C)	1180	21	100
COD	4400	96	250
Chlorides	680	725	--
Phenolic Compounds	BDL	BDL	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

- The analysis results of the sample collected from the final outlet of treated wastewater into GIDC drain reveals that concentration of fluorides and nitrate-nitrogen exceeds GPCB standards. Exceedance of Nitrate-Nitrogen is also observed in the analysis results by third party laboratory.

6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has not been issued any closure directions and Notice of Direction in last 5 years.

7. Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.

- The industry has provided display board at the entry gate of the premises. However the display board was not updated.
- The industry has provided ETP comprising of biological treatment for low COD wastewater. The ETP was operational during visit. The industry has not provided flow meter at wastewater inlet to ETP. The flow meter measurement is done on the basis of level of collection tank of ETP. The trickling filter provided in the ETP is non-operational due to maintenance issues.
- It is inferred from the analysis results of final outlet of treated wastewater to GIDC drain that it exceeds CCA discharge standards.
- During visit, it was observed that about 50 MT of hazardous waste was stored in jumbo bags in open land such as internal roads etc. outside the hazardous waste storage facility. Leachate seepages from the hazardous waste flowing to open ground near roads and storm water drain was observed.

Hence, it can be concluded that the industry is discharging wastewater to GIDC drainage network without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP. Further, the hazardous waste handling at the industry is poor. About 50 MT of hazardous waste was found stored in open land such as internal roads etc. and leachate seepages from the wastes flowing to open ground and storm water drains has potential to contaminate soil and ground water in around the premises of the industry. The industry need to increase capacity of its existing hazardous storage facility or provide new facility for safe storage of hazardous waste inside the premises.

8. Date of visit	25.10.2021
9. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE B-3

1. General Information of the Industry:		
a)	Name & Address	**M/s Aries Color Chem Pvt Ltd**, PLOT NO Z/29 ,Z/30,DAHEJ SEZ PART I, Dahej, Tal. Vagra & Dist.: Bharuch- 392130
b)	Contact Person & Contact Numbers, Fax	Shri N M Patel, Plant Head Mobile: 9737531104 Shri Rajni Patel, Manager Mobile: 9998457675
c)	Year of Establishment	2012
d)	CCA Validity	GPCB has issued CCA with validity upto 29.04.2023.
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	As informed, during visit the industry was producing following product: • Acid Black 210 & DASA
g)	Main Raw Materials	Para Nitro Aniline (PNA), H Acid, Soda Ash, Caustic, Acetanilide, F C Acid, DASA, 4NADPSA etc.
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 123.19 KLD. B. As per CCA The industry is permitted to consume 239 KLD fresh water sourced from GIDC water supply.

b)	Wastewater segregation with specification of criteria of such segregation (if any)	The wastewater in the industry is generated from Dyes Plant and Intermediates Plant. The wastewater of industry is segregated into 02 streams of namely Low COD and High COD streams. The Low COD stream comprises wastewater from dyes plant with COD<4,000 mg/l. The High COD stream comprises wastewater from DASA and FC acid plant with COD> 8,000 mg/l and TDS > 25,000 mg/l. The industry has provided an ETP with capacity 150 KLD comprising of primary, secondary and tertiary treatment for Low COD wastewater and, MEE & Nutsche Filter system of capacity 48 KLD for treatment of High COD wastewater.
c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided 02 Collection cum Equalisation tanks of capacity 200 KL each. The industry has provided flow meter at the inlet of MEE and outlet of ETP discharge to GIDC drain. However, the industry has not provided flow meter at ETP inlet and MEE condensate.
d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry discharged on an average total wastewater of 86.32 KLD. B. As per CCA The industry is permitted to generate total 217 KLD industrial wastewater for discharge in GIDC drain after treatment.

e)	Wastewater treatment process with capacity and operational status For the low COD stream, the industry has provided ETP of capacity 150 KLD and was operational during visit. The ETP treatment process is briefed below: **Equalisation Tank-1 & 2→ Flash Mixers→ Filter Press→ Primary Clarifier→ Aeration Tank→Secondary Clarifier → Holding Tank → PSF → ACF → Tertiary Treatment Tank → Filter Press → Charcoal Treatment Tank → Filter Press → Final Treated Tank → Final Disposal HDPE Tank → GIDC drain** Boiler blowdown water, wastewater from worker washing area, dish washing area of canteen is also fed at the equalization tank of ETP. In the tertiary treatment tank, Ferrous sulphate and lime added and in the Charcoal treatment tank, charcoal is added to remove colour. For the High COD stream, following treatment (48 KLD) is provided: **Collection tank (20 Kl & 10 Kl)→MEE (3 stage)→Nutshce filter** The MEE condensate is reused in the process and the filtrate from nutsche filter is recycled into the collection tank of MEE. The sludge separated from nutshce filter is disposed in CHWTSDF.	
f)	On site Record keeping The industry has maintained logbook for ETP and MEE operation.	
g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has provided 5 KL HDPE Final Disposal Tank.
h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	GIDC drain connected to Pumping Station-C.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	The industry has provided flow meter at the inlet of MEE and outlet of ETP discharge to GIDC drain. However, the industry has not provided flow meter at ETP inlet and MEE condensate.
3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server The industry has provided TOC meter at the final outlet of ETP. However it is not connected with GPCB/CPCB server.		
4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed No ponding of waste water is observed during visit.		

5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Inlet of ETP at Equalization Tank
B. Outlet of ETP to GIDC drain

The analysis results of the samples collected and analysed by GPCB are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	8.81	8.94	6 to 9
Colour	50000	500	--
TSS	348	4	100
Fluorides	10	5.2	15
Sulphides	BDL	<1	5
Ammonical Nitrogen	19.6	BDL	50
Sulphate	14,437	8612	--
TKN	40.32	6.16	50
Nitrate Nitrogen	30.84	**97.7**	50
BOD (3 days at 27^0C)	996	44	100
COD	4465	188	250
Chlorides	9700	8235	--
Phenolic Compounds	1.86	0.18	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	8.75	8.71	6 to 9
Colour	>500	400	--
TSS	929	140	100
Fluorides	BDL	3.8	15
Sulphides	>50	BDL	5
Ammonical Nitrogen	21	BDL	50
Sulphate	742	576	--

TKN	28	5	50
Nitrate Nitrogen	52	**67.5**	50
BOD (3 days at 27^0C)	630	60	100
COD	3326	222	250
Chlorides	4578	2227	--
Phenolic Compounds	5.6	BDL	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

- The GPCB analysis results of the sample collected from the final outlet of treated wastewater into GIDC drain reveals that concentration of nitrate-nitrogen exceeds GPCB discharge standards. Exceedance of concentration of Nitrate-Nitrogen is also observed in the analysis results by third party laboratory.

6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has been issued closure directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 02.02.2017 & 16.03.2018.

7. Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.

- The industry has provided display board at the entry gate of the premises. However the display board was not updated.
- The industry has provided ETP comprising of biological treatment for low COD wastewater. The ETP was operational during visit. The industry has not provided flowmeter at wastewater inlet to ETP and at MEE condensate reused in the process.
- The final outlet of treated wastewater to GIDC drain exceeds CCA discharge standards.
- Hazardous waste stored in a facility provided by the industry without leachate collection and pumping facility to ETP for treatment.

Hence, it can be concluded that the industry is discharging wastewater to GIDC drains without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP and for MEE condensate reused in the process. Connectivity of OCEMS to GPCB/CPCB server need to be provided by the industry. The hazardous waste storage facility provided by the industry is without leachate collection and pumping facility to ETP for treatment. Therefore, the industry need to provide adequate hazardous waste storage facility.

8. Date of visit	16.11.2021
9. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE B-4

1. General Information of the Industry:		
a)	Name & Address	**M/s Accent Microcell Pvt. Ltd.** PLOT NO Z/59 ,Z/63,Z/64,DAHEJ SEZ PART I, Dahej, Tal. Vagra & Dist.: Bharuch- 392130
b)	Contact Person & Contact Numbers, Fax	Shri Naresh Chauhan, Infrastructure Manager Mobile: 7575803972
c)	Year of Establishment	2013
d)	CCA Validity	GPCB has issued CCA with validity upto 11.01.2025.
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	As informed, during visit the industry was producing Micro Crystalline Cellulose Powder.
g)	Main Raw Materials	Wood Pulp
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 440.02 KLPD. B. As per CCA The industry is permitted to consume 1002 KLPD fresh water sourced from GIDC water supply.
b)	Wastewater segregation with specification of criteria of such segregation (if any)	The wastewater generated in the process plant is treated in ETP of capacity 250 KLD.
c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided 02 collection tanks of capacity 50 KL each. The industry has provided flow meter at the outlet of ETP discharge to GIDC drain. However, no flow meter is provided at the inlet of ETP.

d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry discharged on an average total wastewater of 37.69 KLD. B. As per CCA The industry is permitted to generate total 792 KLD industrial wastewater, out of which 790KLD for discharge in GIDC drain after treatment and, 2 KLD is to be used for washing of spray dryer and to be collected separately and evaporated in dryer.
e)	Wastewater treatment process with capacity and operational status The industry has provided ETP of capacity 250 KLD comprising of biological treatment for generated wastewater which was operational during visit. The process brief is provided below: **Collection Tank-1 & 2→ Neutralisation Tank→ Cooling Tower→ Primary Clarifier→ Aeration Tank-1→ Aeration Tank-2→ Aeration Tank-3→ Aeration Tank-4→Secondary Clarifier → Treated Water Tank → Flash Mixer → Lamella clarifier → Final treated Tank → HDPE tank→GIDC drain** The inlet wastewater to ETP has temperature of about 75 ^{0}C. The industry has provided a cooling tower (induced draft) for cooling of wastewater to about 40 ^{0}C. The industry has provided belt press for drying of sludge from ETP.	
f)	On site Record keeping The industry has maintained logbook for ETP and MEE operation.	
g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has provided 80 KL final treated tank and 5 KL HDPE Final Disposal Tank before disposal to GIDC drain.
h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	GIDC drain connected to Pumping Station-C.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	The industry has provided flow meter at the outlet of ETP discharge to GIDC drain. However, no flow meter is provided at the inlet of ETP.
3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server The industry has provided TOC meter at final outlet of ETP however it has not been connected to CPCB/GPCB server.		
4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed During visit, no ponding of waste water is observed.		

5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Inlet of ETP at collection tank
B. Outlet of ETP (Final Effluent Disposal Tank) to GIDC drain

The analysis results of the samples collected and analysed by GPCB are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	1.27	7.76	6 to 9
Colour	125	85	--
TSS	8	14	100
Fluorides	2.3	1.05	15
Sulphides	1.44	1	2
Ammonical Nitrogen	8.4	BDL	50
Sulphate	61	4	--
TKN	14	2.24	100
Nitrate Nitrogen	12.63	1.1	10
BOD (3 days at 27^0C)	1760	28	100
COD	7014	111	250
Chlorides	2540	656	--
Phenolic Compounds	0.18	<0.1	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	1.5	7.5	6 to 9
Colour	170	130	--
TSS	120	90	100
Fluorides	0.65	1	15
Sulphides	>50	**4**	2
Ammonical Nitrogen	10	BDL	50
Sulphate	BDL	26	--

TKN	15	BDL	100
Nitrate Nitrogen	67	9	10
BOD (3 days at 27^0C)	1890	30	100
COD	8237	99	250
Chlorides	2970	630	--
Phenolic Compounds	0.3	0.2	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

- The GPCB analysis results of the sample collected from the final outlet of treated wastewater into GIDC drain reveals that concentration of all the parameters are within discharge norms.
- Exceedance of concentration of sulphide at the final outlet is observed in the analysis results by third party laboratory.

6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has been issued closure directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 12.04.2016, 28.11.2017 & 27.05.2020.

The industry has been issued Notice of Direction under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 06.12.2019.

7. Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.

- The industry has provided display board at the entry gate of the premises. However the display board was not updated.
- As informed, the industry has provided ETP of capacity 250 KLD, however as per CCA the industry is permitted to generated and discharge 792 KLD wastewater after treatment in ETP. As per the wastewater discharge records, the industry has discharged on an average 37.69 KLD treated wastewater to GIDC drain. As informed, the industry is reusing the balance untreated wastewater in its process.
- It was observed that the concentration of sulphide, nitrate-nitrogen and TKN prescribed in the CCA of industry is 2 mg/l, 10 mg/l and 100 mg/l respectively. The concentration of sulphide and nitrate nitrogen found stringent and that of TKN found relaxed as compared to the discharge standards prescribed to other industries in the area. GPCB may need to review the CCA issued to the industry.
- The industry has provided ETP sludge drying facility of belt press and drying beds on uncovered surface without any facility for leachate collection and pumping to ETP for treatment.

ETP Sludge drying area at the industry

Hence, it can be concluded that though the industry is discharging wastewater meeting the GPCB discharge standards, however the industry has provided ETP of treatment capacity (reportedly 250 KLD) lesser than the wastewater generation and discharge permission as per CCA (790 KLD). Therefore, the industry is considered as non-complying with the CCA condition. Moreover, the industry was issued multiple closure directions with respect to wastewater management in past by GPCB. The industry need to re-examine the quantity of wastewater generation to augment the ETP with adequate capacity. Hazardous waste was found stored on uncovered area for drying without leachate collection and treatment facility. The industry also needs to improve facility for intermediate storage and handling of hazardous waste by providing covered shed with leachate collection.

8. Date of visit	16.11.2021
9. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE B-5

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Indofil Industries Ltd.** Plot No. Z-8, SEZ-1, Dahej Tal. Vagra District Bharuch.
b)	Contact person & Contact numbers,Fax etc.	Shri Ankit Patel EHS officer 9601711690
c)	Year of Establishment	2008
d)	CCA Validity	GPCB has issued CCA vide order no –AWH-104853 dated 26.10.2019 with validity till 19.08.2024.
e)	Operational status of the industry	The unit was operational during the visit.
f)	Present manufacturing products	As informed, during visit the unit was manufacturing Agrochemical named Mancozeb and sodium sulphate as a by-product.
g)	Main raw materials	Main raw materials are as below- Carbon disulphide, Caustic soda, Zink sulphate, Ethylene diamine, Manganese sulphate, Hexamethelene tetra amine, Sodium lignosulphate.
2.	**Waste water management:**	
a)	Quantity of fresh water consumption and its source (**GIDC**/Bore well /Tankers)	**A. Based on past 06 months billing records** As per record provided by the unit, the average consumption of fresh water by the unit is 337.96 KL/day. **B. As per CCA** As per CCA unit has permitted for the consumption of total 555 KL of water per day including for Domestic purpose of 55 KL/Day, The source of fresh water is GIDC water supply.
b)	Waste water segregation & its criteria of segregation	• Waste water is segregated into two stream on the basis of high TDS (TDS=130000) and Low TDS (5000 ppm). • High TDS stream which is generated on an average of 330 KL/day from the manufacturing

		process is collected in collection tank of ETP, provides primary treatment and feed to MEE. • Low TDS stream on an average of 100 KL/day collected and treated into the ETP (capacity 400 KL/day) consisting of primary, secondary and tertiary treatment system. .
C)	Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.	As informed by the unit, the waste water storage tanks are provided in the respective plants. Once collection level reached respective waste is transfer to the collection tank of ETP for further treatment. Unit has provided provision of flow meter at the inlet of high TDS and low TDS waste water collection tank. Unit is maintaining the record of MEE operation by recording the MEE Feed, condensate formed, salt generated and treated waste water discharge flow meter reading in logbook.
d)	Total waste water generation (KL/Day)	**A. Based on past 6 months' flow record** Unit has provided flow meter at the inlet of ETP. As informed by the Unit, the unit is generating on an average of 100 KLD waste water of low TDS stream and 330 KLD waste water of high TDS stream. **A. As per CCA** As per CCA unit is permitted to generate 440 KL/day of total waste water including 40 KL/day of domestic waste water.
e)	**Waste water treatment process with capacity and operational status of ETP:** Unit is segregating the generated waste water into two streams of high TDS and Low TDS stream and provided separate treatment system for both stream. During the visit high TDS treatment system was in operation and treatment of low TDS stream was not operational due to some breakdown work in chlorination tank and ACF filters. **Treatment process for High TDS:** The unit has provided following treatment system for the high TDS effluent generated from the	

	manufacturing process- **Waste water→Collection Tank→Clarifier 1&2→Reaction Tank (PH-10.3 to 10.7)→clarifier 3→Equalization Tank A,B& C (pH 5.8 to 6.0)→ MEE Feed Tank→PSF→ACF→ MEE(4 effect)→Pushup Centrifuge** By raising the pH of waste water/ ML to 10.3 to 10.7, **$MnCO_3$** is precipitated which is feed to filter press, sludge separated and disposed to CHWTSDF site. The condensate formed by the operation of MEE is reused in the plant process as per CCA condition and salt generated in the form of Sodium sulphate is dried in spleen spin flash drier and packed in the HDPE bags and sold as a byproduct to end user. **Treatment process for low TDS:** The unit has provided ETP of reportedly 400 KLD capacity for the treatment of low TDS waste water stream. The ETP comprising of the primary, secondary and tertiary treatment system as below- **Collection Tank→Equalization Tank →BioreactorTank→Settling Tank→Chlorination tank→Treated water holding Tank→Pressure sand filters→Activated Carbon Filters→ Final Disposal Tank (HDPE Tank)→GIDC drainage system.** During the visit ETP was not in operation due to breakdown in chlorination tank and Activated Carbon Filter**. The unit was collecting low TDS waste in the collection tank of 460 KL capacity.**	
f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	Unit is maintaining onsite records in logbook of discharge of waste water in GIDC drainage system, quantity of high TDS waste water feed to MEE, salt and condensate formed by the operation of MEE.
g)	Provision of any intermittent storage /guard pond etc. before disposal	The final treated effluent is stored in HDPE Tank of capacity 10 KL before discharge into the GIDC drainage system.
h)	Mode of disposal of waste water (GIDC drain, direct, CETP/ZLD, Gardening etc.	Unit discharges its treated waste water into the GIDC drainage system leading to pumping station C
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	Unit has provided flow meter at MEE feed, MEE condensate , final treated effluent discharge to GIDC drain, inlet of low TDS stream and high TDS stream.
3.	OCEMS/PTZ/flow meter provision, Location of OCEMS, parameters monitored, working principals	Unit has installed Shimandzu make online TOC meter, pH meter and Magnetic flow

		meter at the final treated effluent discharge line. During the visit TOC meter and pH meter found nonoperational as no waste water was discharging by the unit.
4.	Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed.	No bypass arrangement and accumulation of waste water observed during the visit.
5.	Details of closure directions issued by GPCB in last 5 years	Direction dated 30.01.2019

6. Details of effluent /waste water samples collected and analysis results:

During the inspection, the inspecting team collected grab samples of final treated effluent from the final treated discharge tank and raw effluent from the equalization tank of ETP of low TDS. The ETP for the treatment of low TDS waste water was not in operation since 25.10.2021. However, samples were collected of previously treated stored water in HDPE tank.

The analysis results of GPCB laboratory are tabulate as below:

Name of the Parameters	Inlet to ETP (EQT)	Final treated Effluent at discharge point	GPCB standard Limit
pH	8.3	7.88	6.5 to 8.5
Colour	50	10	---
TSS	46	4.0	100
Fluorides	2.9	2.25	15
Sulphides	<1.0	Nil	5.0
Ammonical Nitrogen	BDL	1.12	50
TKN	2.8	3.9	--
Sulphate	379	677	1000
Nitrate Nitrogen	70.45	5.65	--
BOD (3 days at 27^0C)	14	<5.0	100
COD	65	6.0	250
Chlorides	111	90	600
Phenolic compounds	BDL	BDL	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis Results of Third-party lab:

Name of the	Inlet to ETP (EQT)	Final treated	GPCB standard

Parameters		Effluent at discharge point	Limit
pH	8.35	8.25	6.5 to 8.5
Colour	100	30	---
TSS	120	40	100
Fluorides	4.2	0.65	15
Sulphides	BDL	BDL	5.0
Ammonical Nitrogen	BDL	BDL	50
TKN	BDL	6	--
Sulphate	237	481	1000
Nitrate Nitrogen	59	6.0	--
BOD (3 days at 27^0C)	13	4	100
COD	44	12	250
Chlorides	81	46	600
Phenolic compounds	BDL	BDL	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis of samples reveals that the samples collected from final discharge point are meeting the norms prescribed by the GPCB

7.. **Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.:**

- The Unit has provided hazardous waste display board at the entrance gate of the unit. However, display board was not updated as on October 2021.
- Unit has provided the details of production, total waste water generation and waste water discharge to GIDC drainage system for last 03 financial years (2018-2019,2019-2020 and 2020-2021) The details of the same are given in the below table-

  Table: Quantity of total fresh water consumption, total waste water generation and production details for 2020-21,2019-2020and 2018-2019

Financial year	Quantity of Total fresh water consumption (KL/year)	Quantity of Total waste water generation (Kl/Year)	Total Production (MT/year)
2020-2021	136143	129903	36761
2019-2020	137708	128314.8	35999
2018-2019	121792	128212	34608

- As per data provided by the unit, the unit has consumed 136143 KL, 137708 KL and 121792

KL fresh water in financial year (FY) 2020-2021, 2019-2020 and in 2018-2019 respectively. Above data of waste water generation and total production in last three years shows that in 2018-2019 waste water generation was 3.52 KL/MT of production, in 2019-2020 the waste water generation was 3.83 KL/MT of production and in 2020-2021 the waste water generation was 3.70 KL/MT of production.

- The unit has generated waste water on an average of 355.90 KL/day in 2020-2021, 351.55 KL/day in 2019-2020 and 351.27 KL/day in 2018-2019 which is well within the consented quantity of 440 KL/day.
- Unit is segregating the generated waste water into two streams of high TDS and low TDS waste water stream. During the visit, treatment of high TDS waste water stream through MEE was in process. However, ETP provided for the treatment of low TDS waste water stream was not operational. Reportedly due to chlorination tank and ACF filter were under maintenance since 25.10.2021. The waste water generated was storing in the 460 M3 capacity storage tank provided by the unit in the plant premises.

Photograph showing the maintenance work in the chlorination tank

Photograph showing ACF under maintenance

- The unit has provided magnetic flow meter at the inlet of ETP of low TDS waste water stream, inlet of high TDS waste water stream, condensate formed and at the final treated waste water discharge line. As per record mentioned in the logbook, unit has discharge treated waste water into GIDC drainage system on 25.10.2021. The reading of Magnetic flow meter installed at the final discharge line was not matching with the record mentioned in the logbook of last discharged treated waste water.
- During the visit, large quantity of ETP sludge was stored in the the temporary shed provided by the industry. However proper leachate collection facility is not provided by the industry.

Photograph showing :large Quantity of ETP sludge stored in temporary shed in ETP area and seepages from stored sludge observed.

Huge quantity of ETP sludge stored in the temporary shed in ETP area.

ETP sludge storage in ETP area without any leachate collection Facility

- As per record provided by the unit, during the visit 616 MT of chemical sludge was stored near the ETP area in the temporary shed provided by the industry without any leachate collection facility.
- The overall housekeeping in the ETP area found unsatisfactory.

Conclusion:

During the visit ETP was not operational due to breakdown in chlorination tank and in Activate Carbon Filter (ACF). Industry needs to put more efforts in operation of all the ETP units in proper way so that ETP may be functional at all the time. During the visit, industry has stored about 616 MT ETP sludge in temporary sludge storage shed having concrete flooring at various locations near the ETP area. Industry has not provided proper leachate collection facility with the sludge storage sheds. Therefore, Industry needs to provide adequate ETP sludge storage shed with impervious flooring and proper leachate collection facility to avoid the seepages of leachate. Industry needs to dispose-off this large quantity of stored sludge in the ETP area.

8.	Date of Visit	27.10.2021
9.	Name of visiting officials	Shri Manoj Kumar Sharma, Sc-'B', CPCB, Shri B.D Prasad, DEE, GPCB

ANNEXURE B-6

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Meghmani Organics Limited (Unit-8)** Plot No. Z-31, Z-32 Dahej SEZ Part- 1, Tal. Vagra, Dist. Bharuch**.**
b)	Contact person & Contact numbers,Fax etc.	Shri Thakur Bhai S. Patel Unit Head, Mobile No.-9824006818 7567144279
c)	Year of Establishment	2013
d)	CCA Validity	CCA is valid upto **17.04.2023**
e)	Operational status of the industry	During the visit all three plants of the unit, namely CPC Blue, Alpha Blue and Beta Blue found operational.
f)	Present manufacturing products	During the visit unit was manufacturing following products- CPC Blue, Alpha Blue and Beta Blue
g)	Main raw materials	**Raw material for CPC Blue:** 1. Phthalic anhydride 2. T.G. Urea 3. Cuprous chloride 4. Ammonium molybdate 5. Solvesso-150 **Raw material for Beta blue:** 1. CPC Blue 2. Rosin 3. Xylene 4. Methyl ethyl ketone/ Iso butyl alcohol 5. Caustic soda and other additives 6. HCl **Raw material for Beta Blue:** 1. CPC blue 2. Sulphuric acid (98%)/Spent Sulphuric acid 3. Dispersing agent 4. Caustic soda & ammonia liquor

2.	**Waste water management:**	
a)	Quantity of fresh water consumption and its source (GIDC/Bore well /Tankers)	**A. : Based on past 06 months billing records** Based on past 06 months' (April 2021 to September 2021) data provided by the unit, the average total fresh water consumption is **904 KL/day** The source of fresh water is GIDC water supply. B. **As per CCA** As per CCA vide order no. AWH-94493 dated 13.07.2018 unit is permitted for total water consumption of **2404 KL/day** including domestic consumption of 25 KL/day .
b)	**Waste water segregation & its criteria of segregation** The waste water generated is segregated into two streams based on the content of the mother liquor- One stream about 150 KLD is of waste water/ML generated from CPC blue plant. After primary treatment and copper recovery it is feed to 4 Effect MEE followed by double effect MEE and Hot air drier for further treatment. MEE condensate is reportedly reused in the process. The second stream about 650-700 KLD is of wastewater generated from alpha blue plant and beta blue plant which is collected, neutralized and further treated into the conventional ETP.	
c)	**Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.** Unit has provided separate collection tanks for the waste water generated from CPC Blue plant, Alpha Blue plant and Beta blue plant. The capacity of the collection tanks is as below- As informed by the unit, for collection of waste water from CPC Plant, unit has provided 03 tanks, one for CPC Mother liquor with capacity 800KL, one for collection of Ammonium carbonate scrubbing liquid of capacity 500 KL and one for CPC wash tank of capacity 1000	

	KL. For collection of waste water generated from Alpha Blue plant and Beta Blue plant unit has provided two separate tanks of capacity 1000 KL and 1400 KL respectively. At inlets of waste water collection tanks unit has not provided any flow measuring device to access the actual generation of waste water.	
d)	Total wastewater generation	Based on last 06 months' data provided by the unit, the average waste water generation is **776.50 KL/day.** As per CCA unit is permitted to generate **1848 KL/day** specified by the GPCB.
e)	**Waste water treatment process with capacity and operational status of ETP:** For the treatment of waste water generated from CPC Blue plant, the unit has provided primary treatment system followed by MEE and hot air drier. The primary treatment system consisting of the following treatment units- **Collection Tank** (03 Numbers, 01 for CPC ML, One for ammonium carbonate and one for CPC wash tank)→**Reaction Tank→Filter press→ Neutralization tank→ MEE Feed Tank** (02 Numbers each of 45 KL). • The mother liquor from CPC blue react with ammonium carbonate generates from CPC blue plant forms copper sulphates and ammonium sulphate, which are mentioned as by products in the CCA. • The reaction mixture is feed to filter press where sludge is separated dried and and disposed to CHWTSDF site. • The filtered waste water is sent to copper recovery plant where copper sulphate is recovered and remaining waste water containing ammonium sulphate is neutralized and sent to MEE feed storage tank. Unit has provided one 4 effect MEE (Capacity 200KLD) followed by double effect MEE (Two Nos. with Capacity 120 KLD each, one operational & one standby), centrifuge and hot air drier system for the treatment of the above stream. Reportedly, MEE condensate is reused in the plant process and salt generated from hot air drier is ammonium sulphates, which is sell out as a byproduct. During the visit on 25.10.2021, MEE of the unit was not operational due to some maintenance work being carried out in hot air drier system.	

	For low TDS/Low COD The waste water generated from the Alpha blue plant and Beta Blue plant is collected, neutralized and treated in the conventional ETP. The waste water generated from the alpha blue plant is acidic in nature and it is treated with lime and passed into the filter press where Gypsum sludge is separated. The gypsum sludge generated is dried & packed and sold to Cement industries as per the condition of CCA. The filtered waste water is collected in the equalization tank of the ETP. The waste water from Beta blue plant which is neutral in nature and it is directly taken into equalization tank of the ETP. **The ETP consisting of the following units**- **Collection Tank→Neutralization Tank→Equalization Tank→Flocculator→Primary Settling Tank→Aeration Tank 1&2→Secondary clarifier Tank→Chlorination Tank→ final discharge Tank→GIDC Drainage system.** The unit has provided 03 sludge drying bed for drying of the collected sludge from the ETP. The dried ETP sludge is disposed at CHWTSDF. During the visit all sludge drying bed were observed full of sludge.	
f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	• Unit is maintaining the logbook of MEE feed through level difference from the storage tank and salt generated from hot air drier only. However flow meter is not provided at MEE Feed as well as at for MEE condensate. • Other records like waste water generation from various streams, wastewater discharge into GIDC drainage system, ETP sludge generation and disposal, TOC meter readings etc. are not maintained. • The flow meter and TOC meter installed at final treated discharge line found in non-working conditions during visit.
g)	Provision of any intermittent storage /guard pond etc. before disposal	No guard pond has provided by the unit.
h)	Mode of disposal of waste water(GIDC drain, direct, CETP/ZLD, Gardening etc.	Into GIDC Drainage system leading to pumping station-C.
i)	Provision for flow meters at MEE feed,	No flow meter provided at MEE Feed, MEE

	MEE condensate, RO etc. or any critical	condensate and measurement carried out through level difference of the storage tank.
3.	OCEMS/PTZ/flowmeter provision, Location of OCEMS, parameters monitored, working principals	Unit has installed flow meter and TOC meter at final treated waste water discharge line. However both flow meter and TOC meter were found non-functional during visit.
4.	Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed	No bypass/ponding/accumulation of waste water inside or outside the industrial premises was observed during the visit.
5.	**Details of closure directions issued by GPCB in last 5 years:** Closure direction, other direction, Notice, Show Cause Notice issued by GPCB based on various noncompliianceunder water Act in last five years are as under: Notice dated 27.05.2016 Notice dated 06.02.2017 Closure direction dated 21.05.2018 Other direction dated 30.01.2019 Notice dated 14.05.2019	

6. Details of waste water /waste water samples collected and analysis results:

The grab samples were collected: (1) final treated waste water from the final treated waste water discharge tank and (2) waste water sample from equalization tank of ETP. The results of the analysis parameters are tabulated below –

Analysis Results of GPCB Laboratory:

Name of the Parameters	Inlet to ETP (EQT)	Final Treated Waste water Disposal Tank	GPCB Standard Limit for Discharge
pH	8.84	7.30	6.5 to 8.5
Colour	250	200	---
TSS	82	72	100
Fluorides	4	4	15
Sulphides	<1.00	NIL	5.0
Ammonical Nitrogen	94	36.96	50
TKN	112	44.8	--
Sulphate	1083	983	--
Nitrate Nitrogen	14.43	9.12	50
BOD (3 days at 27^0C)	406	71	100
COD	1123	**310**	250
Chlorides	437	628	--
Phenolic compounds	BDL	BDL	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis Results of third Party Laboratory:

Name of the Parameters	Inlet to ETP (EQT)	Final Treated Waste water Disposal Tank	GPCB Standard Limit for Discharge
pH	8.89	7.38	6.5 to 8.5
Colour	350	350	---
TSS	130	100	100
Fluorides	0.59	0.69	15
Sulphides	3.0	BDL	5.0
Ammonical Nitrogen	109	43	50
TKN	123	48	--
Sulphate	1380	1217	--
Nitrate Nitrogen	16.2	10.5	--
BOD (3 days at 27^0C)	278	60	100
COD	1216	**312**	250
Chlorides	380	594	--
Phenolic compounds	BDL	BDL	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis results reveals that the samples collected from the final treated waste water discharge tank exceeds the discharge limit prescribed by the GPCB for the parameter COD**.**

7. Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.

During the visit following observations were noted by the visiting team-

- Unit has provided display board at the entrance gate of the unit. However, the display board was very old and details mentioned on it were not in readable condition.
- During the visit, MEE was not in operation due to some breakdown in hot air drier system as informed. The storage tanks provided for the storage of MEE feed waste water were found overflowing and entering into pit which leads to the ETP.

Photograph showing maintenance work in hot air drier

- As per record provided by the unit, from April 2021 to September 2021 unit has treated 18853 KL waste water through MEE & hot air drier.
- As informed, the Unit has sold 2676 MT ammonium sulphate and 34.5 MT copper sulphate as a byproduct recovered from mother liquor of CPC blue plant in last six months from April 2021 to September 2021.
- During the visit flow meter and TOC meter installed at final treated waste water discharge line found non-functional and no logbook was maintained for the record of quantity of waste water generated, discharge, ETP sludge generated and disposed etc.
- Analysis results reveals that the samples collected from the final treated waste water discharge tank exceeds the discharge limit prescribed by the GPCB for the parameter COD**.**
- All ETP units were filled with wastewater, however no flow through ETP units was observed. Chlorination system was not functional during the visit. Huge quantity of sludge was found deposited in the chlorination tank.

Photographs showing chlorination Tank full of sludge

Primary clarifier without overflow of waste water

- The sludge drying beds were observed overflowing and full of ETP sludge.

Photograph showing sludge drying beds with full of ETP sludge.

- The unit has not provided dedicated storage shed for ETP sludge. During the visit huge quantity of ETP sludge packed in HDPE bags were found stored partly in the closed shed and partly in the open area near the ETP.

Photograph showing ETP sludge kept in unorganized way

- Leachate from ETP sludge was observed at many places near the ETP area. Unit has not provided proper leachate collection facility with the ETP sludge storage area.

Photograph showing leachate flowing on ETP areas

- As per record provided by the unit, unit has disposed 149.6 MT ETP sludge from April 2021 to September 2021.
- During the visit, about 350 MT gypsum sludge and ETP sludge was stored in storage shed provided by the industry and about 400 MT of Gypsum and ETP sludge was found stored in open area in haphazard way in the premises of the industry at various locations.
- The unit has not provided proper storage area for storage of Gypsum and ETP sludge. There is no provision of leachate collection and transfer of leachate .

Photograph showing Gypsum sludge flowing on floor in the premises of unit

- As informed, the unit has disposed 687.70 MT gypsum sludge from April 2021 to September 2021.
- The overall housekeeping in the ETP premises as well as in MEE plant area observed very poor in view of hazardous waste handling, wastewater and leachate

	management. **Conclusion:** Industry discharging the waste water without meeting discharge norms as prescribed in CCA. The industry is not operating ETP in adequately as during the visit all the units of ETP were not found in operation. Therefore, industry needs to improve operation and maintenance of ETP or upgrade the same in order to meet the discharge norms. During the visit about 400 MT of hazardous waste (Gypsum and ETP sludge) was found stored in haphazard way on open land without impervious flooring at various locations in ETP area. Such haphazard storage and handling of hazardous waste has potential to contaminate the soil and groundwater in and around the premises of the industry. Industry needs to provide proper ETP and gypsum sludge storage shed with leachate collection facility to avoid seepages of leachate in open area. Industry needs to dispose-off all stored huge quantity of ETP sludge, Gypsum sludge and MEE salt on priority basis. Industry should provide proper storage tank of adequate capacity for the MEE feed waste water so that incase of any breakdown in MEE, the MEE feed waste water can be stored safely. During the visit flow meter and online analysers were found nonfunctional. Hence the industry should provide operational flowmeter and online analyzers at the final discharge line. Also, the industry need to maintain proper record of ETP operation, hazardous waste management in the proper logbook.	
8.	Date of Visit	25.10.2021
9.	Name of visiting officials	Manoj Kumar Sharma,Sc-B, CPCB B.D. Prasad, DEE, GPCB

NGT Matter OA 60/2021 (WZ)

ANNEXURE B-7

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Shiva Pharmachem Ltd.** Plot No. Z-88,Z-88/4 Dahej SEZ Part- 1, GIDC Dahej 392130, Tal. Vagra, Dist. Bharuch**.**
b)	Contact person & Contact numbers,Fax etc.	Mr. Shrish Gulwani Sr. Manager, EHS Mobile No. 7203080999
c)	Year of Establishment	2014
d)	CCA Validity	GPCB has issued CCA vide order no –AWH-107301 with validity till 15/04/2025
e)	Operational status of the industry	The industry was operational during the visit.
f)	Present manufacturing products	As informed, during visit the industry was manufacturing following products: **Acid chlorides:** • n-octanoyl chloride • Pivaloyl chloride • Chloroacetyl chloride • Dimethylbenzoyl chloride • Terepthaloyl chloride • Isopthaloyl chloride • Neo Decanoyl chloride **Multi product Plant:** • Cloquintocet Mexyl • 2 Heptanol • Ethyleneglycoldibenzoate(EGDB**)**
g)	Main raw materials	Following are the major raw material used by the industry- n- Octanoic acid, Thionyl chloride, TPP catalyst Pivalic acid, Monochloroacetic acid, Dimethyl benzoic acid, DMF catalyst, Terepthalic acid, Isopthalic acid, Neodecanoic acid, 5 Chloro 8 hydroxyquinoline,Toluene,2 Hepatanol, Monochloro acetic acid TBAB catalyst, SMBS catalyst, DNF, Methyl amyl ketone, hydrogen gas, Benzoic acid, Mono ethylene glycol, Triphenyl phosphate.
2.	**Waste water management:**	

a)	Quantity of fresh water consumption and its source (**GIDC**/Bore well /Tankers)	**A. Based on past 06 months billing records** As per record provided by the industry, the average consumption of fresh water by the industry is **357.79** KL/day. **B. As per CCA** As per CCA industry is permitted for the consumption of total water 360.5 KL/day including Domestic 10 KL/Day, and for gardening/green belt 20 KL/Day). The source of fresh water is GIDC water supply.
b)	**Waste water segregation & its criteria of segregation** The waste water generated is segregated into two streams. One stream is of wastewater having low COD /low TDS content (COD<25,000, TDS<20,000). The second stream having high COD/High TDS which is generated from the manufacturing process in acid chloride and multi-product plant. For the treatment of low COD/low TDS wastewater stream, the industry has provided conventional ETP consisting of primary, Secondary and tertiary treatment system. For the treatment of high COD/ high TDS stream, industry has provided primary treatment system followed by 03 effect MEE & Push up centrifuge.	
c)	**Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.** Industry has provided 4 tanks (02 Tanks are of 50 KL, one tank is of 45 KL and one is 20 KL Capacity) for the storage of high TDS/high COD waste water. Low COD/low TDS waste water is collected into the collection tank of combined ETP. The industry has provided 02 tanks of each 210 KL capacity for the collection of final treated waste water. Industry has provided separate flow meters at the inlet point of ETP i.e. before collection tank of ETP and MEE feed tanks.	
d)	Total waste water generation (KL/Day)	**A. Based on past 6 months' flow record** As informed by the Industry, the industry is generating on an average of **70 to 80** KLD waste water (**35 to 40** KLD of low COD/TDS waste water and **35 to 40** KLD of high COD/TDS waste water). **A. As per CCA** As per CCA industry is permitted to generate **118** KL/day of

		total waste water.
e)	**Waste water treatment process with capacity and operational status of ETP:** During the visit ETP, MEE and RO system found operational. As informed, about 80 KLD waste water is generated from both the streams. The industry has provided ETP for the treatment of low COD/TDS waste water stream. High COD/ high TDS stream of waste water is collected in storage tank and after providing primary treatment, feed to MEE followed by pushup centrifuge for further treatment. The details of the treatment processes of high COD/highTDS and low COD/TDS are given below- **Treatment process for High COD/TDS:** The industry has provided primary treatment system followed by MEE and Pushup centrifuge for the treatment of about 35-40 KLD high COD/high TDS waste water stream generated from the process plants. The details of the industry are as below- **Storage tanks (03 No.)-→Collection cum Neutralization tank-1→Filter press→ Neutralization Tank-2→ MEE Feed Tank→ 3 Effect MEE→Pushup centrifuge.** • The sludge generated from the filter press is dried and sent to CHWTSDE site for final disposal. • The condensate generated from MEE is fed to equalization tank of ETP provided for the treatment of low COD/TDS waste water. • The concentrate from MEE is fed to pushup centrifuge. The mother liquor generated from the push up centrifuge is feed into MEE. • The salt generated from the centrifuge is collected into the jumbo bag of 400 kg capacity and disposed to CHWTSDF site. **Treatment Process For low COD/TDS stream:** The industry has provided ETP for the treatment of low COD/low TDS waste water stream. About 35 to 40 KLD waste water is generated from this stream. The installed capacity of the ETP is 100 KLD. The ETP consisting of the primary, secondary and tertiary treatment system as below- **Collection Tank→Oil& Grease trap → Collection Tank→Equalization Tank 1&2→ Neutralization Tank 1&2 →Primary Settling Tank→Aeration Tank-1→Secondary settling Tank→ Aeration Tank -2→ Final Settling Tank→ Intermediate collection Tank 1&2→Pressure sand filter(PSF)→Activated Carbon Filter(ACF)→Final collection Tank 1 &2→Discharge into GIDC drainage System leading to pumping station -C** • Industry has provided one sludge collection sump, two sludge drying beds of each $20m^3$ capacity and one filter press.	

	• The waste water generated in the filter press is sent to equalization tank of ETP. • Sludge is dried in sludge drying bed and finally disposed to TSDF site. **RO System:** The Industry installed RO plant of capacity 45 KLD. The waste water from boiler blow down and cooling areas are collected and feed to RO system. RO permeate is reused back in the process and RO reject is sent to equalization tank of ETP. **Sewage Treatment Plant (STP):** Industry has installed Sewage Treatment Plant of capacity 40 KLD to treat the domestic waste water generated from the plant. The STP consisting of the following industrys- **Collection Tank→Oil & Grease trap→Feed Tank→Trans-biofilters→Collection Tank→Multigrade filters→Final Collection Chambers→GIDC Drainage along with treated industrial wastewater leading to pumping station C.**	
f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	Industry is maintaining the record in logbooks for the discharge of waste water in GIDC drainage system, quantity of waste water at the inlet of ETP and quantity of high COD waste water feed to MEE, salt and condensate formed.
g)	Provision of any intermittent storage /guard pond etc. before disposal	Industry has provided two final treated wastewater holding tanks of capacity of 210 KL each before final discharge into GIDC drainage system.
h)	Mode of disposal of waste water(GIDC drain, direct, CETP/ZLD, Gardening etc.	Industry discharges its treated waste water into the GIDC drainage system leading to Pumping Station-C.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	Industry has provided flow meter at MEE feed, MEE condensate, Inlet to ETP, final discharge to GIDC drain and at RO feed tank.
3.	**OCEMS/PTZ/flowmeter provision, Location of OCEMS, parameters monitored, working principals** Industry has installed Shimandzu make online TOC meter, pH meter and Magnetic flow meter at the final treated waste water discharge line. During the visit TOC meter and pH meter found operational. The reading of Flow meter was also verified with the record maintained in the logbook .During the visit TOC meter was displaying **53.51 PPM** value of TOC and pH meter displaying **7.74** value for pH of discharge treated waste water.	
4.	**Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed.** No bypass arrangement and accumulation of waste water was observed during the visit.	
5.	**Details of effluent /waste water samples collected and analysis results:** During the inspection on 25.10.2021**,** team collected the grab samples of final treated	

waste water at the discharge point to GIDC drainage system, outside the industry premises and raw waste water sample from equalization tank of the ETP. Furthermore on 18.11.2021, another grab sample of final treated wastewater from discharge point to GIDC drainage system was also collected as the industry was discharging wastewater into drainage system even after GIDC's gave instruction to all industries in the area regarding not to discharge wastewater into the GIDC drainage system from 17.11.2021 11:30 PM to 18.11.2021 11:30PM due to some maintenance work in the drainage network. The sample on 18.11.2021 was collected during visit of joint team to the area with GIDC officer Mr. Siddharth Parmar, AE, GIDC Dahej.

The analysis results are depicted in table below

The analysis results of GPCB laboratory are tabulate below:

Name of the Parameters	Inlet to ETP (EQT) on 25.10.2021	Final treated Waste water at discharge point on 25.10.2021	Final treated Waste water at discharge point on 18.11.2021	GPCB standard Limit
pH	1.72	7.43	7.39	6.5 to 8.5
Colour	70	50	150	---
TSS	26	28	38	100
Fluorides	8.1	3.4	3.15	15
Sulphides	27.46	Nil	<1	5.0
Ammonical Nitrogen	21.28	BDL	BDL	50
TKN	32.45	2.8	2.24	--
Sulphate	817	950	1240	--
Nitrate Nitrogen	51.97	72.76	10.53	--
BOD (3 days at 27^0C)	878	40	78	100
COD	2555	175	**329**	250
Chlorides	4880	6160	5346	--
Phenolic compounds	18.5	BDL	0.24	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis Results of Third party lab:

Name of the Parameters	Inlet to ETP (EQT Tank) on 25.10.2021	Final treated Waste water at discharge point on 25.10.2021	Final treated Waste water at discharge point on 18.11.2021	GPCB standard Limit

pH	1.9	7.48	7.3	6.5 to 8.5
Colour	100	80	250	---
TSS	40	50	**140**	100
Fluorides	0.99	0.79	1.2	15
Sulphides	71	BDL	2.5	5.0
Ammonical Nitrogen	15	BDL	BDL	50
TKN	37	BDL	BDL	--
Sulphate	972	1289	998	--
Nitrate Nitrogen	26.6	56.5	17.3	--
BOD (3 days at 27^0C)	580	48	**125**	100
COD	2840	204	**640**	250
Chlorides	5638	6131	5437	--
Phenolic compounds	20.3	BDL	0.34	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis results reveals that the samples collected from final treated waste water from the discharge point, exceeds the discharge limit prescribed by the GPCB for the concentration of COD as per GPCB analysis results. Exceedance in concentration of TSS, BOD and COD is also observed in third party laboratory analysis results.

6. **Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.:**

- The industry has provided hazardous waste display board at the entrance gate of the industry with updated information of the month of October 2021.
- During the visit Effluent Treatment Plant (ETP), MEE and RO system found operational.
- Industry has provided details of fresh water consumption, waste water generation and production for the financial year 2018-2019,2019-2020 and 2020-2021. The details of the same are given in the below table-

Table: Quantity of total fresh water consumption, total waste water generation and production details for 2020-21,2019-2020and 2018-2019

Financial year	Quantity of Total fresh water consumption(KL/year)	Quantity of Total waste water generation (Kl/Year)	Total Production (MT/year)
2020-2021	125880	33131	6148.060
2019-2020	87193	26057	8196.549
2018-2019	59788	24748	6523.666

- As per data provided by the industry, the industry has consumed 125880 KL, 87193 KL and 59788 KL fresh water in financial year (FY) 2020-2021, 2019-2020 and in 2018-2019 respectively. Above data of waste water generation and total production in last three years shows that in 2018-2019 waste water generation was 3.79 KL/MT of production, in 2019-2020 the waste water generation was 3.18 KL/MT of production and in 2020-2021 the waste water generation increased to 5.39 KL/MT of production.
- The industry has provided a designated shed for the storage of hazardous waste like ETP sludge, salt generated from MEE, process waste, distillation residue, spent sulphuric acid / Hydrochloric acid 30%/SBS etc.
- As per record provided by the industry, the industry has disposed of 499.025 MT ETP sludge at TSDF site BEIL Dahej, 575.37 MT process waste/distillation residue at Common incinerator BEIL Ankleswar, 7909.98 MT spent sulphuric acid/spent Hydrochloric acid 30%/SBS for reprocessing to M/s RSPL Ankleswar and 57.891 MT discarded empty drum and other plastic items to registered recyclers during April 2021 to September 2021.
- During the visit, 7.5 MT ETP sludge /MEE salt, 45.800 MT distillation residue and 14.700 MT process waste was stored in hazardous waste storage shed in well labeled drums and Jambo bags.
- During the visit, the seepage of acidic leachate was observed in one part/corner of the hazardous waste storage shade. Industry has not provided proper leachate collection facility for the collection of leachate and requisite proper arrangements for sending it to ETP for treatment.

Photograph showing Hazardous waste storage area

Photograph showing no leachate collection facility in one part of Hazardous waste storage area

- Analysis of sample of final treated wastewater to GIDC drainage reveals that the sample collected from final discharge point exceeds the discharge standard prescribed by GPCB for the parameters COD as per GPCB results.

Conclusion:

Industry was found discharging waste water into GIDC drainage system during shutdown period of drainage network by GIDC. Sample was collected from the the final discharge point. Analysis of sample reveals that the sample collected from final discharge point exceeds the discharge standard prescribed by GPCB for the parameters COD.

Industry needs to upgrade treatment system so that industry may achieve the discharge standard norms prescribed by GPCB. During the visit in the industrial premises it is observed that in hazardous waste storage shed the proper leachate collection facility is not provided. However, industry has provided concrete and impervious flooring in hazardous waste storage shed. Therefore, industry Needs to provide proper leachate collection facility in the hazardous waste storage shed.

7.	Details of closure directions issued by GPCB in last 5 years	Closure direction, other direction, Notice, Show Cause Notice issued by GPCB based on various noncompliance under water Act in last five years are as under: Direction dated 30.01.2019

		Closure direction dated 20.03.2019 Closure direction dated 07.05.2021
8.	Date of Visit	25.10.2021
9.	Name of visiting officials	Shri Manoj Kumar Sharma, Sc-'B', CPCB, Shri shri B.D Prasad, DEE, GPCB

ANNEXURE B-8

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Meghmani LLP (UNIT-II)** Plot No: Z-34, Dahej SEZ, Ta: Vagra, Dist: Bharuch – 392130**.**
b)	Contact person & Contact numbers,Fax etc.	Mr. Jitendra Modi, Unit Head Mob. No.9099936864
c)	Year of Establishment	2014
d)	CCA Validity	CCA is valid upto **18.11.2024**
e)	Operational status of the industry	During the visit industry was in operation.
f)	Present manufacturing products	During the visit unit was manufacturing following products- Pigment Red – 122, Pigment Violet – 19 and Pigment Violet – 23.
g)	Main raw materials	**Raw material for Pigment Red – 122 and Pigment Violet – 19:** 1. DMSS 2. Para Toluidene 3. Aniline 4. R Salt 5. Phosphoric Acid 6. Phosphorous Pentoxide 7. Iso Butanol 8. Di Methyl Formamide 9. HCl 10. Methanol 11. Caustic Soda Lye **Raw material for Pigment Violet – 23:** 1. Cr PV 23 2. DEG 3. NaCl 4. Carbazole 5. DES 6. MCB 7. Nitric Acid 8. Hydrogen 9. ODCB

		10. Sodium Acetate 11. Chloranil 12. BSC
2.	**Waste water management:**	
a)	Quantity of fresh water consumption and its source (GIDC/Bore well /Tankers)	**A. : Based on past 06 months' records** Based on past 06 months' (April 2021 to September 2021) data provided by the unit, the average total fresh water consumption is **513 KL/day.** The source of fresh water is GIDC water supply. B. **As per CCA** As per CCA vide order no. AWH-113887 dated 18.09.2021 unit is permitted for total water consumption of 1486 KL/day including domestic consumption of 40 KL/day.
b)	Waste water segregation with specification of criteria of such segregation (if any)	waste water generated from all plants is collected in single stream and treated in ETP.
c)	Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.	Industry has provided separate storage pit in the respective plants.
d)	Total wastewater generation	Based on last 06 months' data provided by the unit, the average waste water generation is 395.37 KL/day**.** As per CCA unit is permitted to generate **908 KL/day** specified by the GPCB.
e)	Waste water treatment process with capacity and operational status of ETP:	**D**uring the visit ETP was found operational. On an average of 400 KL/day waste water is generated from all plants ETP consisting of the following units- Equalization tank (02 No.)→Neutralization Tank(02 No.)→Primary clarifier→Aeration Tank-1 → Secondary clarifier→Aeration Tank 2→ Secondary clarifier-2→Pressure sand filter→ Activated carbon filter→Final treated waste water collection tank→Final discharge tank→

		GIDC Drainage system leading to pumping station C Industry has provided 02 filter press for separation of sludge. The sludge is separated dried and disposed to CHWTSDF.
f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	The industry maintaining the record of discharge of final treated waste water in the logbook.
g)	Provision of any intermittent storage /guard pond etc. before disposal	Industry has provided 01 No. of guard pond for the storage of treated waste water.
h)	Mode of disposal of waste water(GIDC drain, direct, CETP/ZLD, Gardening etc.	Through GIDC drainage system leading to pumping station C
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	In the existing system industry is not in requirement of MEE system. However, industry has installed MEE system for upcoming proposed new plant. The flow meters are provided at the inlet of collection tank of all three plants and discharge point of final treated waste water line.
3.	OCEMS/PTZ/flowmeter provision, Location of OCEMS, parameters monitored, working principals	Industry has installed online analyzers for the parameters of flow meter, BOD, COD, PH and TSS. However the connectivity of the analyzers were not provided with the server of GPCB and CPCB.
4.	Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed	No bypass/ponding/accumulation of waste water inside or outside the industrial premises was observed
5.	**Details of closure directions issued by GPCB in last 5 years:** Closure direction, other direction, Notice, Show Cause Notice issued by GPCB based on various non complianceunder water Act in last five years are as under: Closure direction dated 28.11.2017 Other direction dated 31.01.2019 Notice dated 14.05.2019	
6.	**Details of waste water /waste water samples collected and analysis results:** The grab samples were collected: (1) final treated waste water from treated waste water discharge tank and (2) waste water sample from equalization tank of ETP. The results of the analysis parameters are tabulated below – **Analysis Results of GPCB Laboratory:**	

Name of the	**Inlet to ETP (**	**Final Treated**	**GPCB Standard**

Parameters	EQT)	Waste water Disposal Tank	Limit for Discharge
pH	3.43	8.22	6.0 to 9.0
Colour	800	500	---
TSS	34	322	100
Fluorides	0.8	2.95	15
Sulphides	1.28	BDL	5.0
Ammonical Nitrogen	21.28	28	50
TKN	26.88	38	50
Sulphate	307	335	--
Nitrate Nitrogen	95.37	9.03	50
BOD (3 days at 27^0C)	292	57	100
COD	1271	**257**	250
Chlorides	1636	778	--
Phenolic compounds	2.29	0.32	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis Results of third Party Laboratory:

Name of the Parameters	Inlet to ETP (EQT)	Final Treated Waste water Disposal Tank	GPCB Standard Limit for Discharge
pH	3.47	8.82	6.0 to 9.0
Colour	>500	>500	---
TSS	190	**338**	100
Fluorides	7.7	BDL	15
Sulphides	10.25	BDL	5.0
Ammonical Nitrogen	22	34	50
TKN	26	41	50
Sulphate	6	210	--
Nitrate Nitrogen	79	97	50
BOD (3 days at 27^0C)	190	60	100
COD	982	**269**	250
Chlorides	1052	1581	--
Phenolic compounds	2.6	0.2	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis results reveals that the samples collected from the final treated waste water discharge tank exceeds the discharge limit prescribed by the GPCB for the parameters COD and TSS**.**

7.	Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.

During the visit following observations were noted by the visiting team-

- Industry has provided hazardous waste and other relevant information display board at the gate of the factory. However, this board was not updated since long time.
- During the visit industry was not discharging the treated waste water into the GIDC drainage system. Reportedly due to high COD value (COD>250) in the final treated waste water and was collecting in the guard pond.
- Analysis results reveals that the samples collected from the final treated waste water discharge tank exceeds the discharge limit prescribed by the GPCB for the parameters COD and TSS.
- During the visit, the equalization tank-1 of ETP was observed with large quantity of sludge deposition.
- Floating sludge & flocks was observed in the laundering of primary as well as of secondary clarifier. Also, foaming in aeration tank-2 was observed during the visit.
- During the visit, large quantity of ETP sludge was stored in the sludge storage shed as well as some quantity in open space near the ETP Equalization tank. Some sludge was also spread into the Equilization tank of ETP
- Industry has not provided leachate collection system with Sludge storage area for collection of leachate..

Photograph: Showing ETP sludge kept in open space near Equalization Tank of ETP

- During the visit reportedly, about 200 MT ETP sludge was stored in the industry premises. Most of the ETP sludge was stored in the covered sludge storage shed without any leachate collection system.

Conclusion:

- Industry is discharging waste water into the GIDC drainage system without meeting discharge norms prescribed by the GPCB. Therefore, industry needs to upgrade ETP to meet the discharge norms. During the visit, Reportedly, 200 MT of ETP sludge was stored in the hazardous waste storage area having concrete flooring in industry premises. Industry has not provided sludge storage shed of adequate capacity and proper leachate collection facility is not provided in the storage shed. Industry needs dispose-off the

	stored waste to CHWTSDF on priority basis. The industry should provide covered shed of adequate capacity with leachate collection facility. Industry has installed online analyzers at the line of final discharge point. However, connectivity is not provided with the server of GPCB and CPCB. Industry should provide connectivity of online TOC analyzer with the server of GPCB and CPCB. Industry should update the information related with hazardous waste handling and other relevant information on the display board at the entrance gate of the industry.	
8.	Date of Visit	16.11.2021
9.	Name of visiting officials	Manoj Kumar Sharma,Sc-B, CPCB B.D. Prasad, DEE, GPCB

ANNEXURE C-1

1.	**General Information of the Industry:**		
	a)	Name & Address	**Grasim Cellulosic (A Unit Of Grasim Ind. Ltd),** Plot No.1, GIDC Vilayat, Tal: Vagra, Dist: Bharuch
	b)	Contact Person & Contact Numbers, Fax	Pramod Kumar DGM Process Mob.No. – 8347014079
	c)	Year of Establishment	2014
	d)	CCA Validity	CCA is valid till 23/03/2024
	e)	Operational Condition	The industry was operational during inspection.
	f)	Present manufacturing Products	As informed, during inspection production of Viscose staple fiber, Carbon Disulphide, Sulphuric Acid, Anhydrous Sodium Sulphate are under production.
	1)	Main Raw Materials	Following are the major raw materials used by the industry: Pulp, Sodium Hydroxide, Sulphur.
2.	**Wastewater Management**		
	a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record, average Water consumption: 14637 KLD B. As per CCA • Industrial: 17705 KL/day • Domestic: 400 KL/day
	b)	Wastewater segregation with specification of criteria of such segregation (if any)	• Vapor condensate generated from Sodium Anhydrous Sulphate plant having very low COD (approx. 4000 KLD) is segregated and taken into RO System for further reuse in plant. • Highly acidic wastewater stream containing Zinc generated from Fiber washing (approx. 250 KLD) is segregated for separate neutralization and zinc recovery from this stream. • There is no segregation of other effluent streams and all other remaining streams (total approx. 8750 KL/d) are taken into receiving tank of main ETP.

	c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	Storage tank/Collection tank of capacity 1000 KL is provided for Vapor condensate generated from Sodium Anhydrous Sulphate plant before taking into RO Plant. Highly acidic wastewater stream containing Zinc generated from Fiber washing is directly taken into Collection tan of Zinc recovery cum neutralization system and there is no storage tank for the same. The remaining streams are taken directly in the receiving tank of the ETP and there is no storage tank for the same. Flow meter is provided for Vapor condensate generated from Sodium Anhydrous Sulphate plant at inlet of RO (RO feed) and at RO permeate. Flow meter is provided for Highly acidic wastewater stream containing Zinc at inlet of Zinc recovery cum neutralization system. Flow meter is not provided for other streams inlet.
	d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	**A. Based on past 6 months' flow record** The industry has not provided flow meter at the inlet of all wastewater streams. Based on flow reading of final discharge to GIDC drainage system, average discharge is about 12769 KLD. **B. As per CCA, wastewater generation as under:** • Industrial: 15943 KLD • Domestic: 385 KLD • Total discharge of the Grasim group of companies along with waste wastewater received from Grasim- Chemical Division and Grasim (Chemical Division- Epoxy plant): 19400 KLD

	e)	Wastewater treatment process with capacity and operational status	The industry has segregated waste water generated from the various operations into following streams and provided separate treatment schemes. **Vapor condensate generated from Sodium Anhydrous Sulphate plant:** For treatment of this stream separate Cooling tower, holding tank, Pressure sand filter, Activated Carbon Filter and RO plant is provided. The present generation of this stream is approx. 4000 KLD and reported capacity of the RO plant is 12000 KLD. The RO permeate is reused in the plant and RO reject is taken into main ETP for further treatment. **Highly acidic wastewater stream containing Zinc generated from Fiber washing**: For pre-treatment of this stream Zinc recovery cum Neutralization system consisting of Reaction tanks (2 nos.) with caustic dosing system, Cone Settler, Flash Mixer with Lime slurry dosing system, Clarifier, Sludge Thickener and Filter Press is provided. Reported Capacity of this treatment system is 400 KLD. The bottom slurry of the cone settler contains mainly Zinc and it is reused in the plant. Sludge generated from the Clarifier is thickened in Sludge Thickener and further dewatered in Filter Press. Sludge cake of filter press is Gypsum waste which is sold to cement industries. The clarified effluent from the Clarifier is taken into Equalization cum Neutralization tank of main ETP for further treatment along with other wastewater streams. **Other Streams of wastewater treatment (Main ETP)**: For treatment of other streams of wastewater, unit has provided main ETP (reported capacity of ETP 36000 KLD) consisting of following treatment units: ETP comprises of: Receiving tank → Bar Screen → Grit Chamber → Equalization cum Neutralization tank → Primary Clarifier→ Cooling tower → Aeration tank→ Secondary clarifier→ Treated effluent holding tank-1 (1500 KL)→ Treated effluent holding tank-2(1000 KL)→disposal to GIDC. In addition, unit has 3 nos. of Guard Pond of capacity 24000 KLD each. Chemical generated from Primary Clarifier as well as Bio Sludge generated from Secondary Clarifier is dewatered in Filter Press and further disposed to Common TSDF site. **Domestic Wastewater:** Unit has provided STP (reported capacity 1000 KLD) for treatment of domestic wastewater. The treated domestic wastewater is used for gardening plantation within premises.

	f)	On site Record keeping	Records for the operation of ETP & RO plant and wastewater discharge was observed properly maintained by the unit.
	g)	Provision of any intermittent storage/guard pond etc. before disposal	Unit has provided Treated wastewater holding tank-1 of capacity 1500 KL and Treated wastewater holding tank of capacity 1000 KL. In addition, unit has 3 nos. of Guard Pond of capacity 24000 KLD each.
	h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal in GIDC drainage through Vilayat Pumping Station.
	i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	Flow meter is provided at final discharge line. Flow meter is provided at Vapor condensate generated from Sodium Anhydrous Sulphate plant feed to RO Plant and at RO permeate line. Also, Flow meter is provided at inlet of Highly acidic wastewater stream taken to Zinc recovery cum Neutralization system. However, flow meter at inlet to main is not provided.
3.	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**		TOC meter (XYLEM MAKE) is provided at discharge line of the unit and was found operational during visit. During Visit value of TOC displayed on the TOC meter was: TOC- 39.2 mg/l, COD- 126.6 mg/l, BOD-24.1 mg/l, TSS- 12.9 mg/l. However, online connectivity of OCEMS to GPCB/CPCB is not provided.

4.

Details of Effluent Samples collected and analysis results
Two sample collected from final discharge & collection tank of ETP (Low COD)
GPCB analysis report

Parameters	**Equalization cum Neutralization tank**	**Final Discharge to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	7.46	7.19	5.5-9.0
Colour	250	175	--
TSS	556	34.0	100
Fluorides	1.2	5.15	15
Sulphides	90	3.2	5
Ammonical Nitrogen	5.0	BDL	50
Sulphate	7590	5284	--
TKN	6.72	BDL	50
Nitrate Nitrogen	21.22	1.6	50
BOD (3 days at 27^0C)	566	64	100
COD	2693	**251**	250
Chlorides	255	1044	--
Phenolic Compounds	0.16	0.20	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	**Equalization cum Neutralization tank**	**Final discharge to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	7.62	7.21	5.5-9.0
Colour	>500	300	--
TSS	1490	**190**	100
Fluorides	7.6	1.0	15
Sulphides	>50	**18**	5
Ammonical Nitrogen	BDL	BDL	50
Sulphate	247	743	--
TKN	BDL	BDL	50
Nitrate Nitrogen	51	7.5	50
BOD (3 days at 27^0C)	340	70	100
COD	1600	**318**	250
Chlorides	228	1087	--
Phenolic Compounds	2.65	0.37	5

Note: all values are reported in mg/l except pH and color

- GPCB analysis of samples reveals that the sample collected from final discharge point exceeds marginally the discharge standard for COD.

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	During visit no bypass/ponding/accumulation of wastewater inside or outside the premises was observed.
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	Closure direction, other direction, Notice, Show Cause Notice issued by GPCB based on various noncompliance under water Act in last five years are as under: Notice dated 06.02.2017 Other direction dated 30.01.2019 Notice dated 03.05.2019 Closure direction dated 21.07.2019
7.	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.**	
	• The unit has provided display board outside the premises. • During visit, all sections of main ETP (except one Secondary Clarifier) were found in operation, the one Secondary Clarifier was found not working and it was reported that this Secondary Clarifier was under maintenance. • GPCB analysis of samples reveals that the sample collected from final discharge point exceeds marginally the discharge standard for COD. • Separate Treatment system including RO plant provided for treatment of Vapor condensate generated from Sodium Anhydrous Sulphate plant found in operation. • Zinc recovery cum Neutralization Pre-treatment provided for Highly acidic wastewater stream containing Zinc generated from Fiber washing was found in operation**.** • About 25000 KL of treated wastewater was observed in the Guard Ponds. As informed that there was frequent shut of GIDC Pumping station in this month and therefore they had stored this treated wastewater in Guard Ponds within premises. • Industry also receives treated wastewater from the nearby Sister concerned units namely- (1) Grasim Industries Ltd- Chemical Division (Chlor Alkali) and (2) Grasim Industries Ltd (Chemical Division- Epoxy) into Treated wastewater holding cum discharge tank of the unit for further combined discharge into GIDC drainage system. As per CCA condition, total discharge including these two Industries shall be maximum 19400 KL/d. • As per samples collected from the final treated waste water from the Two sister concern units of Grasim Industries limited namely M/s Grasim Industry Chemical Division (Chlor alkali) was found meeting the discharge norms and second sister concern unit namely M/s Grasim Industry Ltd. Chemical Div. Epoxy) is not meeting the discharge norms. • During visit, large quantity of ETP sludge generated from main ETP (Bio sludge & chemical sludge mix) was observed partly stored inside storage shed and partly outside storage shed. As informed, about 3000 MT ETP sludge is stored inside the storage shed and about 50 MT of Gypsum waste generated from the neutralization process, stored on concreate flooring outside this storage shed. • Industry has not provided proper leachate collection facility in the hazardous waste storage area. • Sulphur waste was found stored in Sulphur yard. As informed, the stored sulphur waste is	

	approx. 60 MT. • Cellulose waste was found stored in the storage area near Spinning plant. As informed, approx. 110 MT of cellulose waste is stored with the unit. **Conclusion:** Industry is discharging the waste water almost meeting the discharge norms prescribed in the CCA as per GPCB analysis results. Industry has not provided proper leachate collection facility in the sludge storage area. Industry should provide proper/adequate leachate collection facility in the sludge storage area. Industry needs to dispose-off ETP sludge/gypsum sludge periodically to avoid accumulation of large quantity of ETP sludge.	
8.	**Date of visit**	17/11/2021
9.	**Name of Visiting Officials**	Manoj Sharma, Sc. B-CPCB B.D. Prasad, DEE-GPCB

ANNEXURE C-2

1.	**General Information of the Industry:**		
	a)	Name & Address	**Grasim Industries Ltd- Chemical Division (Chlor Alkali),** Plot No.1, GIDC Vilayat, Tal: Vagra, Bharuch
	b)	Contact Person & Contact Numbers, Fax	Mr. Vikas Valand AGM, EHS Mobile no– 8347001243
	c)	Year of Establishment	2013
	d)	CCA Validity	02/03/2024
	e)	Operational Condition	The industry was operational during inspection.
	f)	Present manufacturing Products	**As informed, during inspection products**- Caustic Soda lye, Hydrogen, liquid chlorine/HCl, PAC, Chlorinated paraffin wax, Aluminum chloride, Stable bleaching powder, Calcium Chloride (36-40%) was under production.
	1)	Main Raw Materials	**Following are the major raw materials used by the industry:** Sodium Carbonate, Salt, $BaCO_3$, SBS, NaOH, HCl, Aluminum Hydrate, Paraffin, Chlorine, Lime, Rock Phosphate, Amyl Alcohol, Hydrazine Hydrate, PAC Liquid, Aluminum Ingot, etc.
2.	**Wastewater Management**		
	a)	Quantity of Fresh water consumption and its source	**A. Based on past 6 months billing record** Average Water consumption: 14133 KL/day B. As per CCA • Industrial: 18059 KL/day • Domestic : 466 KL/day
	b)	Wastewater segregation with specification of criteria of such segregation (if any)	The generate waste water is collected in one stream only. therefore no segregation of wastewater.
	c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	Waste water is stored in the respective plant and collected in the ETP for further treatment.

	d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	**A. Based on past 6 months' flow record** The industry has not provided flow meter at the inlet. Based on flow meter reading of final discharge to GIDC drainage system, average discharge is about 709.66 KLD. B. As per CCA • 5220 KLD treated effluent shall be disposed to GIDC drainage line through Discharge line of Grasim Cellulosic. • 400 KLD treated effluent shall be reused/recycled/reduced. • 3 KLD effluent shall be reused in PAC plant. • 352.8 KLD domestic wastewater shall be treated separately.
	e)	Wastewater treatment process with capacity and operational status	**Treatment system for all Industrial wastewater streams:** Industrial effluent generated is treated in the ETP (reported installed capacity: 1000 KLD) consisting of primary treatment facility. 400 KL/d of treated wastewater is reused in the Brine purification operation in Chlor-Alkali plant and the remaining is discharged into GIDC drainage line through discharge line of Grasim Cellulosic. **Treatment system comprises of Collection cum pH Correction tank (1500 KL)→ Treated wastewater holding tank (350 KLD)→disposal to GIDC drainage line through discharge line of Grasim Cellulosic.** **Reuse system for 400 KL/d of treated wastewater:** **Collection cum pH Correction tank→ Lamella Clarifier→Reuse in Brine Sludge Purification.** **Domestic Wastewater:** Unit has provided STP of capacity 300 KL/d for treatment of domestic wastewater and treated domestic wastewater is used for gardening plantation within premises.
	f)	On site Record keeping	Records for the operation of ETP and wastewater discharge are properly maintained in the logbook.
	g)	Provision of any intermittent storage/guard pond etc. before disposal	Treated Wastewater holding tank of capacity 350 KL is provided before final discharge into Grasim Cellulosic Discharge tank leading GIDC drainage line.
	h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal in GIDC drainage through discharge tank of Grasim Cellulosic.

	i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	Flow meter is provided at final discharge point. However, flow meter at inlet to ETP is not provided.
3.	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**		Online Analyzer for pH and SS is provided at final outlet and was found operational during visit. During Visit, value of pH and SS displayed on the Online Analyzer were 7.66 and 7 mg/l respectively. Online connectivity of OCEMS to GPCB/CPCB is provided.

4.

Details of Effluent Samples collected and analysis results
Two sample collected from final discharge & collection tank of ETP (Low COD)
GPCB analysis report

Parameters	**Final treated wastewater holding tank**	**GPCB Discharge Standards as per CCA**
pH	6.79	5.5-9.0
Colour	30	--
TSS	20	100
Fluorides	1.2	15
Sulphides	BDL	5
Ammonical Nitrogen	1.12	50
Sulphate	329	--
TKN	1.68	50
Nitrate Nitrogen	1.85	50
BOD (3 days at 27^0C)	12	100
COD	114	250
Chlorides	4241	--
Phenolic Compounds	0.3	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	**Final treated wastewater holding tank**	**GPCB Discharge Standards as per CCA**
pH	6.87	5.5-9.0
Colour	50	--
TSS	90	100
Fluorides	0.90	15
Sulphides	BDL	5
Ammonical Nitrogen	BDL	50
Sulphate	278	--
TKN	BDL	50
Nitrate Nitrogen	14.5	50
BOD (3 days at 27^0C)	25	100
COD	96	250
Chlorides	4732	--
Phenolic Compounds	1.15	5

Note: all values are reported in mg/l except pH and color

- Analysis of samples reveals that the sample collected from final discharge point to Grasim Industry Chemical division meets the standard prescribed by the GPCB.

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	During visit no bypass/ponding/accumulation of wastewater inside or outside the premises was observed.
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	No Closure direction, other direction, Notice, Show Cause Notice issued by GPCB based on various noncompliance under water Act in last 5 years.
7.	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.**	
	• The unit has provided display board outside the premises. • As per CCA condition, unit has to provided ETP comprising of primary, secondary & tertiary treatment facilities. However, unit has provided ETP consisting of only primary treatment facility. • During visit, provided ETP for treatment of wastewater was found operational. • During visit, huge quantity of process Sludge (mainly Phospho Gypsum Sludge & Brine Sludge) was found stored in the specified Storage area within the plant premises. Half portion of this storage area is open to sky. Considerably very high moisture was observed in the stored sludge. Unit has not provided proper leachate collection system with the sludge storage area. However, industry has provided concreate flooring in the sludge storage area. Leachate/spillage were observed from the sludge storage area. As informed, presently about 6000 MT of process sludge was stored in the sludge storage area. **Conclusion:** • industry meeting the discharge norms prescribed by the GPCB. Huge quantity (6000 MT) of process Sludge (mainly Phospho Gypsum Sludge & Brine Sludge) was found stored in the specified Storage area having concrete flooring within the plant premises. However, storage area capacity seems to be inadequate. Unit has not provided proper leachate collection system with the sludge storage area. The industry needs to provide adequate sludge storage area with proper leachate collection facility and needs to be covered entire sludge storage area.	
8.	**Date of visit**	17/11/2021
9.	**Name of Visiting Officials**	Manoj Sharma, Sc. B, CPCB B D Prasad, DEE , GPCB

ANNEXURE C-3

1.	**General Information of the Industry:**		
	a)	Name & Address	**Grasim Industries Ltd (Chemical Division- Epoxy),** Plot No. 1 GIDC Vilayat, Tal: Vagra, Bharuch
	b)	Contact Person & Contact Numbers, Fax	Mr. Mitul Prajapati – 8347007041 Mr. Sanjeev Verma -8347007150
	c)	Year of Establishment	2013
	d)	CCA Validity	01/12/2023
	e)	Operational Condition	The industry was operational during inspection.
	f)	Present manufacturing Products	As informed, during inspection products- Liquid Epoxy Resin, Solution cut resin, Can Coating resin, Reactive Diluent, Hardener, Formulation and salt were under production.
	1)	Main Raw Materials	Following are the major raw materials used by the industry: Toluene, Xylene, ECH, BPA, NaOH, 1 4-BD, Ecorol, etc.
2.	**Wastewater Management**		
	a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record Average Water consumption: 377 KL/day B. As per CCA • Industrial: 1556 KL/day • Domestic : 102 KL/day
	b)	Wastewater segregation with specification of criteria of such segregation (if any)	• Process stream (High COD/high TDS stream) is segregated and collected separately which is further taken into MEE for treatment. • Other streams of wastewater like ISBL tank farm wastewater, ECH tank farm wastewater, cooling tower Blow down (Low COD/ Low TDS wastewater) are collected in another Collection tank for further treatment into ETP. MEE condensate and domestic wastewater are also taken into Low COD/Low TDS wastewater Collection tank.

	c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	• Three Collection tanks of capacity 250 KL each (total capacity 750 KL) for collection & storage of Process wastewater (High COD/TDS wastewater) is provided. • Two collection tank of capacity 725 KL each (total capacity 1450 Kl) for collection & storage of Low COD/TDS wastewater (all other streams including MEE condensate and domestic wastewater) is provided.
	d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	**A. Based on past 6 months' flow record** • Flow meter is not provided at the inlet of process wastewater (High COD/TDS wastewater), its generation measurement is carried out by measurement of level difference. • Flow meter is provided at MEE inlet and MEE condensate. Based on level measurement record, average generation of High COD/TDS wastewater is 217.54 KL/d and based on flow meter reading average MEE feed is 212.34 KL/d. • Flow meters are provided at inlet of some streams of Low COD/TDS wastewater, flow meter at all inlet lines are not provided and measurement is carried out by level difference. Based on level difference measurement record, average Low COD/TDS wastewater (including MEE condensate and domestic wastewater) generation is 455.64 KL/d. • Flow meter is provided at final discharge line. Based on flow reading of final discharge line, average wastewater discharge is 395.22 KL/d. It is informed the balanced treated wastewater is reused in the plant. **B. As per CCA** • 757 KL/d total industrial wastewater generation is permitted. • 85 KL/d domestic wastewater generation • Salt recovery system (MEE) consisting of 3 stage crystallizer shall be installed for salt recovery from untreated effluent of Epoxy. • Industrial effluent along with domestic wastewater shall be treated in ETP consisting of primary, secondary & tertiary treatment facility and treated effluent shall be discharged into GIDC drainage line. • 90 KL/d treated effluent shall be reused.

	e)	Wastewater treatment process with capacity and operational status • For High COD • For Low COD	The industry segregated waste water generated from the various operations into following streams and provided separate treatment schemes. **High COD/TDS stream:** Pretreatment comprising of neutralization is provided for High COD/TDS wastewater before taking into MEE. Unit has provided four stage MEE (reported capacity 320 KL/d) along with Centrifuge and ATFD for treatment of high COD/TDS wastewater and salt recovery from the same. Salt generated from ATFD is by-product of the unit. Condensate generated from MEE and ATFD is taken into Low COD/low TDS ETP for further treatment. **Low COD/TDS stream:** Low COD streams including domestic wastewater generated is treated in the ETP (reported installed capacity : 725 KL/d) comprising of **Collection tank→ Aeration tank-1→ Secondary-1→ Aeration tank-2→ Secondary clarifier-2→ Filter feed tank→ Multi Grade filter→ Activated carbon filter→ Treated wastewater holding cum discharge tank (1410 KL)→ disposal to GIDC drainage line through discharge line of Grasim Cellulosic.**
	f)	On site Record keeping	Records for generation of various streams of wastewater, the operation of ETP, MEE, ATFD, etc. and discharge of treated wastewater were observed properly maintained.
	g)	Provision of any intermittent storage/guard pond etc. before disposal	Treated wastewater holding cum discharge tank of capacity is 1410 KL before final discharge into Discharge tank of Grasim Cellulosic leading GIDC drainage line is provided.
	h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal in GIDC drainage through discharge tank of Grasim Cellulosic.
	i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	Flow meter is provided at MEE inlet and MEE condensate. No any RO plant with the unit. Flow meter is provided at final discharge line.

3.	**OCEMS/ PTZ/ Flow meter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**	TOC meter (WTW MAKE) is provided at final outlet and was found operational during visit. During Visit value displayed on the TOC meter were: COD- 107.9 mg/l, TSS- 15.2 mg/l, BOD- 37.2 mg/l, TOC- 45.2 mg/l. Online connectivity of OCEMS to GPCB/CPCB is provided.

4.

Details of Effluent Samples collected and analysis results
Two sample collected from final discharge & collection tank of ETP (Low COD)
GPCB analysis report

Parameters	**Final Treated wastewater holding cum discharge tank**	**GPCB Discharge Standards as per CCA**
pH	7.97	5.5-9.0
Colour	20	--
TSS	42	100
Fluorides	0.84	15
Sulphides	BDL	5
Ammonical Nitrogen	BDL	50
Sulphate	96	--
TKN	1.12	50
Nitrate Nitrogen	14.58	50
BOD (3 days at 27^0C)	30	100
COD	117	250
Chlorides	5735	--
Phenolic Compounds	<0.10	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	**Final Treated wastewater holding cum discharge tank**	**GPCB Discharge Standards as per CCA**
pH	7.89	5.5-9.0
Colour	50	--
TSS	**170**	100
Fluorides	0.3	15
Sulphides	BDL	5
Ammonical Nitrogen	BDL	50
Sulphate	53	--
TKN	BDL	50
Nitrate Nitrogen	43.4	50
BOD (3 days at 27^0C)	30	100
COD	116	250
Chlorides	5441	--
Phenolic Compounds	0.16	5

Note: all values are reported in mg/l except pH and color

- As per GPCB analysis results, the concentration of all the parameters are within discharge norms.
- As per third party analysis of sample reveals that the sample collected from final discharge point are exceeding the discharge standard for the parameter of TSS prescribed by the GPCB.

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	During visit no bypass/ponding/accumulation of wastewater inside or outside the premises was observed.
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	No Closure direction, other direction, Notice is issued by GPCB under water Act in last five years:
7.	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.**	
	• The unit has provided display board outside the premises. • As per GPCB analysis results, the concentration of all the parameters are within discharge norms. • During visit, MEE provided for treatment High COD/TDS wastewater and Salt recovery from the same was found in operation. • Also, ETP provided for low COD/TDS wastewater is found in operation. However, bulking/ floating of sludge was observed in Secondary Clarifier-1 and floated sludge was carrying over to Aeration tank-2. • During visit, large quantity Process residue waste and ETP sludge are stored in the provided storage shed of the unit. As reported, the present stock of process residue waste is about 90 MT which has to be sent to M/s RSPL for co-processing and present stock of ETP Sludge is about 67 MT which has to be sent to Common TSDF of BEIL for disposal. **Conclusion:** As per GPCB analysis results, the industry is discharging wastewater meeting the discharge norms prescribed in the CCA. The hazardous waste management and overall housekeeping was found satisfactory.	
8.	**Date of visit**	17/11/2021
9.	**Name of Visiting Officials**	Manoj Kumar Sharma, Sc. B-CPCB B D prasad, DEE-GPCB

ANNEXURE D-1

1. General Information of the Industry:		
a)	Name & Address	**M/s Hemani Crop Care Private Limited,** Plot No. 73-74, GIDC Saykha, Tal. Vagra & Dist.: Bharuch-392130
b)	Contact Person & Contact Numbers, Fax	Shri Vatsal Ghariya, Manager EHS Mobile: 8460386758
c)	Year of Establishment	2020
d)	CCA Validity	GPCB has issued CCA with validity upto 05.10.2025.
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	As informed, during visit the industry was producing following product: • Metribuzine, Ethofumesate
g)	Main Raw Materials	Di Methyl Sulphate, Sulfuric Acid, Soda Ash, Toluene, Quinone, Ethanol etc.
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 241.04 KLD. B. As per CCA The industry is permitted to consume 373 KLD fresh water sourced through GIDC water supply.
b)	Wastewater segregation with specification of criteria of such segregation (if any)	**For In-house treatment**: The wastewater of industry is segregated into 02 streams of namely Low COD and High COD streams. As informed, the High COD stream comprises wastewater with COD about 5000 mg/l & TDS>50,000 mg/l from Metribuzine & Ethofumesate process. The industry feeds the High COD wastewater directly with Vertical Thin Film Dryer (VTFD) of capacity 80 KLD. The Low COD stream comprises wastewater with COD<3000 mg/l and TDS<8000 mg/l coming from Ethofumesate process, VTFD condensate, Boiler blowdown, Cooling water Blowdown, Sewage and Reject of RO provided for Boiler water. For the Low COD stream, the industry has provided an ETP of capacity 500 KLD comprising of primary, secondary and tertiary treatment.

c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	For the Low COD stream, the industry has provided 02 Collection tanks with capacity 199 Kl each. For the High COD stream, the industry has provided 01 underground tank of 25 KL capacity. The industry has provided flowmeter (digital & magnetic) at final outlet of ETP and a rotameter at the inlet of VTFD. However, the industry has not provided any flowmeter at the inlet of ETP.
d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry discharged on an average total wastewater of 80.32 KLD. B. As per CCA The industry is permitted to generate total industrial wastewater of 150.7 KLD including 45 KLD High COD wastewater and 105.7 KLD Low COD wastewater. Total 139.45 KLD wastewater shall be discharged into GIDC drainage which includes 33.75 KLD condensate from VTFD and 105.7 KLD wastewater treated in ETP.

<table>
<tr><td>e)</td><td colspan="2">Wastewater treatment process with capacity and operational status

The treatment process for high COD and Low COD were operational during visit. The process brief is provided below:

• For High COD

Storage tank→ feed tank→VTFD (02 nos.)

The industry directly feeds High TDS wastewater into VTFD without any provision for MEE/stripper etc. Condensate generated from VTFD is treated in ETP provided for Low COD stream. Residue from VTFD is disposed to CHWTSDF.

• For Low COD

The treatment process for the low COD stream comprises of:
Buffer Tank 1 & 2→Collection cum equalization Tank 1 &2 →Primary Treatment Tank→Filter Press→Primary Clarifier→Filter Press→Aeration Tank-1→Secondary Clarifier-1→ Aeration Tank-2→Secondary Clarifier-2→ Intermediate Holding Tank→PSF&ACF→Treated Holding Tank→To GIDC Drain

In the collection cum equalization tank, the industry adds Ferrous Sulphate and Hydrogen Peroxide for carrying out Fenton reaction. Primary clarifier provided was found defunct and was used as storage tank only. The industry also adds Sodium Hypochlorite in intermediate tank before secondary clarifier II for colour reduction.</td></tr>
<tr><td>f)</td><td colspan="2">On site Record keeping
During visit, the industry provided updated logbook for ETP and VTFD.</td></tr>
<tr><td>g)</td><td>Provision of any intermittent storage/guard pond etc. before disposal</td><td>The final treated wastewater from ETP (after passing through PSF & ACF) is transferred to treated holding tank of capacity 416 KL.</td></tr>
<tr><td>h)</td><td>Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)</td><td>Dahej-Vilayat Pipeline leading final pumping station.</td></tr>
<tr><td>i)</td><td>Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent</td><td>The industry has provided flow meter (digital/magnetic) at final outlet of ETP and a rotameter at the inlet of VTFD. However, the industry has not provided any flow meter at the inlet of ETP.</td></tr>
<tr><td colspan="3">3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server

The industry has provided TOC meter at the final outlet of the ETP. However, the TOC meter was not connected with CPCB/GPCB server.</td></tr>
</table>

4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed

No bypass/ponding was observed during visit.

5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Inlet of ETP
B. Final outlet of ETP to GIDC drain

The analysis results of the samples collected and analysed by GPCB are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	9.57	7.61	6.0-9.0
Colour	200	20	--
TSS	86	12	100
Fluorides	2.5	1.35	15
Sulphides	137	2.08	5
Ammonical Nitrogen	142.8	14	50
Sulphate	2476	1260	--
TKN	176.4	22.96	50
Nitrate Nitrogen	37	2.39	50
BOD (3 days at 27^0C)	1552	54	100
COD	6502	240	250
Chlorides	352	314	--
Phenolic Compounds	1.28	0.13	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	9.43	7.4	6.0-9.0
Colour	>500	50	--
TSS	180	80	100
Fluorides	1.5	1	15
Sulphides	>50	**30**	5

Ammonical Nitrogen	180	18	50
Sulphate	2487	1353	--
TKN	189	26	50
Nitrate Nitrogen	14.6	5.6	50
BOD (3 days at 27^0C)	1410	50	100
COD	6400	208	250
Chlorides	342	298	--
Phenolic Compounds	1.48	0.1	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

- The GPCB analysis results of the sample collected from the final outlet of treated wastewater into GIDC drain reveals that concentration of all the parameters are within discharge norms.
- The analysis results by third party laboratory of the sample collected from final outlet of treated wastewater to GIDC drain reveals that concentration of Sulphide exceeds discharge norms.

6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has not issued Notice of Direction and Closure Direction in last 5 years.

7. Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.

- The industry has provided digital display board at the entry gate of the premises.
- The analysis results by third party laboratory of the sample collected from final outlet of treated wastewater to GIDC drain reveals that the final treated wastewater exceeds discharge norms.
- The industry has not provided OCEMS connected to CPCB/GPCB server at the final outlet of ETP.
- The High TDS/COD wastewater generated by the industry is directly fed to VTFD without any provision for MEE/stripper. During visit near the VTFD area, intense odour of VOCs & Ammonia causing severe irritation to eyes and throat was observed. It was gathered that the VTFD condensate (with Temperature about 55 ^{0}C) generated is directly stored in open underground storage pit. High generation of Vapour fumes from the VTFD condensate tank was observed during visit as depicted in photographs below.

Vapour fumes from the VTFD condensate open tank

- As the VTFD condensate fumes were causing eyes and throat irritation with strong odour, analysis results of High TDS stream carried out by the industry was verified. As per the analysis results, the High COD/TDS stream fed directly to VTFD has concentration of TDS as 3,38,175 mg/l, concentration of COD as 5,686.7 mg/l, concentration of Ammonical nitrogen as 30.5 mg/l, and concentration of sulphate as 2,28,500 mg/l. Moreover, the Low Boiler % (v/v) (80 ^{0}C -90 ^{0}C) in the High COD/TDS stream is 80%. Stream with such concentration of COD and low boilers should be subjected to stripper & MEE before being fed to VTFD. Also, the VTFD condensate tank should closed with provision for vapour sealing to restrict release of VOCs/ammonia into atmosphere.
- During visit it was observed that about 40 MT of hazardous waste was stored haphazardly stored inside the premises of the industry. Dust, similar in appearance to VTFD salt & other hazardous waste, was observed on road, storm water drains, plants, open ground etc. To verify the observation, drinking water was poured over dust on road, drains, plants, open ground etc. and pH was checked through pH strips. It was gathered that the dust was highly alkaline similar to VTFD salt. Therefore, the hazardous waste storage and handling at the industry was inadequate.


AERATION

Hence, it can be concluded that the industry is non-complying to the CCA conditions. The industry has not provided OCEMS connected to GPCB/CPCB server. The toxic fumes from VTFD condensate has potential to damage health and safety of human population, flora and fauna in and around the premises of the industry. About 40 MT of hazardous waste stored haphazardly in the premises of the industry spreading in form of dust over open ground, roads etc. has potential to contaminate soil and groundwater in and around the premises of the industry. The industry need to improve effluent treatment efficacy and hazardous waste storage and handling measures. The industry need to provide stripper and MEE system before VTFD and provide closed tanks for VTFD condensate. Digital Flowmeter at inlet of ETP and VTFD need to be provided along with connectivity of OCEMS to CPCB/GPCB server.

8. Date of visit	17.11.2021
9. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE E-1

1. General Information of the Industry:		
a)	Name & Address	M/s Mehali Papers Pvt. Ltd., Plot No. D2/11/B/2, GIDC Dahej, Bharuch
b)	Contact Person & Contact Numbers, Fax	Shri Jai Prakash Mishra, Environment & Administration Head Ph: 9978600914
c)	Year of Establishment	2016
d)	CCA Validity	GPCB has issued CCA with validity upto 28.10.2021
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	As informed, during visit industry was producing uncoated paper.
g)	Main Raw Materials	Waste paper & lignite coal
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 3,418.95 KLD. B. As per CCA The industry is permitted to consume 3,970 KLD fresh water for industrial purposes sourced from GIDC water supply.
b)	Wastewater segregation with specification of criteria of such segregation (if any)	The industry has provided a ETP for treatment of wastewater from paper recycling & manufacturing process, captive power plant boiler blow down and cooling tower blow down.
c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided collection tank of capacity 350 KL at the inlet of the ETP. The industry has provided flow meter at treated wastewater outlet from the ETP. However, no flow meter is provided at the inlet of ETP.

d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry discharged on an average total wastewater of 2067.64 KLD. B. As per CCA The industry is permitted to generate total 2822 KLD wastewater. The industry is permitted to reuse 50 KLD treated wastewater for gardening and 50 KLD treated wastewater for sprinkling in coal storage.
e)	Wastewater treatment process with capacity and operational status The industry has provided ETP with reported capacity 5000 KLD for treatment of wastewater. The ETP comprises of: Collection tank→Hill screen (for waste paper removal)→service tank→Dissolved Air floatation tank→Primary clarifier→Aeration tank→Secondary clarifier→Dual Media Filter→discharge to GIDC drain The industry has provided thickener for sludge separation. During visit, the ETP was found operational.	
f)	On site Record keeping The industry has maintained logbook for ETP operation.	
g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has not provided any guard pond.
h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Presently, the treated wastewater from the industry is discharged into GIDC drainage system leading to CETP Dahej.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	The industry has provided flow meter at final outlet of treated wastewater to GIDC drain. However, flow meter at the inlet of ETP is not provided.
3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server The industry has provided TOC meter (TOC-4200) connected with GPCB/CPCB server.		
4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed No bypass/ponding of wastewater observed during visit within the premises of the Industry.		

5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Inlet of ETP at collection tank
B. Outlet of treated wastewater to GIDC drain

The analysis results of the samples collected and analysed by GPCB are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	6.18	7.39	6 to 9
Colour	500	300	--
TSS	8632	70	100
Fluorides	3.8	1.85	15
Sulphides	11.2	2.56	5
Ammonical Nitrogen	BDL	BDL	50
Sulphate	89	106	--
TKN	2.24	1.68	--
Nitrate Nitrogen	27.14	2.88	--
BOD (3 days at 27^0C)	2718	**146**	100
COD	9614	**703**	250
Chlorides	813	770	--
Phenolic Compounds	0.5	0.18	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	6.22	7.34	6 to 9
Colour	>500	>500	--
TSS	6813	125	100
Fluorides	0.58	BDL	15
Sulphides	8	3	5
Ammonical Nitrogen	BDL	BDL	50
Sulphate	65	75	--

TKN	BDL	BDL	--
Nitrate Nitrogen	36	19	--
BOD (3 days at 27^0C)	1232	**145**	100
COD	6160	**660**	250
Chlorides	758	691	--
Phenolic Compounds	0.76	0.33	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

- The analysis results of the sample collected from the final outlet of treated wastewater into GIDC drain reveals that concentration of BOD and COD exceeds GPCB standards.

6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 05.09.2018, 02.08.2019 & 19.07.2021.

7. Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.

- The industry has provided digital display board at the entry gate of the premises.
- The industry has provided ETP comprising of biological treatment for the wastewater generated from waste paper processing, boiler blow down and cooling water blow down. The final treated wastewater discharged into the GIDC drain exceeded GPCB CCA standards. Moreover, as per CCA 50 KLD of treated wastewater is permitted to use for gardening purpose and 50 KLD of treated wastewater in cold storage sprinkling purpose. Usage of wastewater exceeding discharge standards for such purposes may lead to contamination of soil and groundwater.
- The industry has not provided flow meter at wastewater inlet.
- The industry has provided captive waste to energy plant of reported capacity 1.5 MW. As per CCA, the industry is permitted to utilize non-recyclable plastic waste, de-inking waste, primary sludge from ETP, ETP biological sludge in the waste to energy plant as fuel. As informed, the industry has utilized 2251 MT primary sludge and 2286 MT non-recyclable plastic waste in the waste to energy plant.

Hence, it can be concluded that the industry is discharging wastewater to GIDC drains and using for gardening and other purposes without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP.

8. Date of visit	27.10.2021
9. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE E-2

1. General Information of the Industry:		
a)	Name & Address	**M/s. Viswaat Chemical Limited,** Plot No. D-3/10, GIDC Dahej, Ta. Vagra, Dist. Bharuch
b)	Contact Person & Contact Numbers, Fax	Mr. Prem Yadav Mob.: 8849841768
c)	Year of Establishment	2019
d)	CCA Validity	GPCB has issued CCA with validity upto 22.05.2024
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	As informed, during visit the industry was producing Lauryl Alcohol – EO Condensates, Ceto Stearyl Alcohol - EO Condensates, Behnly Alcohol – EO Condensates, Allyl PolyEthylene Glycol, Castor Oil – EO Condensates, Iso Tri Decyl Alcohol - EO Condensates, Fatty Acid - EO Condensates, Poly Ethylene Glycols, Poly Sorbates & Tri Ethanol Amines.
g)	Main Raw Materials	Ethylene Oxide, Propylene Oxide etc
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 89.30 KLD. B. As per CCA The industry is permitted to consume 169 KLD fresh water for industrial purposes sourced from GIDC water supply.
b)	Wastewater segregation with specification of criteria of such segregation (if any)	The industry has provided an ETP for treatment of wastewater from process plants, boiler blow down and steam condensates.
c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided collection tank of capacity 350 KL at the inlet of the ETP. The industry has provided flow meter at treated wastewater outlet from the ETP. However, no flow meter is provided at the inlet of ETP.

d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry discharged on an average total wastewater of 6.76 KLD. B. As per CCA The industry is permitted to generate total 24 KLD wastewater.
e)	Wastewater treatment process with capacity and operational status The industry has provided ETP with capacity 72 KLD for treatment of wastewater. The treatment process at the ETP is: Equalisation tanks→Primary Mixer→Flocculator→Primary clarifier→Aeration tank-1→Secondary clarifier-1→ Aeration tank-2→Secondary clarifier-2→Tertiary Mixer→ Tertiary clarifier→ Holding Tank→Pressure Sand Filter→Activated Carbon Filter→Treated Effluent Holding Tank discharge to GIDC drain through tanker. During visit, the ETP was found operational.	
f)	On site Record keeping The industry has maintained logbook for ETP operation.	
g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has provided 4 nos. of Treated wastewater tanks of 19 KL Capacity each.
h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	The industry discharges treated wastewater into CETP by tanker. As per CCA, industry is permitted to discharge directly into Final pumping station.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	The industry has provided flow meter at final outlet of treated wastewater. However, flow meter is not provided at the inlet of the ETP.

3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server

The industry has provided OCEMS connected with GPCB/CPCB server.

4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed
No bypass/ponding of wastewater observed during visit within the premises of the Industry.

No bypass/ponding of wastewater was observed during visit.

5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Inlet of ETP at equalization tank
B. Final Treated Holding Tank

The analysis results of the samples collected and analyzed by GPCB are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain (Treated HoldingTank)**	**GPCB Discharge Standards as per CCA**
pH	7.11	7.48	6 to 9
Colour	150	20	--
TSS	960	58	100
Fluorides	0.8	1.2	15
Sulphides	4.48	<1	5
Ammonical Nitrogen	BDL	BDL	50
Sulphate	173	240	--
TKN	2.8	2.24	--
Nitrate Nitrogen	1.84	80.85	--
BOD (3 days at 27^0C)	1328	76	100
COD	5264	**370**	250
Chlorides	142	177	--
Phenolic Compounds	1.22	0.16	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet to GIDC drain (Treated HoldingTank)**	**GPCB Discharge Standards as per CCA**
pH	7.15	7.39	6 to 9
Colour	>500	80	--
TSS	910	80	100
Fluorides	BDL	BDL	15
Sulphides	35	BDL	5
Ammonical Nitrogen	BDL	BDL	50
Sulphate	113	145	--
TKN	BDL	BDL	--
Nitrate Nitrogen	1.5	70	--
BOD (3 days at 27^0C)	1140	39	100

COD	4960	143	250
Chlorides	116	166	--
Phenolic Compounds	BDL	BDL	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

- The GPCB analysis results of the sample collected from the final outlet of treated wastewater reveals that concentration of COD exceeds GPCB standards.

6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has not been issued Notice of Direction and Closure Direction in last 5 years.

7. Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.

- The industry has provided display board at the entry gate of the premises; however the display board was not updated.
- The industry has provided ETP comprising of primary, secondary and tertiary treatment for the wastewater generated in the industry. The industry is permitted to discharge into final pumping station through tankers. However, the industry presently discharges final treated wastewater into CETP through tankers.
- The final treated wastewater of the industry exceeded GPCB CCA standards.
- The industry has not provided flow meter at wastewater inlet.

Hence, it can be concluded that the industry is discharging wastewater to CETP through tankers without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP.

8. Date of visit	27.10.2021
9. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE E-3

1. General Information of the Industry:		
a)	Name & Address	**M/s Rossari Biotech Ltd.,** Plot no. D-3/24/3, GIDC, Galenda, Bharuch
b)	Contact Person & Contact Numbers, Fax	Shri Ashok Kumar Chauhan, Unit Head Ph: 8866923232
c)	Year of Establishment	2020 (March)
d)	CCA Validity	GPCB has issued CCA with validity upto 17.03.2025
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	During visit, industry was producing: textile and laundry chemicals, construction chemicals and protease from plant origin
g)	Main Raw Materials	Acrylic acid, Caustic Soda, Formic Acid, Styrene, Hydrogen Peroxide, Acetic Acid etc.
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 168.39 KLD. B. As per CCA The industry is permitted to consume 398 KLD fresh water for industrial purposes sourced from GIDC water supply.
b)	Wastewater segregation with specification of criteria of such segregation (if any)	The wastewater generated in the industry includes process effluent, washing water from blending plant, effluent from soft water plant and Reject of RO provided for GIDC fresh water. All the wastewater generated in the industry is treated in the ETP provided at the industry.
c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided collection cum neutralization tank at the inlet of the ETP. The industry has provided flowmeter at inlet and outlet of ETP.

d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry discharged on an average total wastewater of 64.35 KLD. B. As per CCA The industry is permitted to generate total 130 KLD industrial wastewater and discharge to CETP Dahej.
e)	Wastewater treatment process with capacity and operational status The ETP was operational during visit. The treatment process in the ETP is: Screen chamber→Collection cum neutralization tank→Dissolved Air Floatation→Intermediate tank→Aeration tank-I→Clarifier-I→Aeration Tank-II→Clarifier II→Holding tank→PSF→ACF→Final treated tank In the Dissolved Air floatation (DAF) tank, poly-electrolytes are added for coagulation & flocculation. The scum from DAF is sent to sludge drying beds. In the Aeration Tank-I, sewage generated in the industry and DAP/urea is added. Reject of Reverse Osmosis plant provided for GIDC fresh water is discharged in the holding tank after Clarifier II.	
f)	On site Record keeping The industry has maintained logbook for ETP operation.	
g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has provided final treated tank of 100 KL capacity.
h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	The industry discharges through GIDC drainage network leading to CETP Dahej.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	The industry has provided flowmeter at inlet and final outlet of ETP.

3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server

The industry has provided OCEMS with flowmeter at final outlet, however the OCEMS is not connected with GPCB/CPCB server.

4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed

No by-pass/ponding was observed during visit.

5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Inlet of ETP at collection tank
B. Final Outlet of treated wastewater to CETP Dahej

The analysis results of the samples collected and analysed by GPCB are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet**	**GPCB Discharge Standards for CETP member industry**	**GPCB Discharge norms to other industries in the area**
pH	5.01	7.52	6.5 to 8.5	5.5-9.0
Colour	250	150	300	--
TSS	760	***1192***	300	100
Fluorides	5.8	4.9	--	15
Sulphides	11.52	BDL	2	5
Ammonical Nitrogen	2.8	1.12	150	50
Sulphate	36	82	1000	--
TKN	8.96	2.24	--	50
Nitrate Nitrogen	10.97	*97.02*	--	50
BOD (3 days at 27^0C)	1029	*323*	1000	100
COD	5484	*1375*	3000	250
Chlorides	182	753	4000	--
Phenolic Compounds	0.25	0.59	3	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	**Inlet of ETP**	**Final Outlet**	**GPCB Discharge Standards for CETP member industry**	**GPCB Discharge norms to other industries in the area**
pH	4.99	7.98	6.5 to 8.5	5.5-9.0
Colour	>500	>500	300	--
TSS	1020	***1800***	300	100
Fluorides	0.63	0.51	--	15
Sulphides	9	BDL	2	5
Ammonical Nitrogen	BDL	BDL	150	50
Sulphate	36	23	1000	--
TKN	14	3	--	50
Nitrate	0.78	*70*	--	50

Nitrogen				
BOD (3 days at 27^0C)	1115	***1190***	1000	100
COD	4640	***5680***	3000	250
Chlorides	50	705	4000	--
Phenolic Compounds	1.3	BDL	3	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

- The GPCB analysis results of the sample collected from the final outlet of treated wastewater to CETP Dahej reveals that concentration of TSS exceeds CCA standards.
- The analysis results by third party laboratory of the sample collected from the final outlet of treated wastewater to CETP Dahej reveals that concentration of TSS, BOD and COD exceeding discharge norms as per CCA.

6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has not been issued Notice of Direction and Closure Direction in last 5 years.

- **Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.**

- The industry has provided updated display board along with digital display board at the entry gate of the premises.
- The industry has provided ETP comprising of Dissolved Air floatation for primary treatment and aeration tanks for secondary treatment. The reject of RO provided for GIDC fresh water supply is added at the holding tank for secondary clarifier. The industry discharges treated wastewater into pipeline leading to CETP Dahej.
- During visit, it was observed that the Dissolved Air Floatation system provided in the ETP was not operated since long.
- The final outlet from ETP of the industry exceeds GPCB discharge norms as per CCA for concentration of Total Suspended Solids. This shows that the primary treatment comprising of Dissolved Air floatation at the ETP is inefficient in treatment or is not operational. Moreover, the industry is discharging its treated wastewater to CETP Dahej and GPCB has prescribed CETP inlet norms to the industry. However, CETP Dahej is non-operational since beginning and is discharging wastewater to final pumping station without any treatment. Therefore, the final outlet of the ETP was also compared with the discharge standards prescribed to other industries in the area discharging into GIDC drainage network and found that concentration of TSS, Nitrate nitrogen, BOD and COD exceeds the discharge standards.
- The industry has not provided connectivity of OCEMS to CPCB/GPCB servers.

Hence, it can be concluded that the industry is discharging wastewater to CETP Dahej without complying with CCA discharge norms prescribed for inlet of CETP. Moreover, as the CETP Dahej is non-operational since beginning, the wastewater from the industry is being discharged into GIDC final

pumping station without further treatment. Therefore, the industry need to provide wastewater treatment facility to comply with discharge norms prescribed to industries discharging directly into GIDC drainage network. The industry also needs to provide connectivity of OCEMS to CPCB/GPCB servers.	
7. Date of visit	27.10.2021
8. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE E-4

1.	**General Information of the Industry:**		
	a)	Name & Address	**M/s ANAGHA CHEM,** PLOT NO D-2/CH-318 , GIDC , DAHEJ, TAL: VAGRA, DIST: BHARUCH
	b)	Contact Person & Contact Numbers, Fax	Nikhil Kulkarni- 9426477995 Milind LB- 9978132608 Deepak Prajapati- 7990128065
	c)	Year of Establishment	2018
	d)	CCA Validity	07/09/2022
	e)	Operational Condition	The industry was operational during visit.
	f)	Present manufacturing Products	Carde Amide Oxidation
	g)	Main Raw Materials	Nitric acid, propyl alcohol, 3-nitro 1-propanol,hydrogen gas, meta nitro benzyl chloride, nitric acid (4%), mono methyl urea, acetic anhydride, cyano acetic acid etc.
2.	**Wastewater Management**		
	a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for last 6 month is 38KL/D B. As per CCA Total water consumption is 89KLD Domestic—5KLD Industrial--79KLD Gardening—5KLD
	b)	Wastewater segregation with specification of criteria of such segregation (if any)	The industry has not provided any wastewater segregation.

	c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	Industry has provided following 13 HDPE tanks for storage of wastewater: 1. 10KL x 7 nos. 2. 20KL x 2 nos. 3. 5KL x 4 nos. In addition, two nos. of underground tanks with capacity 10KL and 15 KL is provided. No Flow meters are provided by the industry. As informed, flow measurement is carried out through level difference of the tanks.
	d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record The industry has not provided flow meter at the inlet. Based on data submitted by unit average wastewater generation is about 5.7KLD B. As per CCA The quantity of the industrial wastewater generation is 80KLD.
	e)	Wastewater treatment process with capacity and operational status • For High COD • For Low COD	The industry has provided ETP comprising of primary, secondary treatment system. However, during visit the Effluent treatment plant's was found empty and not in operation. Only collection tank found filled with wastewater. The unit is not operating ETP.
	f)	On site Record keeping	Records for the operation of ETP was not maintained. Moreover, the industry representative was reluctant to share any information pertaining to operation of ETP, raw material used, production records etc.
	g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has stored acidic wastewater in various HDPE tanks, i.e. Capacity of HDPE tanks: about 10KL x 9 nos. , 20KL x 2 nos., underground tanks 10KL and 15 KL.
	h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	The industry sent wastewater to CETP through tanker.

	i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	N.A
3.	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**		Not provided

4. **Details of Effluent Samples collected and analysis results**

GPCB analysis report

Parameters	**Collection tank of Primary ETP**	**GPCB Discharge Standards as per CCA**
pH	1.32	5.5-9.0
Colour	12000	--
TSS	92	100
Fluorides	1.9	15
Sulphides	12.16	5
Ammonical Nitrogen	5.6	50
Sulphate	166	--
TKN	12.8	50
Nitrate Nitrogen	9.35	50
BOD (3 days at 27^0C)	1346	100
COD	**5027**	250
Chlorides	5450	--
Phenolic Compounds	BDL	5

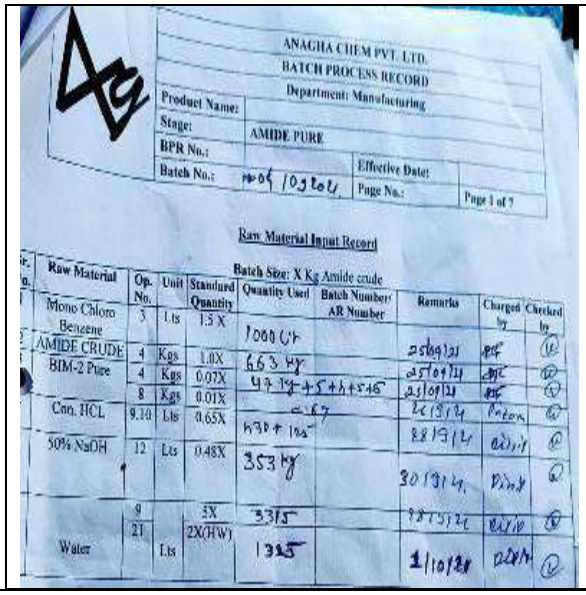
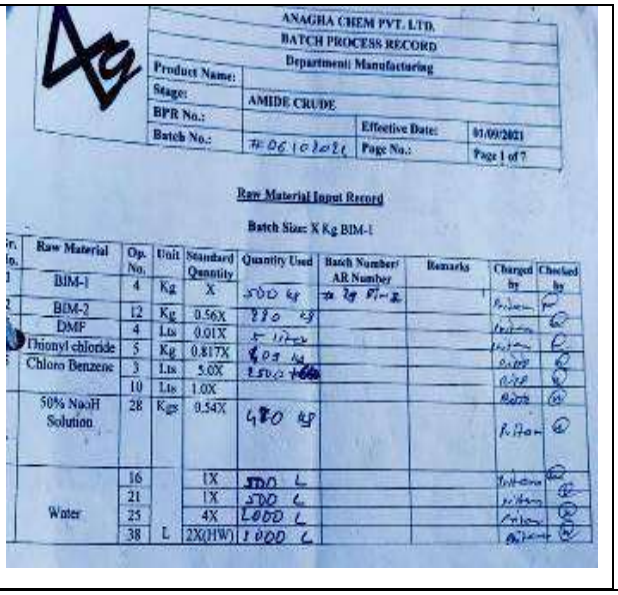
Note: all values are reported in mg/l except pH and color

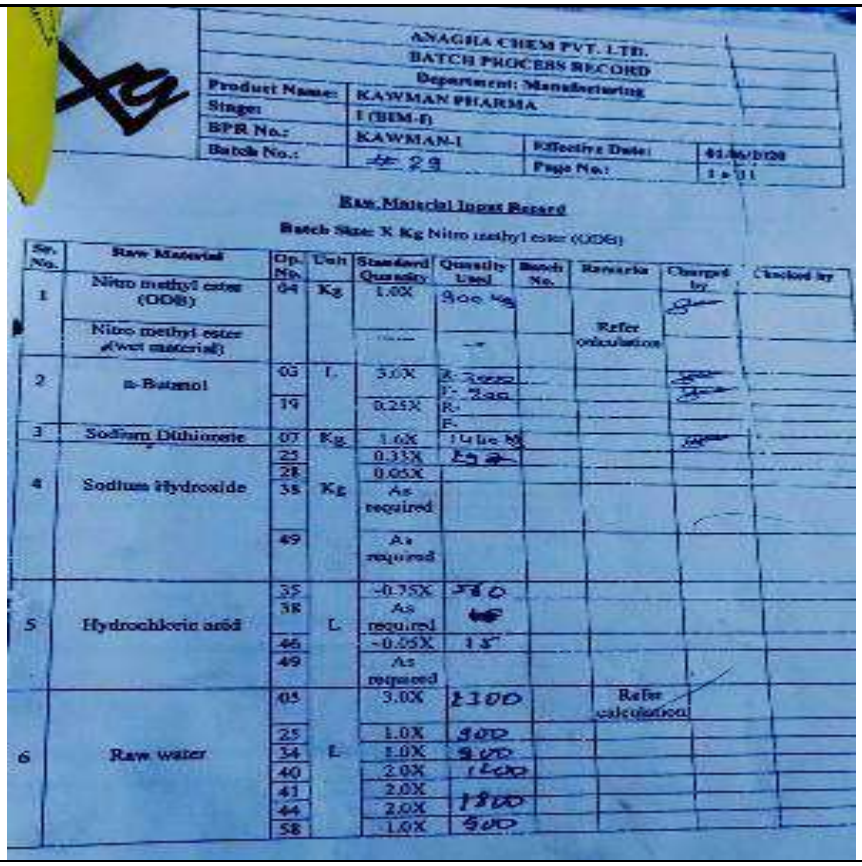
Third party analysis report

Parameters	**Collection tank of Primary ETP**	**GPCB Discharge Standards as per CCA**
pH	1.48	5.5-9.0
Colour	>500	--
TSS	130	100
Fluorides	BDL	15
Sulphides	6	5
Ammonical Nitrogen	BDL	50
Sulphate	91	--
TKN	15	50
Nitrate Nitrogen	BDL	50
BOD (3 days at 27^0C)	1160	100
COD	**5520**	250
Chlorides	5185	--
Phenolic Compounds	0.7	5

Note: all values are reported in mg/l except pH and color

The analysis result of the sample collected from the collection tank reveals that in present non-operating condition of ETP, the unit will not able to treat the stored quantity of wastewater. The records of disposal of wastewater also found not maintained. Therefore management of wastewater treatment and proper disposal as per the condition mentioned in the CCA was not found in practiced by the industry.

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	During visit no bypass/ponding/accumulation of wastewater inside or outside the premises was observed.
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	---
7.	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.**	
8.	• The industry has not provided HW display board at the entry gate of the premises. • During inspection, the industry was found in operation. The industry representative was reluctant to share any details pertaining to present ongoing production, product manufactured, raw material used, wastewater generation, treatment and disposal, hazardous waste generation and disposal etc. with the visiting team. It was informed that entire records were maintained at the office located at Ankleshwar. • The team has visited the production area, based on the name of raw material mentioned on the drums stored near the reactors and further discussion it was found that the industry using various raw materials which are not mentioned by the industry during CCA application and was manufacturing of products which are not mentioned in the CCA. • After visit, the industry has submitted few production records however other requisite details were not provided. As per batch process records submitted, it is found that the industry uses many raw materials such as Nitro methyl ester (ODB), Nitro methyl ester (wet material), n-Butanol, Sodium Dithionate, Sodium Hydroxide, DMF Thionyl chloride, Chloro Benzene, 50% NaOH solution, Toluene, Butanol, Methanol etc. without permission from GPCB. • As per present and past production data, the industry has been manufacturing products other than CCA.  ANAGHA CHEM PVT. LTD. BATCH PROCESS RECORD Department: Manufacturing Product Name: Stage: AMIDE PURE BPR No.: Batch No.: Effective Date: Page No.: Page 1 of 7 Raw Material Input Record Batch Size: X Kg Amide crude Raw Material | Op. No. | Unit | Standard Quantity | Quantity Used | Batch Number/ AR Number | Remarks | Charged by | Checked by Mono Chloro Benzene | 3 | Lts | 1.3 X | 1000 Lt AMIDE CRUDE | 4 | Kgs | 1.0X | 663 kg BIM-2 Pure | 4 | Kgs | 0.07X | 8 | Kgs | 0.01X Conc. HCL | 9,10 | Lts | 0.65X 50% NaOH | 12 | Lts | 0.48X | 353 kg | 9 | | 3X | 3315 Water | 21 | Lts | 2X(HW) | 1325  ANAGHA CHEM PVT. LTD. BATCH PROCESS RECORD Department: Manufacturing Product Name: Stage: AMIDE CRUDE BPR No.: Batch No.: Effective Date: 01/09/2021 Page No.: Page 1 of 7 Raw Material Input Record Batch Size: X Kg BIM-1 Raw Material | Op. No. | Unit | Standard Quantity | Quantity Used | Batch Number/ AR Number | Remarks | Charged by | Checked by BIM-1 | 4 | Kg | X | 500 kg BIM-2 | 12 | Kg | 0.56X | 280 kg DMF | 4 | Lts | 0.01X Thionyl chloride | 5 | Kg | 0.817X | 409 kg Chloro Benzene | 3 | Lts | 5.0X | 10 | Lts | 1.0X 50% NaoH Solution | 28 | Kgs | 0.54X | 480 kg | 16 | | 1X | 500 L | 21 | | 1X | 500 L Water | 25 | | 4X | 1000 L | 38 | L | 2X(HW) | 1000 L



ANAGHA CHEM PVT. LTD.
BATCH PROCESS RECORD
Department: Manufacturing

Product Name: KAWMAN PHARMA
Stage: I (BEM-E)
BPR No.: KAWMAN-I
Batch No.: [illegible] 29
Effective Date: 01/06/2020
Page No.: 1 to 11

Raw Material Input Record

Batch Size: X Kg Nitro methyl ester (ODB)

Sr. No.	Raw Material	Op. No.	Unit	Standard Quantity	Quantity Used	Batch No.	Remarks	Charged by	Checked by
1	Nitro methyl ester (ODB)	04	Kg	1.0X	900 Kg		Refer calculation		
	Nitro methyl ester (Wet material)								
2	n-Butanol	03	L	3.0X					
		19		0.25X					
3	Sodium Dithionite	07	Kg	1.0X	1400 Kg				
4	Sodium Hydroxide	23	Kg	0.33X	450				
		28		0.05X					
		35		As required					
		49		As required					
5	Hydrochloric acid	35	L	-0.75X	750				
		38		As required					
		46		-0.05X	15				
		49		As required					
6	Raw water	05	L	3.0X	2100		Refer calculation		
		25		1.0X	900				
		34		1.0X	900				
		40		2.0X	1800				
		41		2.0X					
		44		2.0X	1800				
		58		1.0X	900				

- It was found that the industry sending recovered solvent to M/s. Sunsine chemical without permission from GPCB.
- During visit, the ETP was not in operation. Only collection tank found filled with acidic wastewater. In addition the industry has stored acidic wastewater in various HDPE tanks. The analysis result of the sample collected from the collection tank reveals that in present non-operating condition of ETP, the industry will not able to treat the stored quantity of wastewater. The records of disposal of wastewater also found not maintained. Therefore management of wastewater treatment and proper disposal as per the condition mentioned in the CCA was not found in practiced by the industry.
- Present condition of overall wastewater management, record keeping, storage of contaminated drums, Hazardous waste.

- About 90KL of acidic wastewater was stored in HDPE tanks & about 10MT of hazardous waste were stored within premises of unit.

Hence, it can be concluded that the industry has not provided proper records of products, raw material consumption, water consumption, wastewater generation and disposal of wastewater, hazardous waste generation and haphazard storage, stacks without monitoring facility, storage of Contaminated drums, not sharing of requisite details, production of various products without CCA shows gross noncompliance of the industry. About 10MT of hazardous waste were stored within premises of the industry which has potential to contaminate soil and groundwater in and around the premises of the industry. The industry need to take adequate steps to make the ETP functional, amend CCA for the actual products which are intended to manufacture, provide proper storage facility of HW. The industry need to dispose the presently stored HW as per the CCA conditions.

	Date of visit	27/10/2021
	Name of Visiting Officials	**Amit Thakkar, Sc. D, CPCB** **N. D. Patel, DEE, GPCB**

ANNEXURE E-5

1.	**General Information of the Industry:**		
	a)	Name & Address	**M/s. Magxid Fine Chem** D/2, CH-323, GIDC Dahej, Bharuch
	b)	Contact Person & Contact Numbers, Fax	Shri. PRATIK GOPALBHAI SUREJA – 9727758548 Shri. Kapil Savaliya-8238521555
	c)	Year of Establishment	2012
	d)	CCA Validity	25/03/2023
	e)	Operational Condition	The industry was operational during inspection.
	f)	Present manufacturing Products	As informed, Magnesium Hydroxide/Magnesium carbonate/Magnesium Trisilicate are under production during visit.
	g)	Main Raw Materials	Sea bittern, Soda ash, Caustic lye, Sodium silicate etc.
2.	**Wastewater Management**		
	a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for last five month is 41KL/day B. As per CCA Total-47.5KLD Domestic-1.5KLD Industrial-46KLD
	b)	Wastewater segregation with specification of criteria of such segregation (if any)	There is no high COD wastewater generation from unit. Hence not applicable.
	c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	N.A

	d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record The industry has not provided flow meter at the inlet. Based on flow reading of final discharge to GIDC drainage system, average discharge is about 3.85KLD. B. As per CCA Total wastewater generation 36.4KLD • Domestic -1.4KLD • Industrial -35KLD
	e)	Wastewater treatment process with capacity and operational status • For High COD • For Low COD	The industry has installed ETP, however the ETP was not functional during visit.
	f)	On site Record keeping	Proper records for the operation of ETP were not available onsite.
	g)	Provision of any intermittent storage/guard pond etc. before disposal	30KL storage tanks
	h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal at CETP through tanker
	i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	N. A.
3.	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**		N.A

4. **Details of Effluent Samples collected and analysis results**

GPCB analysis report

Parameters	sample collected from Storage tank of ETP	GPCB Discharge Standards as per CCA
pH	8.5	5.5-9.0
Colour	400	--
TSS	72	100
Fluorides	2.75	15
Sulphides	<1.0	5
Ammonical Nitrogen	BDL	50
Sulphate	1514	--
TKN	2.24	50
Nitrate Nitrogen	8.2	50
BOD (3 days at 27^0C)	52	100
COD	226	250
Chlorides	9925	--
Phenolic Compounds	<0.1	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	sample collected from storage tank of ETP	GPCB Discharge Standards as per CCA
pH	9.26	5.5-9.0
Colour	250	--
TSS	90	100
Fluorides	1.25	15
Sulphides	BDL	5
Ammonical Nitrogen	BDL	50
Sulphate	1456	--
TKN	BDL	50
Nitrate Nitrogen	BDL	50
BOD (3 days at 27^0C)	93	100
COD	**388**	250
Chlorides	10722	--
Phenolic Compounds	BDL	5

Note: all values are reported in mg/l except pH and color

The analysis results of sample collected from storage tank of ETP reveals that the industry exceeds discharge norms for concentration of COD based on analysis results of third party however meets the discharge standards for all measured parameters as per analysis results of GPCB.

5.	**Any bypass/ponding/accumulation**	During visit no bypass/ponding/accumulation of wastewater inside or outside the premises was observed.

	of wastewater inside or outside the premises observed	
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	No
7.	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.**	
	• The industry has not provided HW display board at the entry gate of the premises. • The industry has stored raw material sea bittern in guard pond on HDPE layer.  • The industry manufactured inorganic products. The analysis results of sample collected from storage tank of ETP reveals that the industry exceeds discharge norms for concentration of COD based on analysis results of third party however meets the discharge standards for all measured parameters as per analysis results of GPCB. Variation in concentration of COD at final outlet from GPCB and third party may be attributed because of high chloride interference. • During inspection, ETP was found non-functional. The industry is not operating ETP. As informed, the wastewater is collected and stored in the storage tank and sent to CETP through tankers.  • The industry is not maintaining records for the disposal of wastewater through tankers to CETP. Hence, it can be concluded that the industry manufactured inorganic products. The analysis results of sample collected from storage tank of ETP reveals that the industry exceeds discharge norms for concentration of COD based on analysis results of third party however meets the discharge standards for all measured parameters as per analysis results of GPCB. Variation in concentration	

	of COD at final outlet from GPCB and third party may be attributed because of high chloride interference.	
8.	**Date of visit**	27/10/2021
9.	**Name of Visiting Officials**	Amit Thakkar, Sc. D- CPCB N. D. Patel, DEE- GPCB

ANNEXURE E-6

1.	**General Information of the Industry:**		
	a)	Name & Address	**M/s MEGHMANI LLP (Unit-3),** D-2/CH-5, GIDC, DAHEJ, TAL: VAGRA, DIST: BHARUCH
	b)	Contact Person & Contact Numbers, Fax	Shri Rutesh Shah—9099910601
	c)	Year of Establishment	2020
	d)	CCA Validity	30/03/2026
	e)	Operational Condition	The industry was operational during inspection.
	f)	Present manufacturing Products	As informed, during inspection production of Paracetamol is under production
	g)	Main Raw Materials	Para Amino Phenol, Acetic Anhydride, Carbon, Para Nitro Chloro Benzene, Caustic Soda lye, Ortho Nitro Chloro Benzene, Hydrogen gas etc.
2.	**Wastewater Management**		
	a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for last five month is 270KL/day. B. As per CCA 464KLD (419KLD fresh + 45 KLD reuse)
	b)	Wastewater segregation with specification of criteria of such segregation (if any)	There is no any segregation system provided for Low COD/TDS and High COD/TDS stream.
	c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided tanks of 25KL x 4 nos. & 15KL x 4 nos. for storage of Mother liquor and tanks of 25KL x 2 nos. storage of wastewater generating from floor washing/vessel washing. Separate tanks of 250KL x 4 nos. for storage of Dilute acetic acid and tanks of 100KL for storage of Acetic acid is provided.

	d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record The industry has not provided flow meter at the inlet. Based on flow reading of final discharge to GIDC drainage system, average discharge is about 192KLD. B. As per CCA The quantity of total wastewater of industrial wastewater generation is 415.3KL/. As per CCA, total 415.3KL/day wastewater is treat in ETP and treated 45KL/D effluent shall be reused for cooling purpose, rest of 370.3KLD treated effluent shall be discharged to GIDC drainage line.
	e)	Wastewater treatment process with capacity and operational status • For High COD • For Low COD	There is no any segregation system provided for Low COD/TDS and High COD/TDS stream. Unit has installed ETP comprising of Primary, Secondary and Tertiary Treatment System. Collection tank→equalization tank→reaction tanks (3nos.) →primary clarifier→aeration tank (1no.) →secondary clarifier→aeration tank(2 no.) →secondary clarifier(2 no.) →holding tank→Carbon filter/sand filter→treated holding tank→disposal to GIDC
	f)	On site Record keeping	Proper records for the operation of ETP were not available onsite.
	g)	Provision of any intermittent storage/guard pond etc. before disposal	HDPE tank of 45KL capacity is provided near boundary wall before final discharge into GIDC drainage network
	h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal at CETP Dahej through GIDC drainage.
	i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	Flow meter is provided at final discharge point.
3.	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**		TOC meter is provided at final outlet and was found non-operational during visit. Online connectivity of OCEMS to GPCB/CPCB is not provided.

4. **Details of Effluent Samples collected and analysis results**

GPCB analysis report

Parameters	**from Equalization tank of ETP**	**from final treated wastewater discharge point of unit (outside premises)**	**Final treated wastewater holding tank of ETP**	**GPCB Discharge Standards as per CCA**
pH	3.8	6.36	7.19	5.5-9.0
Colour	1000	500	1500	--
TSS	3772	**274**	**212**	100
Fluorides	6.3	0.8	0.9	15
Sulphides	41.6	**17.6**	8	5
Ammonical Nitrogen	86.8	6.16	5.6	50
Sulphate	1023	146	218	--
TKN	92.4	14	13.14	50
Nitrate Nitrogen	297.41	4.15	4.5	50
BOD (3 days at 27^0C)	20990	**385**	**247**	100
COD	**53939**	**1139**	**720**	250
Chlorides	6025	252	158	--
Phenolic Compounds	2.96	0.24	<0.1	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	**from Equalization tank of ETP**	**from final treated wastewater discharge point of unit (outside premises)**	**Final treated wastewater holding tank of ETP**	**GPCB Discharge Standards as per CCA**
pH	3.85	6.35	7.16	5.5-9.0
Colour	>500	>500	>500	--
TSS	3160	**310**	**220**	100
Fluorides	BDL	BDL	BDL	15
Sulphides	22	**44**	**27**	5
Ammonical Nitrogen	72	BDL	BDL	50
Sulphate	744	60	324	--
TKN	80	8	12	50
Nitrate Nitrogen	BDL	BDL	BDL	50
BOD (3 days at 27^0C)	>10000	**491**	**235**	100
COD	**62409**	**1822**	**982**	250
Chlorides	5034	332	161	--
Phenolic Compounds	7.5	0.85	0.53	5

Note: all values are reported in mg/l except pH and color

Analysis of samples reveals that the sample collected from final discharge point exceeds the discharge standard for TSS, Sulphides, COD & BOD.

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	During visit no bypass/ponding/accumulation of wastewater inside or outside the premises was observed.
6.	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	Unit is commissioned in 2021, Since January 2021 GPCB has visited the industry more than 05 times and The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on 11/06/2021.
7.	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.**	
8.	• The industry has provided display board at the entry gate of the premises, however the display board was not updated. • During visit, one sample was collected from the final treated wastewater discharge point of unit (outside premises). Analysis of samples reveals that the sample exceeds the discharge standard for TSS, Sulphides, COD & BOD. • During visit, ETP is observed not in operation and effluent was observed stored in collection tank of ETP and partially filled in both Aeration tanks and the installed aerators were operational. However, one clarifier was found empty and another was partially filled.  • Unit has not segregated Low COD and High COD stream segregation of generated wastewater. The analysis results of the sample collected from inlet collection tank shows concentration of COD: 53,939 mg/l and BOD: 20,990 mg/l. Treatment of such high organic load in the present ETP seems not possible. The industry may explore possibility of high COD segregation and separate treatment. • As per mass balance data of Paracetamol submitted by the industry, 2.625 KL of wastewater and 3.67 Kl of acetic acid is generated per MT of Paracetamol production. However, as per records, it is found that generation of acetic acid is 0.315 Kl per MT of paracetamol which highly varies with the data of mass balance submitted by the industry. • As per condition of CCA, "*the unit shall be required to make storage facilities to store the effluent for atleast 48 hours by providing acid proof brick lined impervious tanks/ HDPE tanks*", However, the industry has provided only one storage tank of 45 KL capacity against	

	the required capacity of 740.6 KL (the permitted discharge quantity is 370.3 KLD). • As informed, present stock of about 0.012 KL of used oil, 13 MT of ETP sludge, 5 MT of spent catalyst, 175 Nos. Discarded containers and 68.87 MT of Acetic acid stored in tanks. • As per hazardous waste disposal data the industry has sold Dilute Acetic Acid (HW) to other industrial units for which MoU was not shown or permission from GPCB was obtained. Moreover, the industry is sending the HW without following GPCB online manifest system for disposal of dilute acetic acid. • Unit has provided acetic acid recovery plant for recovery of acetic acid. Hence, it can be concluded that the industry is discharging wastewater to CETP without complying with CCA discharge norms. The industry generates very high COD wastewater and no separate collection and treatment system is provided. During visit the installed ETP was not in operation. The records submitted for the generation of dilute acetic acid varies with the mass balance data submitted by the industry. The industry is not following online manifest system for the disposal of dil. Acetic acid (HW). The industry need to improve treatment efficiency of its ETP through regular maintenance, proper operation and stream segregation. The industry also needs to provide flowmeter at wastewater inlet of ETP. The industry need to follow online manifest system for the disposal of HW and implement good housekeeping practices. The industry is not complying with CCA condition to make storage facilities to store the effluent for atleast 48 hours. The industry need to take adequate steps to comply with the CCA conditions, provide proper storage facility of HW.	
•	**Date of visit**	26/10/2021
•	**Name of Visiting Officials**	**Amit Thakkar, Sc. D, CPCB** **N. D. Patel, DEE, GPCB** **Rajendrasinh Gaekwad, AEE, GPCB**

ANNEXURE E-7

1.	**General information of industry**:		
	a).	Name & Address	**M/s. Pragna Pharma Private Limited** Plot No. D2-CH-224, GIDC, Dahej-2, Tal:-Vagra, Dist:-Bharuch, 392130
	b).	Contact Person & Contact Number, Fax	Shri. Dipak Patel Mo.-9723812106 Shri. Jignesh patel Mo.-9723812606
	c).	Year of establishment	2018
	d).	CCA Validity	31/07/2022
	e).	Operational Condition	Yes
	f).	Present Manufacturing Product	As informed, during inspection production of 4-Chloro 3-ethyl-1-methyl-1H-pyrazole 5-carboxylic acid, (2E)-2-(hydroxyamino)-N-methyl-2-(2-phenoxyphenyl)acetamide, 3-(trifluoromethyl)pyridine-2-sulfonamide, 2-chloro-4-(methylsulfonyl)-3-[(2,2,2-trifluoroethoxy)methyl] benzoic acid, 3-(bromomethyl)-2-chloro-4-(methylsulfonyl) benzoic Acid, 4-chloro-3-ethyl-1-methyl-N-[4-(4-methylphenoxy)benzyl]-1H-pyrazole-5-carboxamide (PIT) are under production
	g).	Main Raw Materials	Following are the major raw materials used by the industry: Methyl Ethyl Ketone, Di Ethyl Oxalate, 80% Hydrazine Hydrate, Ethyl Bromide, Dimethyl Oxalate, Di Chloro Benzene, Bromine, 2-chloro-3-methyl-4-(methylsulfonyl) benzoic acid, 2,2,2-trifluoro ethanol, Acetonitrile etc.
2.	**Waste Water management**		
	a).	Quantity of fresh water consumption and its source	A. Based on past 6 months billing record Average Water consumption : 164 KLD B. As per CCA 271 KLD, GIDC Water

	b).	Wastewater segregation with specification of criteria of such segregation (if any)	Low COD @65KLD low COD from process shall be treated in ETP along with @ 35.5KLD boiler, cooling and washing wastewater. @ 80.5KLD treated water shall be sent for disposal into GIDC sewer line and remaining- 20KLD shall be reused/recycle in boiler. High COD @30KLD high COD effluent from process shall be sent to in-house MEE for treatment. MEE condensate-28/KLD shall be reuse/recycle in cooling OR @30KLD high COD effluent shall be sent to Common MEE of Detox India, Ankleshwar and BEIL, Dahej for further treatment and disposal for six month only (temporary permission)
	c).	Provisions of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	Yes, Dedicated storage of segregated stream available. 65KL for Low COD Stream 60KL for High COD Stream
	d).	Total waste water generation (Based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months billing record The industry has not provided flow meter at the inlet. Based on flow reading of final discharge to GIDC drainage system, average discharge is about 51.2 KLD Average High COD wastewater disposal is about 19.3KLD. B. As per CCA 80.5 KLD (Low COD) 30 KLD (High COD)
	e).	Wastewater treatment process with capacity and operational status • For High COD • For Low COD	The industry has segregated waste water generated from the various operations into following streams and provided separate treatment schemes. For High COD Filtration → collection tank (25KL, 50KL) →Common MEE facility For Low COD ETP capacity-70KLD Collection tank→neutralization tank→Flash mix→primary Settling tank→aeration tank→secondary settling tank→holding tank→sand filter/ carbon filter→final treated holding tank (50KLD) → disposal to GIDC

<table>
<tr><td></td><td>f).</td><td>On side record keeping</td><td>Proper records for the operation of ETP, spray dryer etc. were not available onsite. Records for the generation of high COD wastewater process plant wise were reportedly not maintained.</td></tr>
<tr><td></td><td>g).</td><td>Provision of any intermittent storage/guard pond etc. before disposal</td><td>Yes, 3KL capacity</td></tr>
<tr><td></td><td>h).</td><td>Made of disposal of wastewater (GIDC, CETP, ZLD gardening direct)</td><td>HDPE tank of 10KL capacity is provided near boundary wall before final discharge into GIDC drainage network</td></tr>
<tr><td></td><td>i)</td><td>Provision for flow meters at MEE feed MEE condensate, RO etc. or any critical locations as consent</td><td>• Flow meter is provided at final discharge point. However, flow meter at inlet to ETP is not provided.
• MEE is not installed yet, unit is currently Member of CMEE facility</td></tr>
<tr><td>3.</td><td colspan="2">OCEMS/ PTZ/ Flow meter provisions, location of OCEMS, parameters monitored, working principal, its online connectivity to CPCB/GPCB server</td><td>TOC meter is not provided at final outlet</td></tr>
<tr><td>4.</td><td colspan="3">Details of Effluent Samples collected and analysis results
GPCB analysis report
<table>
<tr><td>Parameters</td><td>wastewater sample collected from collection tank of Low COD ETP</td><td>Final treated wastewater discharge point outside the premises</td><td>GPCB Discharge Standards as per CCA</td></tr>
<tr><td>pH</td><td>8.57</td><td>7.94</td><td>5.5-9.0</td></tr>
<tr><td>Colour</td><td>400</td><td>70</td><td>--</td></tr>
<tr><td>TSS</td><td>324</td><td>98</td><td>100</td></tr>
<tr><td>Fluorides</td><td>3.75</td><td>2.35</td><td>15</td></tr>
<tr><td>Sulphides</td><td>664</td><td><1.0</td><td>5</td></tr>
<tr><td>Ammonical Nitrogen</td><td>15.68</td><td>8.96</td><td>50</td></tr>
<tr><td>Sulphate</td><td>2547</td><td>687</td><td>--</td></tr>
<tr><td>TKN</td><td>22.4</td><td>11.76</td><td>50</td></tr>
<tr><td>Nitrate Nitrogen</td><td>64.68</td><td>32.91</td><td>50</td></tr>
<tr><td>BOD (3 days at 27^0C)</td><td>353</td><td>42</td><td>100</td></tr>
<tr><td>COD</td><td>1340</td><td>208</td><td>250</td></tr>
<tr><td>Chlorides</td><td>3710</td><td>1850</td><td>--</td></tr>
</table></td></tr>
</table>

	Phenolic Compounds	BDL	BDL	5

Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	wastewater sample collected from collection tank of Low COD ETP	Final treated wastewater discharge point outside the premises	GPCB Discharge Standards as per CCA
pH	8.60	7.87	5.5-9.0
Colour	>500	100	--
TSS	360	100	100
Fluorides	3.4	0.77	15
Sulphides	>50	2	5
Ammonical Nitrogen	16	BDL	50
Sulphate	1353	542	--
TKN	22	13	50
Nitrate Nitrogen	8	8	50
BOD (3 days at 27^0C)	362	47	100
COD	1392	204	250
Chlorides	3725	1611	--
Phenolic Compounds	BDL	BDL	5

Note: all values are reported in mg/l except pH and color

5.	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	During visit no bypass/ponding/accumulation of wastewater inside or outside the premises was observed.
6.	**Closure directions issued by GPCB in past 5 years wrt wastewater management**	--
7	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc** • The unit has provided display board outside the premises. However, the display board was not updated • The unit has provided hazardous waste storage sheds for storage of hazardous waste. However, the industry has stored lot of drums (@ 900 nos. of about 200 lt capacity) containing various HW inside the premises at many locations on open ground. Handling and storage hazardous waste found unsatisfactory in view of stored hazardous waste in haphazardly manner and no nomenclature on hazardous waste drums.	




- During visit, huge quantity (about 800 T) of HW found stored in HDPE bags inside the storage shed and near High COD wastewater storage tank. The storage shed is not provided with proper leachate collection and transfer facility. During visit spillage of leachate from the bags stored near High COD wastewater storage tank was observed.


- As informed, solid residue generated from high COD wastewater is mixed with ETP sludge.
- The industry send High COD wastewater to Common MEE and temporary permission is obtained for same from GPCB. During visit installation of MEE (Capacity-30KLD) was under progress.

	• The industry has provided spray dryer (capacity 4 Lac. K. cal), during visit the spray dryer was not operational. As informed, the spray dryer is provided for drying of various chemicals. During visit installation of one new spray dryer (capacity 20 Lac. K. cal) was under progress. The industry has obtained CTE for drying of chemical on job work basis. • During visit, manual transfer of solvent from tanks to the reactors, usage and handling of chlorine cylinders, storage of other materials and drums containing HW/solvents were found stored in the PESO demarcated area. This may create safety hazards. • As per condition of CCA, "*the unit shall be required to make storage facilities to store the effluent for atleast 48 hours by providing acid proof brick lined impervious tanks/ HDPE tanks*", However, the industry has provided storage tanks of 63 KL capacity against the required capacity of 161 KL (the permitted discharge quantity is 80.5 KLD). Hence, it can be concluded that the industry is meets the discharge standards of the analysed parameters. However, the industry found stored about 900 drums (approx. 180 MT) of various incinerable HW and solvents on open area and stored about 800 MT of solid hazardous waste inside the storage shed. The HW storage shed provided was not having proper leachate collection and transfer to ETP facility. The storage condition of HW, the drums were not labeled and found leakage, spillage of hazardous waste due to leachate etc. shows violation towards the overall environmental management. Huge quantity (about 800 T) of HW found stored in HDPE bags inside the storage shed and near High COD wastewater storage tank. The industry has stored lot of drums (@ 900 nos. of about 200 lt capacity) containing various HW inside the premises at many locations on open ground. The industry is not complying with CCA condition to make storage facilities to store the effluent for atleast 48 hours. The industry need to take adequate steps to comply with the CCA conditions, provide proper storage facility of HW and disposed the presently stored HW as per the CCA condition.	
8.	**Date Of Visit**	27/10/2021
9.	**Name of Visiting Officials**	**Amit Thakkar, Sc. D, CPCB** **N. D. Patel, DEE, GPCB**

ANNEXURE E-8

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Deramic Battery Separator India Pvt. Ltd.** Plot No. D3-17, GIDC Dahej III Tal Vagra, District Bharuch
b)	Contact person & Contact numbers,Fax etc.	Shri Eknath Patil EHS Manager 7030282255
c)	Year of Establishment	2017
d)	CCA Validity	GPCB has issued CCA vide order no –AWH-83988 dated 04.02.2017 with validity till 1.01.2022
e)	Operational status of the industry	The industry was operational during the visit.
f)	Present manufacturing products	As informed, during visit the industry was producing following products: • Polyethylene(PE) Separator (Jumbo, slitrolls, Envelop, Sleeve & Leaf) • Glass mate cut (Envelop, cuts, Leaf &Roll)
g)	Main raw materials	Following raw materials are used in the manufacturing of above product- Polyethylene, Precipitated silica, Process oil, coloring compound and Trichloro Ethylene.
2.	**Waste water management:**	
a)	Quantity of fresh water consumption and its source (**GIDC**/Bore well /Tankers)	**A. Based on past 06 months billing records** As per record provided by the industry, the average water consumption is **99.14** KL/day. **B. As per CCA** As per CCA industry is permitted for the water consumption of total 320 KL day including 10 KL/day for domestic purpose. The source of fresh water is GIDC water supply.
b)	Waste water segregation & its criteria of segregation	• As informed by the industry, the generated waste water is collected in one stream and

		treated in the ETP. • The process waste (White water) is collected and stored separately in Hazardous waste storage tank kept in hazardous waste storage shed and periodically sent to Common incineration facility for final disposal. It is generated about 17 to 18 KL/month.
c)	Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc**.**	The waste water in the industry is generated from washings and from utility section of the plant. Industry has provided collection tank of capacity 125 KL in the ETP to store the waste water generated from utility section. Industry has provided flow meter at the inlet of ETP and maintaining the record of the same in logbook.
d)	Total waste water generation (KL/Day)	**A. Based on past 6 months' flow record** Industry has provided flow meter at the inlet of ETP. As per details provided by the industry, the industry is generating on an average of 10 KL waste water per day. **A. As per CCA** As per CCA industry is permitted to generate 125 KL/day of total waste water including 10 KL of domestic waste water.
e)	Waste water treatment process with capacity and operational status of ETP:	During the visit ETP was not in operation due to less quantity of collected waste water. As informed by the industry, the ETP is not operated daily because waste water is not generated on daily basis. The installed capacity of ETP is 10 M^3/Hrs. The ETP consisting of the following units- **Collection Tank→Flash mixture→ Flocculation chamber→DAF system→Holding Tank → PSF→ACF→ Treated water tank.** • Industry has provided one number of sludge thickener followed by filter press for dewatering the sludge. • The waste water generated from filter press is re send to Flax mixture for further treatment in the system. • The sludge generated is periodically disposed to CHWTSDF site.
f)	Status of onsite record keeping	Industry is maintaining the record of inlet effluent

	related to waste water/ETP sludge generation and disposed off	to ETP and final treated effluent discharge through tanker by recording the flow meter reading in the logbook. As informed by the industry, on an average of about 10 KL/day waste water is disposing through tanker to CETP Dahej.
g)	Provision of any intermittent storage /guard pond etc. before disposal	The industry has provided treated water tank of capacity 10 KL for storage of final treated waste water.
h)	Mode of disposal of waste water (GIDC drain, direct, CETP/ZLD, Gardening etc.	• Industry discharges its treated waste water to CETP Dahej. • Though, as per CCA industry is permitted to discharge its treated effluent through tanker to Final pumping station (FPS) • However, as informed by the industry, CETP Dahej has requested to the industry to send the treated effluent to CETP Dahej as CETP is not receiving sufficient quantity of waste water for its operation.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	As informed by the Industry, the industry is not required MEE and RO system for waste water treatment. Industry has provided flow meter at the inlet of ETP and final treated effluent discharge point where tankers are filled to disposed the effluent to CETP.
3.	OCEMS /PTZ/flowmeter provision, Location of OCEMS, parameters monitored, working principals	Industry has installed Forbes Marshal make online waste water analyzer for the parameters like pH, BOD, COD and TSS. and Magnetic flow meter at the final treated effluent discharge line. During the visit treated waste water analyzer, pH meter and magnetic flow meter found operational. As informed by the industry, the online analyzers are not connected with GPCB server.
4.	Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed.	No bypass arrangement and accumulation of waste water were observed during the visit.
5.	Details of closure directions issued by GPCB in last 3 years wrt Waste water Management	No closure directions/showcause notice issued by GPCB in last 5 years wrt Waste water Management.

6. **Details of effluent /waste water samples collected and analysis results:**

During the inspection ETP was not in operation because the quantity of collected effluent was very less. T**eam** collected the **grab** samples of final treated effluent stored in the treated waste water holding tank and ETP inlet samples from the collection tank of ETP.
The analysis results are tabulated below.

The analysis results of GPCB laboratory:

Name of the Parameters	Inlet to ETP (EQT)	Final treated Effluent at discharge point	GPCB standard Limit
pH	7.65	7.17	6.5 to 8.5
Colour	25	20	---
TSS	32	4	100
Fluorides	2.15	1.7	15
Sulphides	<1.0	<1.0	5.0
Ammonical Nitrogen	BDL	BDL	50
TKN	3.36	3.36	--
Sulphate	308	397	--
Nitrate Nitrogen	23.67	35.22	50
BOD (3 days at 27^0C)	14	10	100
COD	56	52	250
Chlorides	150	170	--
Phenolic compounds	<1.0	<1.0	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis Results of Third party lab:

Name of the Parameters	Inlet to ETP (EQT)	Final treated Effluent at discharge point	GPCB standard Limit
pH	7.46	7.04	6.5 to 8.5
Colour	40	30	---
TSS	100	40	100
Fluorides	1.2	1.6	15
Sulphides	BDL	BDL	5.0
Ammonical Nitrogen	BDL	BDL	50
TKN	5.0	BDL	--
Sulphate	241	263	--

	Nitrate Nitrogen	33	45	--
	BOD (3 days at 27^0C)	15	12	100
	COD	51	44	250
	Chlorides	120	124	--
	Phenolic compounds	BDL	BDL	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results reveals that all analyzed parameters confirming the discharge norms prescribed by the GPCB.

7. **Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.:**

- M/s Deramic Battery Separator India Private Limited is registered as large scale Industry in Orange category.
- The industry has provided hazardous waste display board at the entrance gate of the industry. However, this display board was not updated since March 2021.
- Industry was manufacturing Poly ethylene Separator with a capacity of 7.0 million square Meter/month and Glass mate cut with capacity of 0.1 million Square Meter/month.
- As per data provided by the industry, the industry has manufactured on an average of 91069.38 square meter /day Polyethylene separator and 4849.85 square meter/day Glass mate cut in last six months. The industry has consumed on an average of 99.14 KL fresh water per day and industry discharges waste water on an average of 10.73 KL/day.
- Industry has provided ETP consisting of primary, secondary and tertiary treatment system. The installed capacity of ETP is 10000 M^3/Hr.
- As per record provided by the industry, on an average of 10 KL/day waste water is generated in the industry.
- Industry has provided flow meter at the inlet of ETP and at final treated effluent outlet and maintaining the record of the same in the logbook.
- Industry has provided designated place for storage of hazardous waste with proper shed and concrete flooring. As informed by the industry, about 17 to 18 KL/month process waste which contains Poly ethylene, silica and process oil, generated from the plant in the process of extrusion (a process step for the manufacturing of polyethylene battery separator), is collected in the liquid hazardous waste storage tank and periodically disposed to common incinerator.
- As per record provided by the industry, in the financial year 2020-2021 the industry has disposed 0.790 MT solid waste (black material/grey material) to CHWTSDF site, 2.75 MT process waste to BEIL for common incineration,

	197.230 MT waste to RSPL for coprocessing/coincineration and 11.260 MT waste sent to registered recyclers. ➢ The overall housekeeping in the ETP and in plant found satisfactory. **Conclusion:** Industry was operational during the visit. The waste water samples collected from the ETP reveals that Industry meeting the discharge norms prescribed by the GPCB. The industry disposing its waster through tanker to CETP Dahej. Industry has provided proper hazardous waste storage area. The overall housekeeping in the ETP and in plant found satisfactory.	
8.	Date of Visit	27.10.2021
9.	Name of visiting officials	Shri Manoj Kumar Sharma, Sc-'B', CPCB, Shri shri B.D Prasad, DEE, GPCB

NGT Matter OA 60/2021 (WZ)

ANNEXURE F-1

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Deepak Nitrite Limited,** Plot No. 12/B Dahej GIDC Estate Dist. Bharuch**.**
b)	Contact person & Contact numbers,Fax etc.	**Mr. Zakir Hussain** Head, EHS Mobile No. 7203080999 **Vivek Shirake** Unit Head Mobile No. 9327458587
c)	Year of Establishment	2012
d)	CCA Validity	GPCB has issued CCA vide order no –AWH-91311 dated 12.03.2018 with validity till 11.12.2022
e)	Operational status of the industry	The unit was not operational during the visit. The unit has informed and provided declaration on letter that plant was not in operation since 06.10.2021 due to annual boiler shutdown and not availability of raw materials.
f)	Present manufacturing products	During the visit, plant was not in operation. As informed, the unit manufactures various optical brightening agents(OBA) such as- • D-Max Xtype, • Dmax-Xcone,UP liquid, • UP Cone,SRK,BMKHF liquid, • ABP liquidBOP liquid, • MST liquid etc.
g)	Main raw materials	Following are the major raw materials used by the unit for the manufacturing of the above products- 4-4 Diaminostilbene2-2disulphonic acid, Cyanuric chloride, Aniline, Morpholine, Caustic soda Lye,Monoethylene glycol,Sulphuric acid, Urea Tech Grade,EDTA, Diethanolamine,Sodiumhexa Meta Phosphate
2.	**Waste water management:**	

a)	Quantity of fresh water consumption and its source (**GIDC**/Bore well /Tankers)	**A. Based on past 06 months billing records** As per data provided by the unit average water consumption is 1050.514 KL/Day. **B. As per CCA** • Industrial1971.2 KL/day • Domestic 40.0 KL/day • Gardening 5.4 KL/day As per CCA total water consumption is 2016.5 KL/day. The source of fresh water is GIDC water supply.
b)	**Waste water segregation & its criteria of segregation** Waste water is segregated into two streams. • One stream is of High COD High TDS which is generated from the process in OBA plant and hydrogenation plant. Waste water from this stream collected and sent to stripper followed by MEE and ATFD for further treatment • MEE condensate is feed into RO system, RO permeate is reused back in process and RO reject sent to MEE feed for further treatment. • Second stream is of low COD/low TDS which is generated from utility section, RO reject, floor washing of OBA plant. This stream of wastewater is collected and treated in ETP consisting of primary, secondary & tertiary treatment facility of reportedly 700 KLPD capacity.	
c)	**Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.** Separate Storage tanks for collection of waste water/mother liquor were provided in the respective plants.	
d)	Total waste water generation (KL/Day)	**A. Based on past 6 months' flow record** • High TDS stream: average 232 KLPD • Low TDS: Average 217 KLPD **A. As per CCA** As per CCA unit is permitted to generate and discharge 635.6 KL/day of total waste water.
e)	**Waste water treatment process and operational status of ETP:** During the visit, the **ETP and MEE found nonoperational**. As informed by the unit, the plant was not in operation since 06.10.2021 due to annual boiler shut down and non-availability of raw materials.	

	Treatment process for High TDS/COD: The unit has provided following treatment system for the high TDS/COD effluent generated from the process plant- **High TDS/COD stream from OBA plant**- Mother liquor storage tank→Lamella settling tank→ Collection tank→ Stripper→MEE feed Tank→MEE→ATFD. The salt generated from ATFD is packed in jumbo bags and periodically disposed to CHWTSDF site. The condensate generated from MEE is feed to RO system. RO permeate utilized in utility processes and RO reject sent to MEE feed for further treatment. **High TDS/COD stream from Hydrogenation Plant-** Mother liquor storage tank→stripper→bottom liquid feed to MEE. Striped out material collected into the drums and sent to common incinerator for final disposal. **For low COD/TDS:** For the treatment of low TDS/COD stream the unit has provided ETP of reportedly capacity 700 KLPD. The ETP consisting of the primary, secondary and tertiary treatment system as below Collection cum Equalization Tank(03 No.)→ Primary settling tank→Aeration Tank(04 Chambers)→Secondary settling tank→Intermediate pit→Flax mixture→Final clarifier→Treated water tank→Pressure sand filter→Activated carbon filter→Final discharge tank→Final pumping station (FPS). Unit has provided 02 no of emergency treated water holding tank of capacity 480 KL each.	
f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	Proper records of ETP operation and discharge of waste water into the final pumping station was not properly maintained by the unit. However, MEE operation logbook was maintained by the unit.
g)	Provision of any intermittent storage /guard pond etc. before disposal	Unit has provided 10 KL HDPE tank before discharge into the final pumping station.
h)	Mode of disposal of waste water(GIDC drain, direct, CETP/ZLD, Gardening etc.	Unit discharges its treated waste water into the GIDC final pumping station.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	Flow meter, is provided at the final treated waste water discharge line as well as at MEE feed and condensate formed. However, flow meter is not provided at inlet of ETP .
3.	**OCEMS/PTZ/flowmeter provision, Location of OCEMS, parameters monitored, working**	

	principals Unit has installed Shimandzu make online TOC meter, pH meter and Magnetic flow meter at the final treated effluent discharge line. During the visit TOC meter and pH meter found nonoperational as the plant was not in operation.
4.	**Details of effluent /waste water samples collected and analysis results:** During the visit, plant was not in operation and no effluent was treated in the ETP. There was no discharge of waste wastewater from the unit. Therefore, waste water samples were not collected from ETP.
5.	**Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed.** No bypass arrangement and accumulation of waste water observed during the visit.
6.	**Details of closure directions issued by GPCB in last 5 years** Closure direction, other direction, Notice, Show Cause Notice issued by GPCB based on various non complianceunder water Act in last five years are as under: Closure direction dated 16.08.2016 Notice dated 28.11.2017 Notice dated 12.03.2018 Closure direction dated 16.03.2018 Direction dated 30.01.2018
7.	**Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.:** • The unit has provided display board at the entrance gate of the unit. However, details of hazardous waste and other relevant information were not updated on it. • During the visit on 26.10.2021 unit was not in operation reportedly due to annual boiler shutdown and non-availability of raw materials. • During the visit no effluent observed in the ETP feed tank and final outlet. The ETP was kept under recirculation for maintaining biomass in the aeration tank. • Large quantity of ETP sludge / MEE salt (about 1000 MT) and Stripped out material (about 10 MT), were stored in the storage shed provided by the industry. during visit. The hazardous waste storage shed is having concreate /impervious flooring. However, No leachate collection facility was provided in the HW storage shed.

Photograph showing storage shed of hazardous waste without leachate collection facility. Leachate was observed in the hazardous waste storage shed

- uge qua ntity of cont ami nate d dru ms and bags wer e stored in the hazardous waste storage area and in open space.

Photograph showing the contaminated bags lying in hazardous waste storage area and in open space in the premises of ETP

- It was observed that unit is not maintaining proper records pertaining to ETP operation and discharge of waste water into the final pumping station. As the current flow meter reading was not matching with the record mentioned in the logbook for last discharge of waste water.

Conclusion:

During the visit industry was not operational reportedly due to annual boiler maintenance shutdown and non-availability of raw materials. ETP was also not operational during the visit therefore waste water samples were not collected. During the visit reportedly 1010 MT hazardous waste of various type was stored in the hazardous waste storage shed.

	Industry has provided concreate flooring in the sludge storage area. However, industry has not provided proper leachate collection facility in sludge storage shed. Industry needs to dispose-off the all the waste stored in the Hazardous waste storage area. Industry needs to provide proper leachate collection facility in the storage shed. During the visit it is observed that unit is not maintaining the logbook record of ETP operations and waste water discharge. The current flow meter readings were not matching with the last discharge of waste water into GIDC pumping station. Industry needs to maintain the proper logbook for the discharge of treated waste water and ETP operations. Industry needs to update the details of hazardous waste and other information on the display board at the entrance gate of the industry.	
8.	Date of Visit	25.10.2021
9.	Name of visiting officials	Shri Manoj Kumar Sharma, Sc-'B', CPCB, Shri shri B. Prasad, DEE, GPCB

NGT Matter OA 60/2021 (WZ)

ANNEXURE F-2

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Deepak Phenolics Limited (DPL)** Plot No.12/B/1 GIDC Estate Dahej. Tal. Vagra, Distric Bharuch
b)	Contact person & Contact numbers,Fax etc.	Mr. Hardeep Gohil Sr. Manager EHS, Mobile No. 8141603600
c)	Year of Establishment	2018
d)	CCA Validity	GPCB has issued CCA vide order no –AWH-97318 dated 24.11.2018 with validity till 29.08.2023.
e)	Operational status of the industry	The industry was operational during the visit.
f)	Present manufacturing products	As informed, during visit the industry was manufacturing following products: Phenol, Cumene, Acetone, Propane, Alpha Methyl Styrene, Benzene rich cut, Polyisopropylbenzene Drag, IPA.
g)	Main raw materials	Major raw material used in the manufacturing of above products are -- Propylene, Benzene, Sulphuric acid, Caustic lye.
2.	**Waste water management:**	
a)	Quantity of fresh water consumption and its source (**GIDC**/Bore well /Tankers)	**A. Based on past 06 months billing records** As per record provided by the industry, the average water consumption of the industry is **4671.61** KL/day. **B. As per CCA** As per CCA industry is permitted for the consumption of total **8261** KL of fresh water per day including for Domestic **12** KL/Day, and for gardening **19** KL/Day).

		The source of fresh water is GIDC water supply.
b)	Waste water segregation & its criteria of segregation	All waste water generated from production and ancillary operation is collected into one stream. However, industry has provided phenol recovery system for phenol containing wastewater at production plant and after recovery of phenol, waste water is taken into the collection tank of ETP.
c)	Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.	The waste water generated is stored in the respective plants and periodically it is taken to ETP for further treatment.
d)	Total waste water generation (KL/Day)	**A. Based on past 6 months' flow record** As record submitted by the Industry, the waste water is generated about 1152 KL/day. **A. As per CCA** As per CCA industry is permitted to generate total 2281 KL/day of waste water including domestic of 10 KL/day.
e)	**Waste water treatment process with capacity and operational status of ETP:** During the visit ETP of the industry was in operation. The industry collecting the waste water from the various plant locations and treating it in provided ETP which consisting of the following industrys- Collection Tank→Reaction Tank→Primary Clarifier→Equalization Tank→Extended Aeration Tank-1→Secondary Clarifier-1→Extended Aeration Tank-2→ Secondary Clarifier 2→Clarified Water Tank→MGF→ACF→Filtered water Tank→UF feed tank→UF system→RO feed Tank→RO system→RO permeate reused in plant→RO reject →Guard Pond→ Final disposal tank. • The waste water from domestic soak pit, cooling tower blow down and regeneration water from DM plant is directly added to Equalization tank of ETP. • The waste water generated from Back wash of UF Train 1 &2 and cooling tower blow down is collected in collection tank-2 and it is sent through static mixture flocculation tank(SMFT) and lamella clarifier to clarified water tank. • Sludge collected from primary clarifier, secondary clarifiers and from lamella clarifiers feed to filter press and filtrate from Filter Press is taken into Equalization tank and generated sludge is dried and disposed to CHWTSDF site.	

f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	At site industry is maintaining the record of inlet Effluent to ETP and quantity of treated effluent discharged into GIDC drainage system.
g)	Provision of any intermittent storage /guard pond etc. before disposal	Industry has provided a Guard tank before final treated discharge tank.
h)	Mode of disposal of waste water(GIDC drain, direct, CETP/ZLD, Gardening etc.	Industry discharges its treated waste water into the GIDC Final Pumping Station.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	As informed, the industry is not required MEE system. All generated waste water is treated in ETP. The RO system is installed in the line of ETP after Ultra filtration system and industry has not provided flow meter to RO feed. However, industry has provided flow meter at RO permeate tank which is reused in the plant.
3.	OCEMS/PTZ/flowmeter provision, Location of OCEMS, parameters monitored, working principals	Industry has installed Shimandzu make online TOC meter, pH meter and Magnetic flow meter at the final treated effluent discharge line. During the visit TOC meter and pH meter and magnetic flow meter found operational and value of TOC and pH meter was 95.3 ppm & 7.93 respectively. As informed by the industry TOC and pH meter are connected with GPCB server.
4.	Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed.	No bypass arrangement and accumulation of waste water were observed during the visit.
5.	Details of closure directions issued by GPCB in last 5 years wrt waste water management	No Closure direction, other direction, Notice of direction is issued under water Act in 5 years.
6.	**Details of effluent /waste water samples collected and analysis results:** During the inspection**, inspecting team** collected grab samples of final treated effluent at the final treated discharge tank and raw effluent samples from equalization tank of the ETP. The analysis results of the samples are tabulated below. **The analysis results of GPCB laboratory are tabulate below:**	

Name of the Parameters	Inlet to ETP (EQT)	Final treated Effluent at discharge point	GPCB standard Limit
pH	8.13	8.23	6.0 to 9.0
Colour	500	50	---
TSS	516	16	100
Fluorides	6.9	4.3	15
Sulphides	8.96	Nil	5.0
Ammonical Nitrogen	BDL	BDL	50
TKN	3.36	2.24	--
Sulphate	6985	2206	--
Nitrate Nitrogen	16.17	4.15	50
BOD (3 days at 27^0C)	968	37	100
COD	3428	142	250
Chlorides	231	402	--
Phenolic compounds	0.85	0.18	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis Results of Third-party lab:

Name of the Parameters	Inlet to ETP (EQT)	Final treated Effluent at discharge point	GPCB standard Limit
pH	8.25	7.99	6.0 to 9.0
Colour	>500	100	---
TSS	370	30	100
Fluorides	7.0	1.4	15
Sulphides	16	BDL	5.0
Ammonical Nitrogen	BDL	BDL	50
TKN	BDL	BDL	--
Sulphate	6364	333	--
Nitrate Nitrogen	37	5.5	50
BOD (3 days at 27^0C)	806	50	100
COD	3841	178	250
Chlorides	403	330	--
Phenolic compounds	1.5	BDL	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis results reveals that all analyzed parameters are meeting the norms prescribed by GPCB.

7. **Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.:**

- Industry has provided electronic Hazardous waste display board at the entrance gate of the industry but during the inspection display board was not displaying the details of the hazardous waste and other related information. As informed by the industry, the maintenance work of the same was under progress.
- Industry has provided details of fresh water consumption, waste water generation and production for the financial year 2019-2020 and 2020-2021. The details of the same are given in the below table-

Table: Quantity of total fresh water consumption, total waste water generation and production details for 2020-21,2019-2020and 2018-2019

Financial year	Quantity of Total fresh water consumption (KL/year)	Quantity of Total waste water generation (Kl/Year)	Total Production (MT/year)
2020-2021	1419311	279503	609879.2
2019-2020	1401519	237269	715494.1

- As per data provided by the industry, the industry has consumed 1419311 KL, 1401519 KL fresh water in financial year (FY) 2020-2021, and 2019-2020 respectively. Above data of waste water generation and total production in last two financial years shows that in 2020-2021 waste water generation was 0.458 KL/MT of production, in 2019-2020 the waste water generation was 0.332 KL/MT of production.

- As per record provided by the industry, the industry has recovered 34.471 MT phenol from process waste water through its extraction column from 01.10.2021 to 26.10.2021
- Industry has provided dedicated hazardous waste storage shed for the storage of hazardous waste like ETP sludge, process waste/distillate residue discarded drum and cotton waste etc.
- As per record submitted by the industry, the industry has generated 116.87 MT ETP sludge and 2.6 KL of used oil in last six months. The industry has disposed 32.77 MT ETP sludge in the month of July 2021 and 1.5 KL of used oil in the month of May 2021.
- During the visit, about 110 MT ETP sludge ,50 MT Process waste and discarded containers/contaminated cotton /bags were stored in the hazardous waste storage shed.

	• Industry has installed TOC meter, magnetic flow meter and pH meter at the final treated effluent discharge line which is reportedly connected with the server of GPCB. Industry is maintaining the record of these parameters in ETP logbook also. • The overall housekeeping in the ETP area found satisfactory and all units in ETP found operational. **Conclusion:** Industry meeting the norms for final outlet discharge prescribed by the GPCB and overall compliance is found satisfactory.	
8.	Date of Visit	26.10.2021
9.	Name of visiting officials	Shri Manoj Kumar Sharma, Sc-'B', CPCB, Shri shri B. Prasad, DEE, GPCB

ANNEXURE F-3

1. General Information of the Industry:		
a)	Name & Address	M/s Gujarat Fluorochemicals Ltd., Plot no. 12-A, GIDC Dahej, Tal. Vagra, Bharuch
b)	Contact Person & Contact Numbers, Fax	Shri Devendra Bute, Senior General Manager (Utilities) Mob.: 9687676738
c)	Year of Establishment	2007
d)	CCA Validity	GPCB has issued CCA with validity upto 16.02.2022
e)	Operational Condition	The industry was operational during visit.
f)	Present manufacturing Products	As informed, during visit the industry was producing following products: Chloroform, Methylene Dichloride, Sulphuric Acid (70%-80%), Hydrochloric acid (31% +/- 1%), Carbon Tetrachloride, Caustic Soda, Chlorine gas, Hydrogen, Sodium Hypochlorite, Calcium Chloride, Tetra Fluoro Ethylene, Dilute HF, Fluro elastomers, fluorinated ethylene propylene, gypsum, hexa fluoro propylene, hydrofluorosilicic acid, perfluoro alkoxy, poly tetra fluroethelene.
g)	Main Raw Materials	Salt, Barium Carbonate, Sodium Carbonate, Flocal, Alpha cellulose, 32% NaOH, Chlorine, Methanol, 98% H2SO4, Caustic.
2. **Wastewater Management**		
a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record As per the records submitted by the industry, average fresh water consumption for past 6 months is 12,245.77 KLD. B. As per CCA The industry is permitted to consume 13,254.22 KLPD fresh water for industrial purposes sourced from GIDC water supply.

b)	Wastewater segregation with specification of criteria of such segregation (if any)	The industry has segregated wastewater into 6 types of streams based on following criteria: Stream I: Stream with COD about 2000 mg/l and TDS about 30,000 mg/l treated in Fenton process. Stream II: Stream with COD<100 mg/l and TDS <2500 mg/l treated through primary treatment and Reverse Osmosis. The RO permeate is reused in the process and reject of RO is discharged in GIDC drain. Stream III: Stream from TFE, CMS, SR process plants with treatment comprising of primary and biological treatment Stream IV: Stream with TSS about 500 mg/l with treatment process comprising mainly of primary treatment. Stream V: Wastewater stream from Calcium Chloride plant having high TSS > 500 mg/l comprising mainly of primary treatment. Stream VI: Wastewater from Perfluoro Alkoxy (PFA) and Fluorinated Ethylene Propylene (FEP) plant provided with ETP comprising of primary and biological treatment.
c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided collection tank for all the streams of wastewater. The industry has not provided flowmeters at wastewater inlet streams at ETPs. Flow meter is provided at Final discharge to Final Pumping station.

d)	Total Wastewater generation (Based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record As per the records submitted, the industry discharged on an average total wastewater of 3119.55 KLD. B. As per CCA The industry is permitted to generate total 4411.67 KLD industrial wastewater. The industry is permitted to discharge 3231.67 KLD wastewater in GIDC drainage line and utilize 1600 KLD RO permeate generated during treatment.

e)	Wastewater treatment process with capacity and operational status Stream I: Collection tank →Mixing Tanks→Flash Mixer→High Rate Solid Contact Clarifier (HRSCC)→PSF→Holding tank→Guard pond In the collection tank sulphuric acid is added to decrease the pH~4 of the wastewater. In the mixing tanks Ferrous Sulphate and Hydrogen Peroxide is added for Fenton process. Further caustic soda and poly-electrolytes are added in the flash mixer and HRSCC for flocculation. Stream II: Collection cum equalization tanks→[Flash Mixer & HRSCC] & [Flash mixer & Tube settler] →Holding tank→PSF→MGF→Ultra Filtration→RO (2 stage)→Reject to guard pond After collection tanks (02 nos.), two primary treatment systems are provided in parallel i.e. one of flash mixer and HRSCC and other of flash mixer & tube settler. Ferric chloride and poly-electrolytes are added in both the primary treatments. The RO permeate is reused in the process and RO reject is sent to guard pond for further discharge into Final Pumping Station. Stream III: Collection cum equalization tank→Flash mixer→Primary Clarifier→Aeration Tank→Secondary Clarifier→Holding Tank→Guard Pond In the aeration tank, urea/DAP/cow dung is added for improving F/M ratio. Sludge thickener and decanter is provided for sludge separation from clarifiers. Stream IV : Collection cum equalization tank→flash mixer→Flocculator→Primary clarifier→Holding tank→Guard pond NaOH, Sulphuric acid, Ferric chloride and poly-electrolytes are added in the primary treatment. Sludge thickener and filter press is provided for sludge separation from clarifiers. Stream V: Collection cum equalization tank→Mixing Tank→HRSCC→ HRSCC Treated Tank →Holding tank→Guard pond NaOH, Sulphuric acid and poly-electrolytes are added in the primary treatment. Decanter is provided for sludge separation from HRSCC. Stream VI: Collection cum equalization tank →Mixing Tanks→Flash Mixer→High Rate Solid Contact Clarifier (HRSCC)→PSF→Holding tank→Guard pond Similar treatment process is provided for streams I and VI. All the wastewater treatment processes were operational during visit.

f)	On site Record keeping The industry has maintained logbook for ETP operation and HW generation & disposal.	
g)	Provision of any intermittent storage/guard pond etc. before disposal	The industry has provided 03 guard ponds of total capacity 6000 KL (namely C,D and F each of capacity 2000 KL). Pumping arrangement for discharging wastewater from guard pond C or D to Final Pumping station is provided. As informed, the wastewater stored in Guard Pond F is transferred to guard pond C or D before discharge into Final Pumping Station.
h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Direct discharge to final pumping station.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	The industry has provided flowmeter at final outlet of treated wastewater to GIDC drain. The industry has provided flowmeter at inlet and outlet of RO.

3. OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server

The industry has provided OCEMS connected with GPCB/CPCB server. The OCEMS analysers are placed in Guard pond C&D. The treated wastewater stored at guard pond F is first discharged into guard pond C or D before discharge into GIDC drain.

4. Any bypass/ponding/accumulation of wastewater inside or outside the premises observed

No bypass/ponding/accumulation of wastewater inside or outside the premises was observed during visit.

5. Details of Effluent Samples collected and analysis results

During visit, the inspecting team carried out sampling from following locations in the industry:

A. Inlet of ETP at collection tank for Stream I
B. Inlet of ETP at collection tank for Stream III
C. Inlet of ETP at collection tank for Stream VI
D. Outlet of treated wastewater to GIDC drain

The analysis results of the samples collected and analyzed by GPCB are tabulated below:

Parameters	**Inlet of Stream I**	**Inlet of Stream III**	**Inlet of Stream VI**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	6.21	<1	7.01	6.68	6 to 9
Colour	70	20	40	30	--
TSS	62	38	126	78	100
Fluorides	10.8	>40	4	13.1	15
Sulphides	1.44	<1.00	<1.00	2.24	5
Ammonical Nitrogen	2.24	5.6	3.92	8.96	50
Sulphate	32	293	84	802	--
TKN	7.84	11.2	8.96	11.2	50
Nitrate Nitrogen	1.61	52.55	11.66	4.96	50
BOD (3 days at 27^0C)	461	944	22	**122**	100
COD	1998	3735	91	**620**	250
Chlorides	121	15810	232	22350	--
Phenolic Compounds	0.28	0.63	0.26	0.29	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results submitted by third party laboratory are tabulated below:

Parameters	**Inlet of Stream I**	**Inlet of Stream III**	**Inlet of Stream VI**	**Final Outlet to GIDC drain**	**GPCB Discharge Standards as per CCA**
pH	6.03	1.14	6.96	6.62	6 to 9
Colour	>500	50	100	180	--
TSS	80	80	220	70	100
Fluorides	8	>50	8	16	15
Sulphides	BDL	BDL	BDL	BDL	5
Ammonical Nitrogen	BDL	BDL	BDL	BDL	50
Sulphate	29	492	82	1100	--
TKN	9	13	9	11	50
Nitrate Nitrogen	1.8	BDL	21	2.2	50
BOD (3 days at 27^0C)	487	830	25	**128**	100
COD	2020	3326	107	**570**	250

Chlorides	50	14598	188	25723	--
Phenolic Compounds	BDL	BDL	0.28	0.58	5

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results of the sample collected from the final outlet of treated wastewater into GIDC drain reveals that concentration of BOD and COD exceeds GPCB standards.

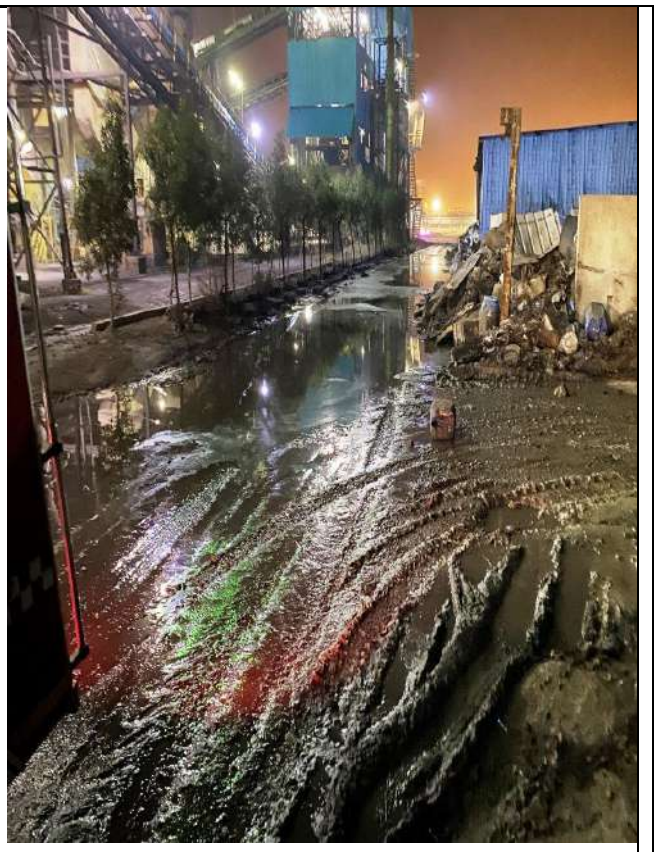
6. Closure Directions issued by GPCB in past 5 years wrt wastewater management.

The industry has been issued closure directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 30.01.2019 & 20.02.2019.

The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 06.03.2017.

7. Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.

- The industry has provided digital display board at the entry gate of the premises.
- The final treated wastewater discharged into the GIDC drain exceeded GPCB CCA standards.
- The industry has obtained CCA for manufacturing of calcium chloride as one of the product of total capacity 4750 MT/month. It is understood that Calcium Chloride manufacturing plant is provided only for the purpose of neutralization of hydrochloric acid (12%) as the generated quantity of calcium chloride is reportedly disposed at TSDF. As per the records submitted by the industry, it has produced on an average 36,952 MT/year Calcium Chloride in last 3 years and during visit about 180 MT of calcium chloride waste was stored inside the premises of the industry. Hence, the generated calcium chloride may not be categorized as product in the CCA.
- The fly ash from captive power plant and Caclium chloride were found stored in the industry near CPP. Poor handling of coal dust, fly ash and calcium chloride was observed in the premises during visit. Photographs depicting the same is provided below:



Hence, it can be concluded that the industry is discharging wastewater to Final pumping station of GIDC without complying with CCA discharge norms. The industry need to improve treatment efficiency of its ETP through regular maintenance and proper operation. The industry also needs to provide flow meter at wastewater inlet of ETP for each stream. The industry had stored calcium chloride along with other waste haphazardly inside the premises. The industry need to explore to utilize or sell calcium chloride produced instead of disposing it in CHWTSDF. The industry need to improve handling of coal dust, fly ash and other wastes inside the premises and implement good housekeeping practices.

8. Date of visit	26.10.2021
9. Name of Visiting Officials	Shri Saket Kumar, Scientist B, CPCB Vadodara Shri Rajendrasinh Gaekwad, AEE, GPCB Bharuch

ANNEXURE F-4

1	**General Information of the Industry:**		
	a)	Name & Address	**M/s. ONGC Petro Additions Ltd, OPAL-** Petrochemical Complex, Vill: Ambheta , Ta: Vagra, GIDC Dahej
	b)	Contact Person & Contact Numbers, Fax	Shri. Manoj Shrivastava- 02641666000 Shri. Vinay Prajapati- 9979786969
	c)	Year of Establishment	2016
	d)	CCA Validity	07/07/2025
	e)	Operational Condition	The industry was operational during inspection.
	f)	Present manufacturing Products	As informed, during inspection production of Ethlyene, Propylene, HDPE (Dedicated), LLDPE/HDPE, Polypropylene, Butene-1, HPG, CBFC, Hydrogen, Fuel gas, Butadiene, Benzene, C6+, C9+ and low polymer wax are under production.
	g)	Main Raw Materials	Following are the major raw materials used by the industry: Ethane, propane, Butene & Nephtha etc
2	**Wastewater Management**		
	a)	Quantity of Fresh water consumption and its source	A. Based on past 6 months billing record Average Water consumption : 31,907.5 KLD B. As per CCA • Industrial : 126,960 KL/day • Domestic : 2880 KL/day • Gardening: 480 KL/day
	b)	Wastewater segregation with specification of criteria of such segregation (if any)	The industry has provided following stream wise segregation and treatment Oily effluent streams Sanitary effluent treatment package Spent caustic treatment section Contaminated rain water unit RO based tertiary treatment plant RO based DM plant
	c)	Provision of storage of segregated stream with capacity, permanent provision of flow meter, piping etc.	The industry has provided segregated storage tanks for the collection of wastewater.

	d)	Total Wastewater generation (based on wastewater stream segregation such as high COD, low COD etc.)	A. Based on past 6 months flow record The industry has not provided flow meter at the inlet. Based on flow reading of final discharge to GIDC drainage system, average discharge is about 2670 KLD. B. As per CCA Total 35529 KLD wastewater shall be generated from manufacturing process and other ancillary industrial operation & unit shall recycle 14400m3/day as cooling tower make up, 17520 m3/day as DM plant feed, while unit shall discharge of 3600m3/day into the deep sea though GIDC drainage pipeline.
	e)	Wastewater treatment process with capacity and operational status • For High COD • For Low COD	As informed, the industry generates following streams of wastewater Oily effluent streams- 150m3/hr Sanitary effluent treatment package-- 15 m3/hr Spent caustic treatment section—2.1m3/hr Contaminated rain water unit-- 400m3/hr (Seasonal) RO based tertiary treatment plant-- 1150 m3/hr + recycled water RO based DM plant--160m3/hr (Net DM Production) The industry has provided ETP-1 for wastewater generated from utilities comprising of Ultra Filtration Plant & RO Plant. Separate ETP for oily effluent stream comprising of Tilted plate interceptor → Equalization Tank → Flash Mixture → Biological Treatment → Sequential Batch Reactor → Treated Water to Waste disposal tank (wherein wastewater from ETP-1, RO Reject, Neutralized DM Water and other wastewater streams are collected) → Pressure Sand Filter → Activated Carbon Filter → Disposal to final pumping station. As informed, RO permeate is reused in cooling towers and other utilities.
	f)	On site Record keeping	Records for the operation of ETP were maintained onsite.
	g)	Provision of any intermittent storage/guard pond etc. before disposal	Yes
	h)	Mode of disposal of wastewater (GIDC drain, CETP, ZLD, gardening, direct)	Disposal at Final pumping station though GIDC drainage.

	i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical locations as per Consent	Flow meter is provided at final discharge point
3	**OCEMS/ PTZ/ Flowmeter provision, location of OCEMS, parameters monitored, working principle, its online connectivity to CPCB/GPCB server**		TOC meter is provided at final outlet and was found showing erratic readings. Online connectivity to GPCB is provided.

4 **Details of Effluent Samples collected and analysis results**

GPCB analysis report

Parameters	treated W/W sample collected from Final discharge point of OPAL at FPS	sample collected from W/W disposal sump ~	Final treated W/W discharge point within premises of OPAL	GPCB Discharge Standards as per CCA
pH	7.52	7.6	7.67	5.5-9.0
Colour	25	30	30	--
TSS	18	24	16	100
Fluorides	3.95	4.45	4.7	15
Sulphides	<1.0	1.12	<1.0	5
Ammonical Nitrogen	6.72	BDL	2.24	50
Sulphate	717	1.12	<1.0	--
TKN	7.84	3.92	3.92	50
Nitrate Nitrogen	19.63	12.7	10.16	50
BOD (3 days at 27^0C)	17	19	21	100
COD	65	82	81	250
Chlorides	675	870	868	--
Phenolic Compounds	BDL	0.12	BDL	5

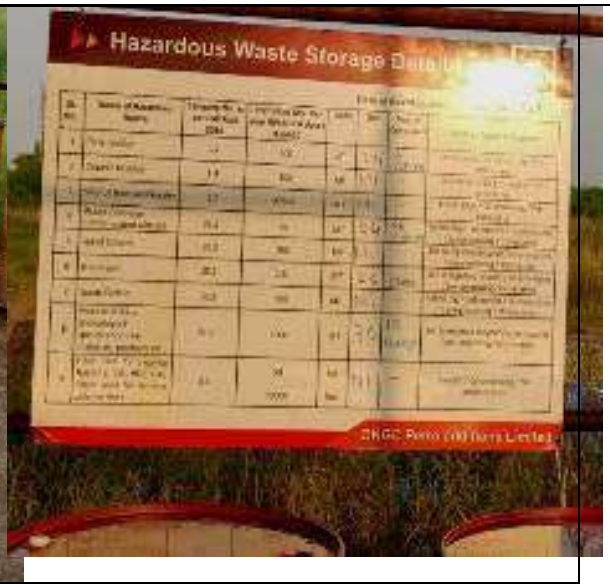
Note: all values are reported in mg/l except pH and color

Third party analysis report

Parameters	treated W/W sample collected from Final discharge point of OPAL at FPS	sample collected from W/W disposal sump ~	Final treated W/W discharge point within premises of OPAL	GPCB Discharge Standards as per CCA
pH	7.40	7.56	7.60	5.5-9.0
Colour	100	100	50	--
TSS	40	40	30	100
Fluorides	3.6	3.4	3.4	15
Sulphides	BDL	BDL	BDL	5
Ammonical Nitrogen	BDL	BDL	BDL	50
Sulphate	624	601	1514	--
TKN	6	4	BDL	50
Nitrate Nitrogen	12.2	9.5	6.2	50
BOD (3 days at 27^0C)	23	22	20	100
COD	83	91	79	250
Chlorides	752	841	916	--
Phenolic Compounds	0.2	0.56	0.2	5

Note: all values are reported in mg/l except pH and color

5	**Any bypass/ponding/accumulation of wastewater inside or outside the premises observed**	During visit no bypass/ponding/accumulation of wastewater inside or outside the premises was observed.
6	**Closure Directions issued by GPCB in past 5 years wrt wastewater management.**	The industry has been issued notice of directions under Section 33A of the Water (P&CP) Act, 1974 by GPCB on following dates in last 5 years: 16/06/2016 & 17/10/2018.
7	**Other Observations on overall wastewater management, hazardous waste management, mode of disposal, display board etc.** • The industry has provided digital Display board at the entrance gate. • During ETP was found operational. The analysis results of the sample collected from the final outlet of treated wastewater from FPS and from the premises meets the GPCB standards for all analyzed parameters. • The industry has not provided proper hazardous waste storage shed. During visit hazardous waste i.e. Tarry waste, waste/residue contaminated with oil, used resin and process residue was found stored inside a temporary shed without proper impervious flooring and leachate collection facility. Seepage was observed from some of the drums. Hazardous waste details are not updated by the industry. As informed, the industry is in the process of providing dedicated storage facility for HW. However, the present practice of storage of HW needs improvement.  	



- During visit, VOC odour and eye irritation felt by the team near oil & grease treatment unit of ETP. It was also observed that the stack attached to Effluent Collection Treatment System (for fugitive emission) not provided with stack monitoring facility.

Hence, it can be concluded that the sample collected from the final discharge point meets the GPCB discharge standard. However, the industry has not provided proper hazardous waste storage shed. Seepage was observed from some of the drums. The present practice of storage of HW needs improvement.

8	**Date of visit**	26/10/2021
9	**Name of Visiting Officials**	Amit Thakkar, Sc. D-CPCB N. D. Patel, DEE-GPCB

NGT Matter OA 60/2021 (WZ)

ANNEXURE F-5

<table>
<tr><td>1.</td><td colspan="2">General Information of the Industry:</td></tr>
<tr><td>a)</td><td>Name &Address of the Industry</td><td>M/s NOCIL LTD.
Plot No. 12/A/1 & 13/B,
GIDC , Dahej 392130
Tal. Vagra, District Bharuch</td></tr>
<tr><td>b)</td><td>Contact person & Contact numbers,Fax etc.</td><td>Mr. Mahesh Patel,
Factory Manager
Phone No. 02641-399211
Mob. No-9426894380</td></tr>
<tr><td>c)</td><td>Year of Establishment</td><td>2010</td></tr>
<tr><td>d)</td><td>CCA Validity</td><td>The GPCB has issued CCA with validity till 26.09.2024</td></tr>
<tr><td>e)</td><td>Operational status of the industry</td><td>Industry was operational during the visit on 26.10.2021</td></tr>
<tr><td>f)</td><td>Present manufacturing products</td><td>As informed, industry was manufacturing following products:
4 Amino Diphenyl Amine (4 ADPA)
N-1,3 Dimethyl Butyl-N-Phenyl-P-Phenylene diamines (Pilflex-13)
N-Cyclohexyl-2-BenzothiazylSulfenamides(Pilcure CBS/DCBS/NS</td></tr>
<tr><td>g)</td><td>Main raw materials</td><td>The main raw materials used in the manufacturing of the above products are tabulated as below-

<table><tr><td>Aniline</td><td>Methyl Isobutyl ketone</td></tr><tr><td>Nitrobenzene</td><td>4 ADPA</td></tr><tr><td>Hydrogen</td><td>Cyclohexyl/dicyclohexyl/tertiary butyl amines</td></tr><tr><td>Toluene</td><td>Hydrogen peroxide</td></tr><tr><td>CS2</td><td>Chlorine</td></tr><tr><td>Sulphur</td><td>NaMBT</td></tr><tr><td>Sodium hydroxide</td><td>Sulphuric acid</td></tr></table></td></tr>
<tr><td>2.</td><td colspan="2">Waste water management:</td></tr>
</table>

a)	Quantity of fresh water consumption and its source (**GIDC**/Bore well /Tankers)	**A. Based on past 06 months billing records** As per record provided by the industry, the industry has consumed on an average of **1975.07** KL of fresh water per day. **B. As per CCA** As per CCA, industry is permitted to consume total **2700** KL/day fresh water including for domestic **100** KL/day and for Gardening 50 KL/day. The source of fresh water is GIDC water supply.
b)	Waste water segregation & its criteria of segregation	As informed, the segregation of waste water is carried out as under: • Process wastewater generated from 4ADPA plant & PX-13 plant, • Process wastewater generated from Accelerator plant, • Utilities wastewater
c)	Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.	• Industry has provided Separate collection tanks for above three segregated wastewater streams. • Flow meter is not provided at the inlet of these streams. • Measurement of wastewater generated is carried out by marking the level difference.
d)	Total waste water generation (KL/Day)	• As per record provided by the industry, the industry has generated on an average of **1144.88** KL/day waste water including cooling, boiler blow down, process etc. • As per CCA, the industry is permitted for the generation of 1800 KL per day of waste water including 80 KL/day of domestic waste water.
e)	**Waste water treatment process with capacity and operational status of ETP:** • As informed, o About 300 KL/day waste water is generated from the manufacturing of 4 ADPA & Pilflex-13 plant, o About 400 KL/day waste water is generated from Accelerator plant(N-Cyclohexyl-	

	2-Benzothiazyl Sulfenamides/Pilcure CBS/NS product) and o About 450 KLD is generated from various utilities like Cooling tower blow down ,DM water regeneration and boiler blow down. • The industry has provided ETP of capacity of 250 KLD for the treatment of waste water generated from the plant of 4 ADPA & Pilflex-13 consisting of the following treatment industrys. **Solvent recovery system:** The Waste water generated is feed to solvent recovery column (liquid-liquid extraction) for the recovery of toluene. The recovered solvent is reportedly reused in the process….as per CCA. The wastewater after the recovery of solvent is fed to Equalization tank for further treatment. **Equalization tank (02 No.)→Settling Tank→Ozonation Tank→ Bioreactors(04 No.)→Collection Tank→Intermediate100 KL tank→Pressure Sand filter→final treated discharge tank of 600 KL capacity.** Industry has provided one filter press for sludge separation. The separated sludge is dried and finally disposed to TSDF site. Filtered waste water is collected back into the equalization tank of ETP. • Industry has provided Hydro cavitation treatment system for the treatment of wastewater generated from the Accelerator plant consisting of open tank wherein chlorine gas is passed followed by filter press for sludge removal. The treated wastewater from hydro cavitation process and waste water from utility section is directly sent to intermediate treated holding water tank of the above ETP.	
f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	Industry maintaining the logbook for the record of discharge of waste. The record of ETP sludge disposed is maintained in the form of monthly report sent to GPCB
g)	Provision of any intermittent storage /guard pond etc. before disposal	Industry has provided 600 KL capacity final treated waste water discharge tank to discharge treated waste water to final pumping station(FPS).
h)	Mode of disposal of waste water (GIDC drain, direct, CETP/ZLD, Gardening etc.	Industry is disposing treated waste water directly to the final pumping station for further disposal into deep sea through GIDC network.
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	As informed by the industry, in existing system, industry is not required MEE and RO system for treatment of generated waste water. Though, industry has installed 5 effect MEE for the treatment of waste water generated from the proposed new HMBTS plant.
3.	OCEMS/PTZ/flowmeter	Industry has installed online TOC meter, pH meter and

	provision, Location of OCEMS, parameters monitored, working principals	magnetic flow meter at the final discharge line. During the visit, TOC meter showing 78.33 ppm concentration for TOC and 7.74 value for pH of discharging treated waste water. As informed by the industry, the TOC meter is connected through GPCB and CPCB server.
4.	Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed	No bypass arrangement was observed during the visit.
5.	Closure directions issued by GPCB in past 5 years w.r.t. waste water management	No Closure direction, other direction or Notice of Direction is issued in last five years.

6. Details of effluent /waste water samples collected and analysis results:

During the visit grab samples collected from the final treated effluent from final pumping station, final treated effluent from final treated discharge tank at the industry premises and raw effluent from equalization tank after solvent recovery. The analysis results are depicted in below table-

Analysis results of GPCB Laboratory:

Name of the Parameters	Inlet to ETP (EQT)	Final treated Effluent from discharge tank of ETP	Final treated effluent discharge point at FPS	GPCB standard Limit
pH	7.11	8.23	7.84	6.5 to 8.5
Colour	300	150	150	---
TSS	108	36	26	100
Fluorides	BDL	3.8	5.0	15
Sulphides	<1.0	<1.0	<1.0	5.0
Ammonical Nitrogen	77.28	11.76	5.60	50
TKN	98.56	15.68	11.76	--
Sulphate	96	1892	2015	--
Nitrate Nitrogen	1.5	12.7	13.86	--
BOD (3 days at 27^0C)	757	84	71	100
COD	2559	**377**	**322**	250
Chlorides	254	4935	4625	--

Phenolic compounds	28.75	0.65	1.23	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis results of third-party lab:

Name of the Parameters	Inlet to ETP (EQT)	Final treated Effluent from discharge tank of ETP	Final treated effluent discharge point at FPS	GPCB standard Limit
pH	7.02	7.84	7.59	6.5 to 8.5
Colour	450	200	150	---
TSS	100	70	60	100
Fluorides	BDL	3.5	2.7	15
Sulphides	7.0	BDL	BDL	5.0
Ammonical Nitrogen	94	13	10	50
TKN	105	17	13	--
Sulphate	55	1586	1554	--
Nitrate Nitrogen	4.0	8.9	3.7	--
BOD (3 days at 27^0C)	510	70	80	100
COD	2376	**301**	**348**	250
Chlorides	234	4913	4380	--
Phenolic compounds	70.2	1.4	2.0	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results reveals that final treated waste water samples collected from final pumping station and from final treated discharge tank at industry premises exceeds the standard limit for discharge prescribed by the GPCB for the concentration of COD.

7. **Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.**

- The industry has provided electronic display board for displaying the information related to hazardous waste handled, and other relevant information.
- As per record provided by the industry, the industry discharging on an average of 1144.878 KL waste water per day. As per CCA condition, the industry is permitted to generate and treat 1720 KL/day biodegradable waste water from plant processes and its ancillary operations into ETP consisting of primary, secondary &

tertiary treatment facility. However, as informed by the industry, the ETP of the industry has only **250** KL/day treatment capacity. Thus the present hydraulic capacity of the ETP is very less as compared to the total wastewater generation and also violates the conditions as per CCA.

- The Industry has provided Hydro cavitation system for the treatment of wastewater generated from the Accelerator plant. The present way of hydro cavitation is basically chlorine treatment. However, for proper cavitation and treatment, controlled dosing of chlorine in closed system with venturi is required. Assurance of proper treatment in absence of requisite system is difficult. Moreover, hydraulic capacity of treatment is not available with the industry. Hence, the present practice of treatment of treated wastewater from hydro cavitation plant and untreated waste water from cooling tower and boiler blow down water through pressure sand filter of same 250 KLD ETP is not adequate. Therefore, industry need to provide adequate treatment system for the entire quantity mentioned in the CCA.
- The analysis results of samples collected during the visit from final treated waste water from final pumping station (FPS) and from final treated discharge tank in the premises of the industry, reveals that the concentration of **COD exceeds** the standard limit of discharge prescribed by GPCB.
- Industry has provided covered hazardous waste storage shed for storage of process waste, process residue, bottom waste and other contaminated plastic drum/insulation material etc. In addition, the Industry has provided concrete flooring with leachate collection facility for storage of ETP sludge. However, the storage shed was not provided with proper covering to avoid ingress of rain water which may result in contaminated runoff from such storage. During the visit ETP sludge and some process waste/process residue drums were also found kept in open area.

Photograph showing storage of ETP sludge and process waste drums kept in open area with concreate flooring with leachate collection facility

	• As per record provided by the industry, the industry has disposed 250.31 MT ETP sludge at TSDE site, 220.21 MT process waste/distillation residue to BEIL for incineration and 1486.02 MT recyclable waste from April 2021 to September 2021. • During the visit about 100 MT ETP sludge and 6.0 MT process waste was stored in the hazardous waste storage area. **Conclusion:** Industry is discharging waste water without meeting discharge norms as prescribed in CCA by GPCB. Therefore, industry needs to upgrade treatment system to meet the discharge norms. During the visit it is observed that ETP is not of adequate hydraulic load as per CCA condition hence, Industry needs to increase the ETP capacity of adequate hydraulic load as per CCA condition. Unit should have installed flow meter at the collection pits of respective plant and should maintain the proper record in logbooks.	
8.	Date of Visit	26.10.2021
9.	Name of visiting officials	Shri Manoj Kumar sharma, Sc-B, CPCB Shri B.D. Prasad, DEE,GPCB

NGT Matter OA 60/2021 (WZ)

ANNEXURE G-1

1.	**General Information of the Industry:**	
a)	Name &Address of the Industry	**M/s Yashashvi Rasayan Pvt. Ltd.** Plot No. Z/96/E Dahej SEZ II Tal. Vagra, District Bharuch
b)	Contact person & Contact numbers,Fax etc.	Mr. Bharat Hingladia, EHS Head Phone No. 6358894073
c)	Year of Establishment	2015
d)	CCA Validity	The GPCB has issued CCA vide order No-AWH-94328 dated 09.07.2018 with validity till 05.04.2023
e)	Operational status of the industry	Unit was operational during the visit.
f)	Present manufacturing products	**As informed, unit was manufacturing following products:** • 3,6 Dichloro 2Methoxy benzoic acid • Di Potassium salt of 3,6 Dichlorosalicilic acid • 2,5 Dichloro phenol • 2,5 Dichloro aniline
g)	Main raw materials	The main raw materials used in the manufacturing of the above products are tabulated as below- 2,5 DCNB, Hydrogen gas, Nitric acid, Sulphuric acid Sulphur dioxide gas, 2,5 DCA, KOH lye, DMS, SODA, Methyl ester2,5 anisole,methanol etc.
2.	**Waste water management:**	
a)	Quantity of fresh water consumption and its source (**GIDC**/Bore well /Tankers)	**A. Based on past 06 months billing records** As per record provided by the unit, the unit has consumed on an average of **273.10** KL fresh water per day. **B. As per CCA** As per CCA, unit is permitted to consume

		total **384** KL/day fresh water including for domestic **10** KL/day and for Gardening 10 KL/day. The source of fresh water is GIDC water supply.
b)	Waste water segregation & its criteria of segregation	As informed, the segregation of waste water is carried out as under: • Process wastewater containing potassium sulphate (on an average of 65-70 KL/day) • Process wastewater containing Sodium sulphate, (on an average of 20 KL/day)) • Utilities wastewater (30 KL/day)
c)	Provision of storage of segregated streams with capacity, permanent provision of flow meter, piping etc.	• Unit has provided Separate collection pits at the respective plant for above three segregated wastewater streams. • Flow meters are provided at the outlet of these streams.
d)	Total waste water generation (KL/Day)	• As per record provided by the industry, the industry has generated on an average of 120 KL/day waste water including cooling, boiler blow down and domestic waste water. • As per CCA, the unit is permitted for the generation of 241 KL per day of waste water including 7 KL/day of domestic waste water.
e)	**Waste water treatment process with capacity and operational status of ETP:** • As informed by the industry, about 65 to 70 KL/day waste water is generated from the process plant containing potassium sulphate and 20 KL/day waste water is generated from the process plant containing sodium sulphate. About 30 KL/day waste water is generated from utility section. **Treatment system for waste water containing K_2SO_4** Collection Tank→Phenol Extraction System (In process Plant)→Neutralization Tank→Stripper →MEE Feed Tank→ MEE-1(250 KLD)→Cooling Tank→ANF→ML sent to →MEE-2→RVPD. • The stripped out organic waste is collected in the HDPE drums and sent for DCP recovery in the process plant.	

	• The bottom part feed to MEE-1 and ML from MEE-1 is feed to MEE-2. • The salt generated from the ANF and RVPD is collected and periodically disposed to CHWTSDF site. **Treatment system for waste water containing Sodium Sulphate(Na_2SO_4):** Collection Tank→MEE feed tank → MEE-3 (72 KLD)→Chiller→ANF→Mother liquor(ML)→Mee-4→RVPD. • The waste water collected from process plant is heated at 70 degrees Celsius. • The ML generated from MEE 3 is feed to MEE-4 • The salt generated is collected and disposed to CHWTSDF . • The condensate formed is collected into the condensate holding tank • The waste water generated from the utility section is also collected in condensate holding tank. **Treatment system for the MEE condensate and waste water from utility section is as below-** MEE condensate holding tank→ Equalization Tank→(02 No.) Ozonation Tank→Bioreactor 1→Collection Tank 1→Bio reactor(2)→Collection Tank 2→ Bioreactor-3→ Collection Tank-3→Final Discharge tank→GIDC drainage system leading to pumping station D	
f)	Status of onsite record keeping related to waste water/ETP sludge generation and disposed off	Industry maintaining the logbook for the record of waste water generated and final treated waste water discharge into the GIDC drainage system.
g)	Provision of any intermittent storage /guard pond etc. before disposal	Industry has provided HDPE tank of 10 KL capacity before final treated waste water discharge into GIDC drainage system.
h)	Mode of disposal of waste water (GIDC drain, direct, CETP/ZLD, Gardening etc.	Industry is disposing treated waste water into GIDC pumping station D .
i)	Provision for flow meters at MEE feed, MEE condensate, RO etc. or any critical	Industry has provided flow meter at the inlet of different stream of waste water, at all 4 MEE feed and all 4 MEE condensate and at final waste water discharge line.
3.	OCEMS/PTZ/flowmeter provision, Location of OCEMS, parameters monitored, working principals	Industry has installed Tethys make online analyzers for the parameters COD, PH, TDS, BOD, Flow meter and TSS As informed by the industry, the online analyzers are connected with GPCB and CPCB server. During the visit all analyzers were found operational.
4.	Whether any bypass/ponding/accumulation of waste water inside or outside the industrial premises observed	No bypass arrangement was observed during the visit.

5.	Closure directions issued by GPCB in past 5 years w.r.t. waste water management	Closure direction, other direction, Notice, Show Cause Notice issued by GPCB based on various noncompliance under water Act in last 05 years are as under: Closure direction dated 03.04.02019

6. Details of effluent /waste water samples collected and analysis results:

During the visit grab samples were collected from the final treated waste water discharge tank and raw effluent from equalization tank of ETP for low COD/TDS. The analysis results are depicted in below table-

Analysis results of GPCB Laboratory:

Name of the Parameters	Inlet to ETP (EQT)	Final treated Effluent from discharge tank of ETP	GPCB standard Limit
pH	7.06	7.08	6.5 to 8.5
Colour	15	100	---
TSS	12	30	100
Fluorides	0.86	0.43	15
Sulphides	<1.0	<1.0	5.0
Ammonical Nitrogen	5.6	BDL	50
TKN	8.4	BDL	--
Sulphate	632	231	--
Nitrate Nitrogen	2.69	0.51	--
BOD (3 days at 27^0C)	3690	13	100
COD	14783	52	250
Chlorides	20	68	--
Phenolic compounds	13.23	0.66	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

Analysis results of third-party lab:

Name of the Parameters	Inlet to ETP (EQT)	Final treated Effluent from discharge tank of ETP	GPCB standard Limit
pH	7.06	7.14	6.5 to 8.5

	Colour	90	330	---
	TSS	120	**150**	100
	Fluorides	BDL	0.2	15
	Sulphides	2.5	BDL	5.0
	Ammonical Nitrogen	BDL	BDL	50
	TKN	8	BDL	--
	Sulphate	151	179	--
	Nitrate Nitrogen	1.4	1.5	--
	BOD (3 days at 27^0C)	2920	20	100
	COD	15360	60	250
	Chlorides	2	43	--
	Phenolic compounds	26.67	1.50	5.0

Note: All parameters are expressed in mg/l except for pH and Colour (Pt/Co scale)

The analysis results reveals that final treated waste water samples collected from final treated discharge tank exceeds the standard limit for discharge prescribed by the GPCB for the parameter of TSS.

7. **Other observations on overall waste water management, hazardous waste management, modes of disposal and display board etc.**

- The unit has provided display board for displaying the information related to hazardous waste handled, and other relevant information. However, the information was not updated on the display board.
- During the visit Industry was manufacturing 3,6 Dichloro 2 Methoxy benzoic acid and its intermediate compounds.
- Industry has provided 04 numbers of MEE followed by ANF and RVPD for the treatment of high COD high TDS waste water generated from the process plant.
- For the treatment of MEE condensate and waste water generated from utility section industry has provided ETP consisting of primary treatment followed by ozonation and Soil bioreactor treatment (SBT).
- The analysis results of samples collected during the visit from final treated discharge tank reveals that for TSS parameter result exceeds the standard limit of discharge prescribed by GPCB.
- During the visit, MEE salt, ETP sludge and process waste/distillation residue and re-processable hazardous waste were stored in the hazardous waste storage shed. However , some in-process materials were stored kept in drums in open area on concrete flooring. It is informed that these inprocess materials are kept stored there as per instruction of insurance company.
- The industry has not provided leachate collection facility in the hazardous waste

storage shed.

Photographs showing the hazardous waste storage shed with no leachate collection facility

Photograph showing the drums filled with hazardous waste and leakages of the hazardous waste from the drums

- During the visit, leakages of hazardous waste were observed from the drums.

Photographs showing the very old drums filled with hazardous waste and

	leakages of hazardous waste • As informed by the industry, there were storage of 667 MT of MEE salt and ETP sludge, 447 MT process waste/distillation residue in the hazardous waste storage shed. • Industry has not provided any fire alarm system, smoke detectors and water sprinkling system in the hazardous waste storage shed. • During the visit huge quantity of scrap material and insulation material were also stored in the premises of the industry. • As informed by the industry, in the month of june 2020 big explosion took place leading to large destruction of infrastructure in the industry premises. Reportedly, Industry has resumed its operation since August 2021. **Conclusion:** Industry discharging the waste water into the GIDC pumping station without meeting the discharge norms prescribed in CCA by GPCB. Therefore, industry needs to upgrade waste water treatment system for meeting the discharge norms prescribed in the CCA by GPCB. Industry has stored about 1114 MT of various type of hazardous waste in hazardous waste storage area. The industry needs to provide leachate collection facility in the storage shed. Industry needs to provide safety measures like fire alarming system, smoke detectors and water sprinkling system in the hazardous waste storage shed. Industry needs to dispose-off stored hazardous waste on priority basis. Industry should update the hazardous waste details and other information on the display board at the entrance gate of the industry.	
8.	Date of Visit	17.11.2021
9.	Name of visiting officials	Shri Manoj Kumar sharma, Sc-B, CPCB Shri B.D. Prasad, DEE,GPCB