

- 235

**REPORT OF JOINT INSPECTION-CUM- MONITORING OF COMMON EFFLUENT  
TREATMENT PLANT (CETP) VAPI INDUSTRIAL AREA, GUJARAT  
(Eighth Joint report for the Inspection-Cum- Monitoring  
for quarter January 2021 to March 2021)**

**1.0 BACKGROUND**

Hon'ble National Green Tribunal, Principal Bench, New Delhi passed order on 11.01.2019 in Original Application (OA) NO. 95 of 2018 in the matter of Aryavart Foundation Vs. M/s Vapi Green Enviro Ltd. (CETP, Vapi) & Ors. The application was regarding discharge of untreated/partially treated trade effluent by more than 500 industrial units in Vapi industrial cluster into River Damanganga.

In the said matter vide order dated 11.01.2019, Hon'ble NGT has given various directions to execute different tasks and formation of committees for execution of these tasks as per the para no. 55 of the order.

As per the para no. 55 (iv), it was directed to CPCB to undertake jointly with GPCB extensive surveillance and monitoring of CETP at regular interval of three months and submit its report to this Tribunal.

In this regard first five rounds of monitoring were carried out jointly by CPCB and GPCB on 12.02.2019, 20.05.2019, 13.08.2019, 15.11.2019 and 25.02.2020 respectively and the detailed reports for the five rounds of joint monitoring were submitted to Hon'ble NGT, Principle Bench, New Delhi.

The sixth round of monitoring for the quarter (April 2020 to June 2020) was carried out by the Regional Office of GPCB at Vapi wherein officials of CPCB, Regional Directorate Vadodara could not associate due to COVID-19 Pandemic Situation. The status report for the sixth quarter (April 2020 to June 2020) was jointly prepared by GPCB & CPCB based on the information, monitoring results provided by GPCB, RO, Vapi and CETP- M/s VGEL, Vapi and the same was submitted to Hon'ble NGT as Sixth report of the joint committee.

The seventh round of monitoring for the quarter (July 2020 to Sept 2020) was carried out by the Regional Office of GPCB at Vapi and the officials of CPCB, Regional Directorate Vadodara could not associate due to COVID-19 Pandemic Situation. The eight round of monitoring for the quarter (October 2020 to December 2020) was carried out jointly by CPCB and GPCB on 21.10.2020 and the status report for the seventh and eight rounds of monitoring (for the quarter - July 2020 to Sept 2020 and quarter - October 2020 to December 2020) was jointly prepared by GPCB & CPCB based on the information, monitoring results provided by GPCB, RO, Vapi and CETP- M/s VGEL, Vapi for the seventh round (i.e. July 2020 to September 2020)

and based on the joint monitoring carried out by CPCB & GPCB for the eight quarter (i.e. from October 2020 to December 2020) and the combined report was submitted to Hon'ble NGT as Seventh report of the joint committee.

The joint monitoring for the quarter commencing from January 2021 till March 2021 was carried out on **25.02.2021** by following officials of CPCB and GPCB:

01. Shri S. Pradeep Raj, Scientist-D, CPCB, Regional Directorate, Vadodara
02. Shri Manoj Kr. Sharma, Scientist-B, CPCB, Regional Directorate, Vadodara
03. Shri Mukesh Pancholi, Sr. Scientific Officer, GPCB, Regional Office, Vapi
04. Shri C. C. Patel, Scientific Officer, GPCB, Regional Office, Vapi

The details about CETP are already given in the first report submitted to Hon'ble NGT. The other current observations are as follows.

## 2.0 MONITORING

Joint inspection-cum-monitoring carried out by CPCB and GPCB on 25.02.2021 for the quarter – January 2021 to March 2021. The details of sampling locations at CETP are given below:

- I. Equalization tank
- II. Overflow of primary clarifier-1
- III. Overflow of primary clarifier-2
- IV. Overflow of secondary clarifier-1
- V. Overflow of secondary clarifier-2 and
- VI. Final outlet.

The analysis results of samples collected on 25.02.2021 during joint monitoring by CPCB and GPCB as per the direction of Hon'ble NGT is given in table – 1 below:

- 233

Table – 1: Analysis results of the sample collected during joint monitoring by CPCB &amp; GPCB on 25.02.2021

LOCATION	PARAMETERS												
	pH	TSS	TDS	FDS	COD	BOD	NH <sub>3</sub> -N	Phenols	Cl <sup>-</sup>	SO <sub>4</sub> <sup>-2</sup>	S <sup>-2</sup>	CN <sup>-</sup>	O&G
<b>Inlet standard</b>	6.5-8.5	300	--	2100	1000	400	50	1.0	600	1000	2.0	0.2	10
Inlet to CETP, Vapi	6.95	106	6760	6156	1134	346	25.5	5.98	2055	1741	6.70	0.20	20.8
Overflow of primary clarifier-1, CETP, Vapi	7.26	118	5076	4750	818	218	29.1		1272	1413	--	--	--
Overflow of primary clarifier-2, CETP, Vapi	7.03	190	6812	6360	962	238	36.0		2250	1451	--	--	--
Overflow of secondary clarifier-1, CETP, Vapi	7.34	84	8398	8354	299	20	56.9		3571	1152	--	--	--
Overflow of secondary clarifier-2, CETP, Vapi	7.14	88	8672	8260	253	22	57.1		3620	1166			
Final out let of CETP, Vapi	7.33	92	8804	8598	284	27.4	55.5	0.36	3669	1138	0.47	0.117	3.7
<b>Outlet standard</b>	6.5-8.5	100		2100	250	30	50	1.0	600	1000	2.0	0.2	10

Note: Except pH, all other parameters are expressed in mg/l.

232

### 3.0 OBSERVATIONS

- The analysis results of the sample collected during joint quarterly monitoring by CPCB and GPCB on 25.02.2021 (Table - 1) shows that the concentration of FDS (6156 mg/l), COD (1134 mg/l), Phenols (5.98 mg/l), Chloride (2055 mg/l), Sulphate (1741 mg/l), Sulphide (6.70 mg/l) and O&G (20.8 mg/l) at inlet are not meeting with the inlet norms (FDS:2100 mg/l, COD: 1000 mg/l, Phenols: 1.0 mg/l, Chloride: 600 mg/l, Sulphate: 1000 mg/l, Sulphide: 2.0 mg/l & O & G: 10 mg/l) whereas the pH value and concentrations of TSS, BOD, NH<sub>3</sub>-N and Cyanide are meeting the inlet norms.

The concentrations of FDS (8598 mg/l), COD (284 mg/l), NH<sub>3</sub>-N (55.5 mg/l), Chloride (3669 mg/l) and Sulphate (1138 mg/l) in the sample collected from outlet of CETP are not meeting the Outlet norms (FDS: 2100 mg/l, COD: 250 mg/l, NH<sub>3</sub>-N: 50 mg/l, Chloride: 600 mg/l, Sulphate: 1000 mg/l) prescribed by GPCB. The other parameters (pH, TSS, BOD, Phenol, Sulphide, Cyanide and O & G) are within the Outlet norms. It is to be noted that treatment of FDS, Chloride and Sulphate is not warranted at CETP as inlet as well as outlet norms are same and there are no treatment system installed for the reduction of these pollutants. It is expected that member units needs to provide measures for the reduction of these pollutants particularly inorganic salts.

- The OCEMS values of inlet and outlet of CETP noted by joint team during the visit on 25.02.2021 is given in following table:

**Table-2: OCEMS values during the joint visit**

	Date & Time	NPOC (PPM)	COD (PPM)
Inlet	25.02.2021 @12:08 hrs	450.65	788.64
Outlet	25.02.2021 @11.08 hrs	131.84	197.76

It is observed from OCEMS values that COD values noted during the visit are within the inlet (1000mg/l) and outlet (250mg/l) norms for COD.

- GPCB has issued closure direction under section-33 (A) of the Water (P & CP) Act 1974 vide letter dated 24.05.2019 to M/s VGEL (CETP) Vapi and amended further on 11.06.2019 which subsequently revoked from time to time with latest revocation order on 29.10.2020 which is valid up to three month from date of issue of order i.e. up to 29.01.2021. M/s. VGEL has applied to GPCB requesting extension of revocation of closure order vide letter dated: 15.01.2021 and subsequently GPCB visited the CETP (M/s. VGEL) on 22.01.2021 for compliance verification for considering revocation of closure direction.

- The details of the monthly outlet flow of CETP (treated effluent) provided by the CETP for the period from October 2020 to February 2021 (till 25.02.2021, i.e. the day of visit) is given in the following table:

Table-3: Monthly outlet flow of CETP

Month	Total Flow at Outlet of CETP (m3)	Average Flow at Outlet of CETP (in m3/Day)	Average Flow at Outlet of CETP (in MLD)
Oct-20	1473951	47546.81	47.5468
Nov-20	1347200	44906.67	44.9067
Dec-20	1406024	45355.61	45.3556
Jan-21	1519135	49004.35	49.0044
Feb (till 25/02/2021)	1213881	48555.24	48.5552

- The details provided by the CETP shows that the daily average outlet flow during the months of October 2020 to February 2021 is in the range of 44.9 MLD to 49 MLD which is within the consented capacity of 55MLD.
- The details of sludge generation and the disposal details for the period October 2020 to February 2021 (till 25.02.2021, i.e. the day of visit) and the stock available at site during the visit are provided by the CETP and the same is given in the following table:

Table-4: Details of ETP sludge generation and disposal

Month	Actual Sludge Generation (MT/M)	Disposal after Drying and leachate removal (MT/M)	Stock at the end of the Month (MT)
Oct-2020	4286	0	10500
Nov-2020	4560	1048.5	12000
Dec-2020	2842	1404.3	11800
Jan-2021	3348	3611.1	10200
Feb (till 25/02/21)	2840	7128.0	4600

- The monthly sludge generation is in the range of 2842MT (during December 2020) to 4560MT (during November 2020), which is within the quantity permitted (200 MT/day) in the CCA issued by GPCB.
- The details of the treatment and disposal of high COD effluent in the Common Multiple Effect Evaporator (CMEE) and Common Spray Dryer (CSD) and the salt generation and disposal details for the period from October 2020 to February 2021 (till the day of visit) are provided by the CETP and the same is given in following table:

Table-5: Details of treatment of high COD effluent in CMEE &amp; CSD and salt disposal


Month	Received w/w Qty in KL	Salt generation in MT at CSD-1	Salt generation in MT at CSD-2	Total Salt Generation MT/M	Salt Disposal in TSDF (MT/M)	Stock at the end of the Month
-------	------------------------	--------------------------------	--------------------------------	----------------------------	------------------------------	-------------------------------

						(MT)
Oct-2020	5612.1	62.3	466.4	528.7	0	3257
Nov-2020	4862.6	90.9	359.9	451	95.8	3612
Dec-2020	6744.7	155.31	484.995	640.305	379.6	3873
Jan-2021	8611.9	157.635	451.05	608.685	279.1	4202
Feb- 2021 (till 25/02/21)	7049.0	138.57	344.1	482.67	292.2	4393

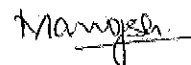
- The total monthly salt generation from common spray dryers is in the range of 451MT during November 2020 to 640 MT during December 2020, which is within the quantity permitted (26 MT/day) in the CCA issued by GPCB.
- The CETP is in the process of installation of 200 KLPD capacity Mechanical Vapor Recompression (MVR) for the treatment of high COD effluent and completed the tendering process. Technical valuation has been carried out and placed the order for MVR.
- The CETP has appointed IIT-Bombay and carried out performance assessment study of CETP and IIT-Bombay has submitted adequacy report to the CETP.

#### 4.0 RECCOMENDATIONS

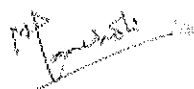
- CETP has shown improvement in its operation and achieved the discharge standards for most of the critical parameters except FDS, Chloride & Sulphates (inorganics) and COD & NH<sub>3</sub>-N. However, further improvement is required to meet all the discharge standards on continuous basis. Treatment of FDS, NH<sub>3</sub>-N, Chloride and Sulphate are not warranted at CETP as inlet as well as outlet norms are same and there are no treatment system installed for the reduction of these pollutants in the CETP. It is expected that member units needs to provide the treatment units for the reduction of these pollutants-inorganic salts. Therefore, CETP needs to regulate the discharge of their member units to meet the inlet standard.
- CETP should put more efforts in proper operation for meeting with outlet norms.
- The CETP needs to regulate the discharge of member units to meet the inlet standard.
- List of defaulting industries should be regularly (monthly) shared with GPCB for taking suitable action against these industries.



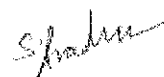
(C. C. Patel)  
Scientific Officer  
GPCB, Regional Office - Vapi



(Manoj Kr. Sharma)  
Scientist – B  
CPCB, Regional Directorate - Vadodara



(Mukesh Pancholi)  
Sr. Scientific Officer  
GPCB, Regional Office - Vapi



(S. Pradeep Raj)  
Scientist – D  
CPCB, Regional Directorate - Vadodara