CHAPTER - V

Industrial Wastewater Management

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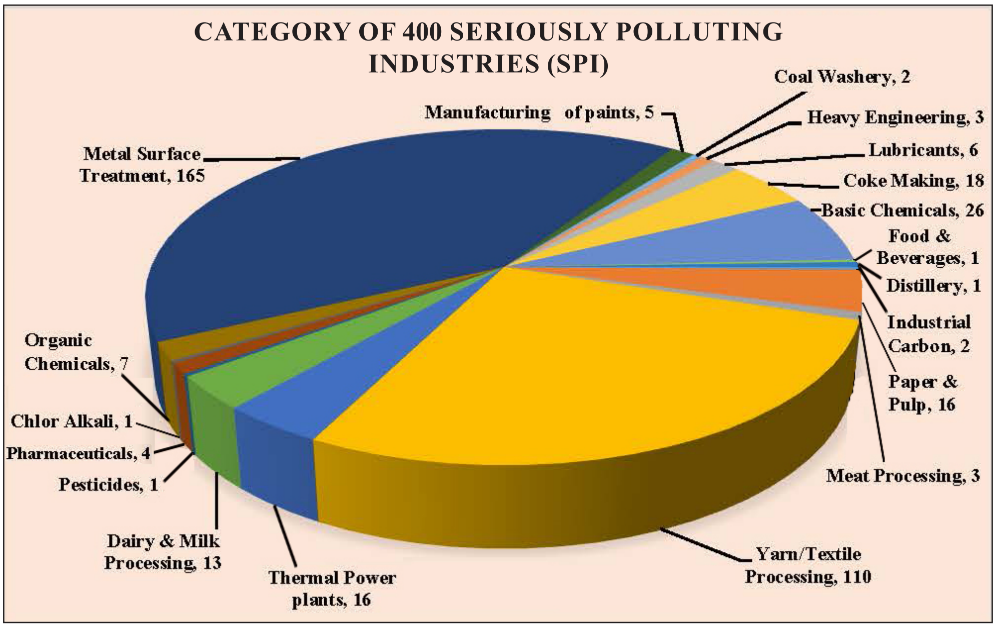
5.1 Introduction

According to Section 25/26 of the Water (Prevention and Control of Pollution) Act, 1974, "*no industry can discharge sewage or trade effluent into a stream or well or sewer or land beyond the permissible standards prescribed by CPCB*". Any contravention of the provisions, shall be punishable with imprisonment or fine under section 43/44 of the Act. The WBPCB can also issue directions for closure of an industry and disconnection of electricity in case of persistent defiance by any polluting industry under Section 33-A of the Water Act, 1974.

Under Section 17 (f) of the Water Act, 1974, the Board is responsible for inspecting sewage or trade effluents and works and plants for the treatment of sewage and trade effluents.

As per State Environment Report of 2020-21, 454 industries[76] (Grossly Polluting Industries-GPIs and Seriously Polluting Industries-SPIs) had been identified under different categories as water polluting industries of which 65[77] were selected for detailed scrutiny in audit as shown in **Charts 5.1** and **5.2.**

Chart 5.1: Category of 400 Seriously Polluting Industries

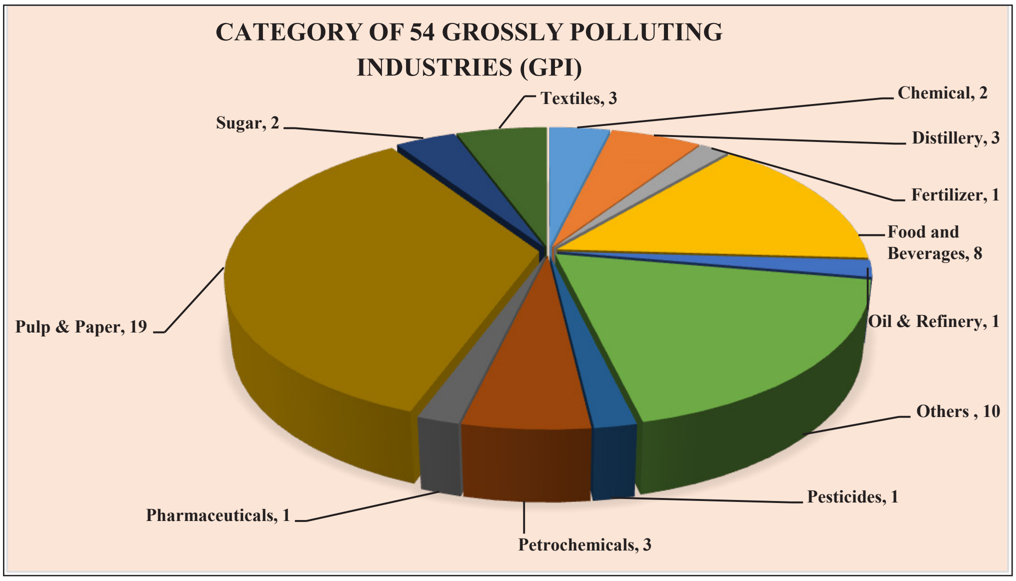


(Source: Records of WBPCB)

[76] 400 SPIs and 54 GPIs.

[77] 51 SPIs and 14 GPIs.

Chart 5.2: Category of 54 Grossly Polluting Industries



(Source: Records of WBPCB)

This Chapter deals with Industrial Wastewater Management being implemented by WBPCB through various provisions of the Water Act, 1974 and the Environment Act, 1986. Audit findings are discussed in the succeeding paragraphs.

5.2 Consent Management

According to the Water Act[78], 1974, industrial units, that started operations after obtaining Consent to Establish (CTE), issued by the WBPCB, had to apply to the WBPCB for CTO[79] which will be valid for five years. No industry can operate without a valid CTO. This CTO is granted to an industry on the basis of review of following information:

(i) Name of the products/ by-products and the quantity to be produced per month,

(ii) Discharge/emission parameters with prescribed standards and the frequency of effluent and emission sampling,

(iii) Type and quantity of fuel used *etc.*

Thus, through CTO, WBPCB monitors compliance to environmental laws and standards in terms of raw material consumed, emissions, effluents, and waste discharges standards. The renewal of applications of CTO should be filed by the industry at least 120 days prior to its expiry.

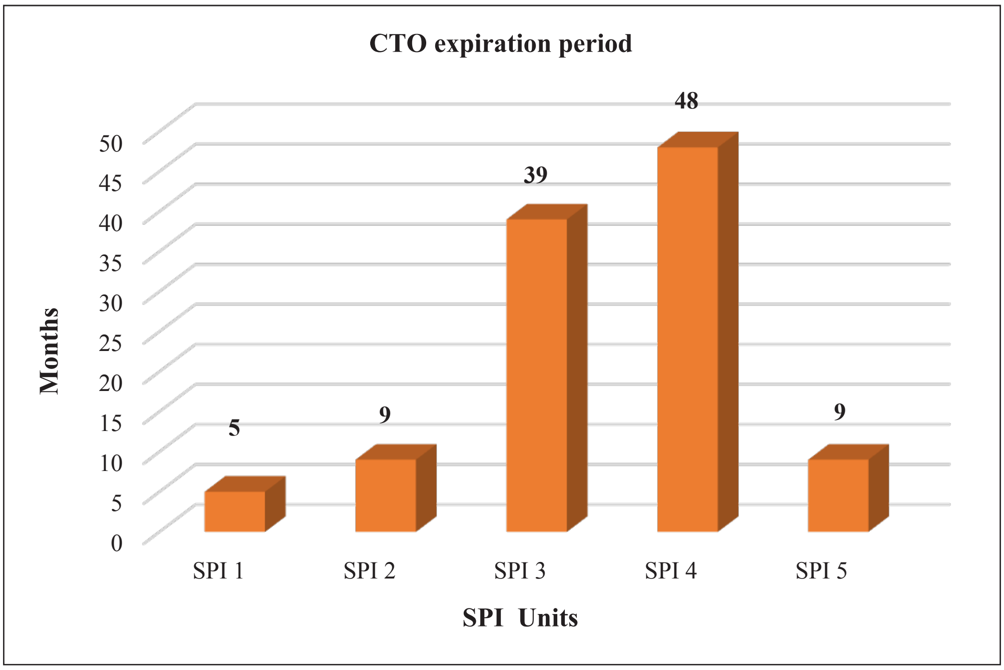
Audit observed that as of March 2023, five[80] out of 51 sampled SPIs were operating with CTOs that had already expired for periods ranging between five to 48 months, as shown in Chart 5.3.

[78] Section 25 of the Water (Prevention and Control of Pollution) Act, 1974.

[79] The validity of the CTO of Red industries was increased (June 2016) by WBPCB from three to five years.

[80] SPI 1-M/s Sreema Dyeing and Bleaching work; SPI 2-M/s Kalachand Electroplating Work; SPI 3-M/s Monoranjan Jalui; SPI 4-M/s Dhara Brothers; SPI 5-M/s Biplab Processing.

Chart 5.3: CTO Expiration Period



(Source: Records of WBPCB)

Thus, due to non-renewal/delayed renewal of CTOs, compliance with environmental laws by these industries could not be ensured by the WBPCB.

The Department did not furnish any reply in this regard.

Recommendation 8:
WBPCB should ensure that Industrial units are in possession of valid CTOs and impose penalties in case of lapses.

5.2.1 Mandatory Inspection by WBPCB for environment surveillance

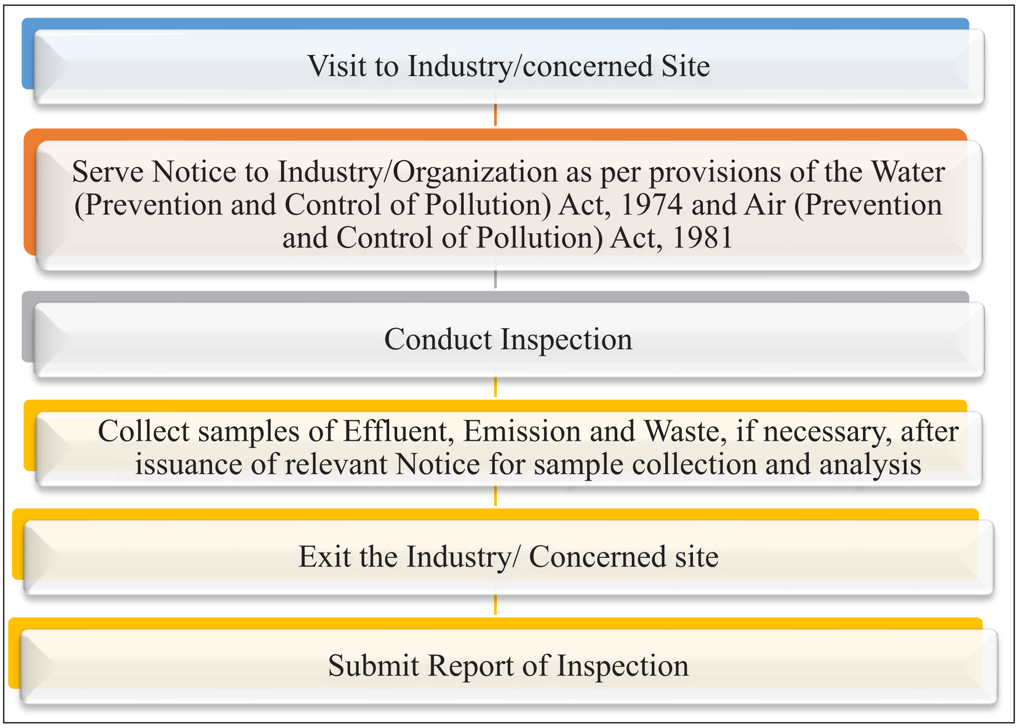
According to the Comprehensive Inspection Policy (2019)[81] of WBPCB, SPIs were to be inspected once in a year. Subsequently, WBPCB, as per the directions of CPCB, issued (January 2020) an order[82] which mandated inspection of SPIs at a frequency of six months[83]. Inspection procedure of WBPCB is depicted in **Chart 5.4.**

[81] Memo No. 1546-4A-6/2015 (Part-II) dated 29.05.2019.

[82] Memo No. 689 (8)- 384/ WPB/ O&E/ 2020.

[83] Highly Polluting 17 category Industries- three months and Red category other than 17 category industries six months.

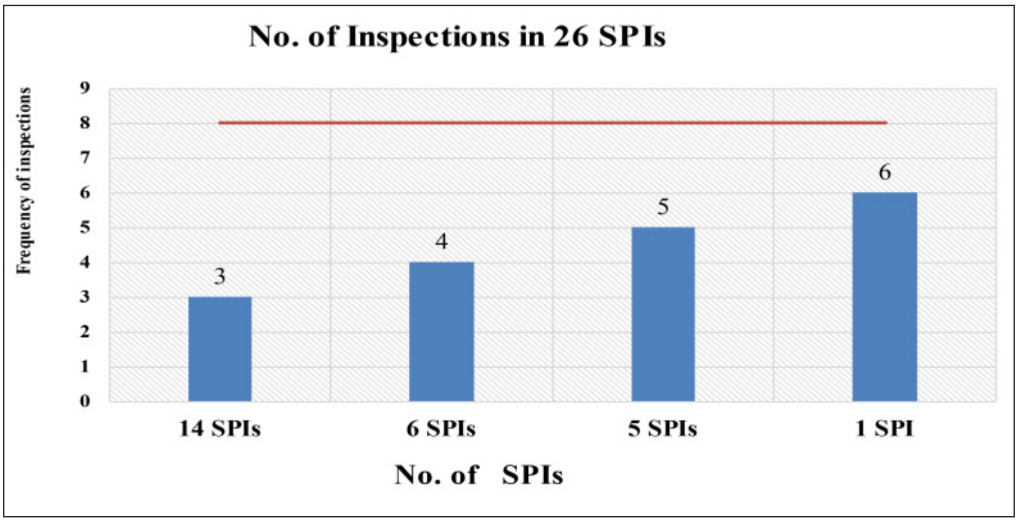
Chart 5.4: Inspection Procedure by WBPCB



Audit observed the following:

- Out of 51 sampled SPIs, 34 SPIs were operational during 2018-23.
- Records related to inspection by WBPCB in case of six out of 34 SPIs, were not available.
- Each of the SPIs was required to be inspected eight times from May 2019 to March 2023. However, it was noted that 26 operational SPIs[84] were not inspected by the WBPCB for the mandated eight times over the five years period. Audit observed that out of 26 operational SPIs, 14 SPIs were inspected up to three times, six SPIs four times, five SPIs five times and one SPI six times during 2018-23, as detailed in **Chart 5.5** and ***Appendix 1.***

Chart 5.5: No of inspection in 26 SPIs



[84] 2 SPIs have been regularly inspected.

Further, as per Rule 6 of Hazardous Waste Management Rules, 2016, industries were required to apply and obtain an authorisation from WBPCB for managing hazardous waste.

Audit observed that out of 65 sampled industrial units, while all 14 GPIs had valid hazardous waste authorization, 22 out of 51 SPIs did not have this authorization.

The above issue indicated that WBPCB did not efficiently monitor compliance with the mandated frequency of inspection for effective environmental surveillance of industries.

Recommendation 9:
WBPCB should strengthen its monitoring mechanism to adhere to the required number of inspections and ensure compliance by polluting industries.

5.2.2 Action taken against non-compliant GPIs and SPIs

As per Water (Prevention and Control of Pollution) Act, 1974, Board officials conduct regular inspections of the industries under their consent management. In case of any non-compliance noticed, the industries were to be allowed reasonable time to comply with the environmental statutes. On repetitive violation of environmental norms, the defaulting units were to be served with show-cause notices/directions, followed by technical hearing, time-bound compliance submitting a bank guarantee as security and imposition of fines. Repeated non-compliance would lead to closure of the units along with disconnection of electricity under extreme circumstances.

Since 2017, GPIs in addition to the quarterly monitoring by WBPCB, were also being monitored by CPCB. The monitoring by CPCB was done by engaging joint teams of experts/third party technical institutes like IITs, NITs, *etc*. WBPCB had to take appropriate action such as issuance of directions to ensure implementation of pollution control measures, as suggested by CBPC within 15 days of receipt of such inspection report from CPCB. Further, in case of Show Cause Notices issued by CPCB/WBPCB the units were to be re-inspected by WBPCB and closure directions issued in case of non-compliance within 30 days. The compliance status as well as action taken by WBPCB during the period 2018-23 is detailed in **Table.5.1.**

Table 5.1: Status of action taken by WBPCB for GPIs

Year	Total No. of GPIs inspected	Non Complying GPIs (%)	Non-complying GPIs issued with Show Cause Notice (SCN)	Temporarily closed GPIs after issuance of notice	Permanently closed GPIs
2018-19	44	12(27)	8 (6 SCN & 2 Closure)	4	Nil
2019-20	48	5(10)	2 (SCN)	3	Nil
2020-21	54	23(43)	15 (SCN)	8	Nil
2021-22	55	16(29)	11 (SCN)	4	1
2022-23	56	12(21)	4 (SCN)	8	Nil

(Source: Regional Director, Kolkata, CPCB)

From the table, it can be seen that during the audit period, percentage of non-complying GPIs ranged between 10 *per cent* and 43 *per cent*, with reference to GPIs inspected.

Similarly, the instances of non-compliances were observed in case of the sampled 51 SPIs as detailed in **Table 5.2**

Table 5.2: Status of action taken by WBPCB for sampled SPIs

Year	No. of sampled SPI	Non complying SPIs (per cent)	No. of Notices issued	No. of notices issued for closure	No. of Directions issued
2018-19	51	14(27)	15	2	2
2019-20	51	12(24)	5	1	4
2020-21	51	3(6)	4	0	2
2021-22	51	6(12)	5	0	5
2022-23	51	14(27)	10	1	7

From the table, it may be seen that during the audit period, percentage of non-complying SPIs ranged between six and 27 *per cent*.

Thus, percentage of non-complying SPIs in 2022-23 in comparison with 2018-19 remained the same despite monitoring by WBPCB. Some illustrative cases highlighting failure of WBPCB in taking timely action against the non-compliant industries have been discussed in **Table 5.3**.

5.2.3 Implementation of Charter based participatory approach for reduction in water consumption, effluent generation and pollution load

Textiles, Pulp and Paper, and Distilleries industries were categorised under the 17 categories of highly water consuming and polluting industries by CPCB.

To accomplish desired level of environmental protection and to meet objectives of the National Mission for Clean Ganga, CPCB formulated (February 2015) industry specific '***Charter based participatory approach for reduction in water consumption, effluent generation and pollution load by adoption of cleaner technologies & training for best management practices***'.

SPCBs were to ensure proper implementation of the said Charter and were responsible for monitoring and surveillance of industries as against Charter norms. Participating units were not allowed to bypass Effluent Treatment Plant (ETP) systems and discharge partially treated/untreated effluent into any water streams.

The implementation of the Charter was considered to have commenced on the date of issue of directions/ instructions from SPCBs/PCCs and the entire action plan was to be implemented before 31 March, 2017. However, as of June 2023, WBPCB was yet to implement the Charter in these three (***Textiles, Pulp and Paper, and Distilleries Industries***) categories of industries.

According to the WBPCB's inventory, there were 127[85] industries under these three categories, of which Audit conducted a detailed scrutiny of 14[86] units.

[85] 110 textile, 16 pulp and paper and one distillery.

[86] 11 textile, two pulp and paper and one distillery.

Scrutiny of records and joint physical inspection of the units along with officials of WBPCB revealed the following issues:

- Mandatory eight and 20 number of inspections in case of SPI and GPI respectively were not carried out by WBPCB during 2018-23 in nine industries[87].
- In nine industrial units[88] ETPs were either non-operational or did not meet the effluent discharge standards.
- Flow meters required at ETP inlets and outlets for measuring the quantity of untreated effluent received and treated effluent discharged were not installed in nine industries[89].
- Hazardous Waste Authorization[90], to be issued by WBPCB was not possessed by eight units[91].
- No facility for reusing treated waste water existed in 11 industrial units[92].
- Under the West Bengal Ground Water Resources (Management, Control and Regulation) Rules 2006, the State Water Investigation Directorate is responsible for issuing permits for ground water extraction. Audit observed that four industries[93] were drawing groundwater for industrial purposes without valid authorisation,
- Against the authorisation of 8.25 KLD, an industrial unit (Tirupati Udyog) extracted 44.38 KLD of ground water.

Violations of CTO conditions noticed during Joint physical verification of the selected industries are detailed in **Table 5.3**:

87 M/s Sreema Dyeing & Bleaching Works, Sunrise Industry, M/s Bijoy Processing Industries, International Bleaching & dyeing Works, Chiranjilal Rayons Pvt. Ltd., Rupa & Co. Ltd., M/s Onkar Parivahan Finance Pvt. Ltd., East India Paper & Board Mills and Carlsberg India Pvt. Ltd.

88 Sunrise Industry, M/s Bijoy Processing Industries, International Bleaching & dyeing Works, Chiranjilal Rayons Pvt. Ltd., Rupa & Co Ltd., Superfine Thread Co., M/s Onkar Parivahan Finance Pvt. Ltd., East India Paper & Board Mills and Carlsberg India Pvt. Ltd.

89 M/s Sreema Dyeing & Bleaching Works, Sunrise Industry, M/s Bijoy Processing Industries, International Bleaching & dyeing Works, Krishna Tissue Pvt. Ltd., Chiranjilal Rayons Pvt. Ltd., M/s Onkar Parivahan Finance Pvt. Ltd., East India Paper & Board Mills and Burdwan Kraftboard LLP earlier name was Bardhaman Dharmaraj Paper Mill (P) Ltd.

90 Hazardous Waste Authorization (HWA) is required for the generation, collection, reception, storage, transportation, treatment, disposal or any other manner of handling of hazardous and other wastes listed in Schedules I, II and Parts B & D of Schedule III of the Hazardous Wastes (Management and Transboundary Movement) Rules, 2016.

91 M/s Sreema Dyeing & Bleaching Works, M/s Bijoy Processing Industries, International Bleaching & dyeing Works, Krishna Tissue Pvt. Ltd., Superfine Thread Co., East India Paper & Board Mills, Carlsberg India Pvt. Ltd. and Ballavpur Paper Mfg Ltd.

92 M/s Sreema Dyeing & Bleaching Works, Sunrise Industry, M/s Bijoy Processing Industries, International Bleaching & dyeing Works, Chiranjilal Rayons Pvt. Ltd., Rupa & Co. Ltd., Superfine Thread Co., M/s Onkar Parivahan Finance Pvt. Ltd., East India Paper & Board Mills, Carlsberg India Pvt. Ltd. and Ballavpur Paper Mfg Ltd.

93 Chiranjilal Rayons Pvt. Ltd., Superfine Thread Co, M/s Onkar Parivahan Finance Pvt. Ltd. and East India Paper & Board Mills.

Table 5.3: Violations of CTO conditions during 2018-23

Sl No.	Industry	Inspection and Test Samples	Action taken by WBPCB	Audit observation (Joint physical verification)
CATEGORY-TEXTILE				
1.	M/s Chiranjila Rayons Pvt. Ltd. (SPI)	• WBPCB inspected five times against the stipulated eight times (63 *per cent*). • Total five samples of the trade effluents were analysed during the audit period, all of which were found to be non-compliant with discharge standards[94].	• Show cause notice was issued in September 2019, followed by a hearing in December 2021. • WBPCB issued direction in May 2022, and an Environment Compensation (EC) of ₹ 3.15 lakh was imposed along with a Bank Guarantee of ₹ 5.00 lakh which was duly paid by the unit.	• Despite the action taken by the WBPCB, compliance with environmental norms had not been done. • ETP was not fully functional, partially treated colored effluent was being discharged. (April 2023) • Water quality tests done (23 November 2023) by CPCB in the presence of officials of WBPCB and Audit also showed that the industry was non-compliant (TSS[95]-1,477 and SAR[96]-71.9).
2.	M/s Onkar Parivahan Finance Pvt. Ltd. (SPI)	• WBPCB inspected five times against the stipulated eight times (63 *per cent*). • Two sample reports of treated effluents were made available to Audit, both were found to be non-compliant[97].	• Three (3) show-cause notices[98] were issued. • Closure order with disconnection of electricity in November 2022 which was suspended in December 2022 based on corrective action taken by the unit. • Environment Compensation of ₹ 2.00 lakh was imposed for violation of environmental norms and also Bank Guarantee of ₹ 5.00 lakh was taken as an assurance for compliance with the Board's directions as well as environmental norms.	• Despite action taken by WBPCB, compliance with environmental norms was not done. • Coloured effluent was coming out from the discharge point of the ETP and falling in the low-lying land in front of the unit's main gate. (July 2023). • Water quality tests done (23 November 2023) by CPCB in the presence of officials of WBPCB and Audit also showed that the industry was non-compliant (BOD[99]-184, COD[100]- 321 and SAR -41.7).

[94] 25.04.2018 (BOD-665.70 mg/l, COD-1418.30 mg/l, O&G-12.20 mg/l, Sulphide-11.84 mg/l, TSS-370.00 mg/l), 28.08.2019 (SAR-103.84, TDS-610.00 mg/l, TSS-104.00 mg/l), 14.08.2020 (BOD-97.60 mg/l, COD-539.47 mg/l, pH-9.38, TDS-3482.00 mg/l), 27.10.2021 (BOD-213.55 mg/l, COD-674.97 mg/l, TDS-2388.00 mg/l, SAR-43.16), 26.04.2023 (COD-183.46 mg/l, TDS- 1234.00 mg/l, TSS- 166.00 mg/l, SAR- 5.04).

[95] Total Suspended Solids (Permissible limit-100 mg/l).

[96] Sodium Adsorption Ratio (Permissible limit-26 mili mol/l).

[97] 16.01.2019 (pH 9.55, TDS 2859.00) and on 27.01.2020 (SAR-165.94, pH-8.79 and TDS-2410.00 mg/l).

[98] 24.04.2019, 10.02.2020 and 22.06.2020.

[99] Biological Oxygen Demand (permissible limit-30 mg/l).

[100] Chemical Oxygen Demand (permissible limit-250 mg/l).

Sl No.	Industry	Inspection and Test Samples	Action taken by WBPCB	Audit observation (Joint physical verification)
3.	Sun Rise Industry (SPI)	• WBPCB inspected on three occasions against the required eight times (38 *per cent*). • Three samples tested from 2018-23. All found non-compliant[101].	• Three Show cause notices were issued in September 2018 & 2019, and July 2022.	• The industry continued to operate without compliance to the discharge standard. No further action on part of WBPCB was found on records.
4.	M/s Sreema Dyeing & Bleaching Works (SPI)	• WBPCB inspected on four occasions out of required eight times (50 *per cent*). • ETP was not operational during WBPCB's inspection.	• Issued a temporary closure order with disconnection of electricity in November 2019. • Directions issued for Non-compliance with environmental norms in December 2021 by WBPCB. • Show-cause notice was issued in December 2022 for not commissioning ETP and closure notice was suspended in December 2022 without ensuring compliance by the industry.	• Compliance to the discharge standards was yet to be ensured as no test report of effluent was made available, and the unit continued discharging untreated effluent directly into KMC drain.
5.	International Bleaching & Dyeing Works (SPI)	• WBPCB inspected on five out of required eight inspections. (63 *per cent*). • ETP was not operational during WBPCB's inspection.	• Show Cause Notices were issued by WBPCB in February 2019 and July 2021 followed by a hearing in May 2022. • WBPCB directed in August 2022, the concerned Regional Office to keep a vigil on the unit.	• The unit was operating without CTO during the period 2018-21 (upto 22 March 2021). • CTO was issued in March 2021 (valid up to October 2025) without ensuring operational status of the ETP. • Records regarding inspections were not available since August 2022 and during the joint site inspection, it was noticed that the ETP was non-operational and final discharge was made into KMC drain without any treatment.

[101] 02.08.2018-(TSS-104.00 mg/l, BOD-192.77 mg/l, COD-462.80 mg/l and pH>10), 18.06.2019-(TSS-3684.00 mg/l, BOD-50.87 mg/l) and 17.06.2022- SAR-175.92.

Sl No.	Industry	Inspection and Test Samples	Action taken by WBPCB	Audit observation (Joint physical verification)
6.	M/s Tirupati Udyog (SPI)	• WBPCB inspected on two occasions out of required eight inspections (25 *per cent*) • ETP was not in operation.	• Action taken by WBPCB was not found on record.	• No inspections were done during 2018-19 and 2021-23. • Show-Cause notice was not issued by WBPCB for non-operation of ETP, though CTO was renewed upto 30 November 2023.
CATEGORY: PULP AND PAPER				
7.	M/s Burdwan Kraft Board LLP (Formerly Bardhaman Dharmaraj Paper Mills Pvt. Ltd. (GPI)	• WBPCB inspected four out of required 20 inspections (20 *per cent*). • During 2018-23, WBPCB had taken three water samples for testing and found on two[102] occasions that the effluent was breaching permissible limits.	• Show cause notice was issued in January 2022, for non-compliance with environmental norms. Further action was not on records.	• No action had been taken after detecting non-compliance by the industries with the discharge norms in December 2022. • No test was done since December 2022.
8.	M/s Ballavpur Paper Mfg Ltd. (GPI).	• WBPCB inspected the unit 15 times out of required 20 inspections (75 *per cent*). • On nine[103] occasions the effluent did not meet the prescribed standards.	• Primary clarifier was found in a damaged condition even though the third-party inspection (CPCB) in March 2022 recommended its repair at the earliest. However, no action was taken.	• 540 KLD of ground water was being extracted against the permission of 120 KLD from SWID. • No permission for hazardous waste authorisation was taken. • There was no system for re-use of treated water. • Sludge was kept in open within the premises.
CATEGORY: MILK PROCESSING AND DAIRY PLANT				
9.	M/s Mother Dairy (GPI*)*	• The effluent of the unit was found non-compliant on four[104] occasions out of total 20 inspections (quarterly) done during the period. • The unit also failed to install Online Continuous Effluent Monitoring System (OCEMS) connecting with the CPCB server.	• It was seen that direction was issued only on one occasion *i.e.* 06.08.2021 for non-compliance with the Environment norms and an Environmental compensation of ₹ 4.25 lakh was imposed for non-compliance. However, the unit remained non-compliant on four occasions during the Audit period.	• The ETP was partially running. • The online effluent monitoring system (OCEMS) was not functioning

[102] 08.11.2021 (TSS-580.00 mg/l, COD-15727 mg/l, BOD-6218.75 mg/l), 14.12.2022 (COD-272.80 mg/l, BOD-94.17 mg/l).

[103] 12.04.2018 (BOD-59.83 mg/l, COD-400 mg/l), 18.07.2018 (BOD-127.61 mg/l, COD-519.77 mg/l), 10.09.2018 (BOD-76.91 mg/l, COD-459), 18.12.2018 (TSS-134.00 mg/l, BOD-1543.75 mg/l, COD-6775 mg/l), 21.05.2019 (BOD-93.75 mg/l, COD-455.40 mg/l), 19.08.2022 (BOD-35.44 mg/l), 04.12.20 (BOD-71.25 mg/l), 24.03.2021(BOD- 36.46 mg/l), 04.03.2022 (BOD-40.08 mg/l).

[104] 02.07.2020 (BOD-50.65 mg/l), 11.08.2021 (TSS-176.00 mg/l and BOD-46.13 mg/l), 29.04.2022 (TSS-208.00 mg/l) and on 06.04.2023 (BOD- 42.15 mg/l).

Sl No.	Industry	Inspection and Test Samples	Action taken by WBPCB	Audit observation (Joint physical verification)
10.	M/s Meghna Farm Products (SPI)	• WBPCB inspected on four out of required eight mandatory inspections (50 *per cent*)	• Four[105] Show-cause notices were issued for non-compliance. • No further action was taken by the WBPCB.	• There was no system for re-use of treated water. • Reserve tank for effluent stores the wastewater for treatment. However, several outlets were found in the reserve tank that did not lead to ETP which indicated that untreated effluent was being discharged into the water stream.
CATEGORY- METAL SURFACE TREATMENT				
11.	M/s DMP Projects Pvt. Ltd. (SPI)	• WBPCB inspected the unit on three out of required mandatory eight inspections (38 *per cent*) • Effluent was found to be non-compliant[106] with discharge standards on all the three occasions.	• Nothing was found on record regarding WBPCB's follow up action.	• Hazardous Waste Authorization expired on 31 January 2023 and has not been renewed since. • During joint inspection (July 2023) the unit was found not functioning, however hazardous waste was stored in a tank at the premises.
12.	M/s Bhusan Power and Steel Ltd. (SPI)	• WBPCB was inspected on three out of required eight inspections (38 *per cent*) • The unit was non-compliant on one occasion. • Presence of multiple number of outlets all along the boundary wall beside the ETP was pointed out.	• Nothing was found on record regarding any follow up action by WBPCB.	• No follow-up/ show cause notice was found on record

5.2.4 Trade Effluents from the tanneries in Calcutta Leather Complex

Calcutta Leather Complex (CLC) was set up in 2005, for accommodating approximately 500 tanneries, to allow them to operate in a modern and environment-friendly manner. As of 2023, 517 tanneries had relocated to CLC and obtained NOC from WBPCB. The CLC was equipped with 40 MLD CETP, comprising eight modules of five MLD each, for treating trade effluents[107] of the tanneries. However, as of July 2023, only four modules[108] *i.e.* Module V-VIII were functioning, after modules I-IV went out of operation in August 2022.

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[105] 05.07.2018, 30.08.2018, 30.07.2021, 12.12.2022.

[106] 06.12.2018 (BOD-45.13 mg/l, Iron- 27.92 mg/l, pH- 4.98, TSS-638.00 mg/l, Zn-42.85 mg/l), 11.03.2019 (pH-4.98, TSS-638.00 mg/l, BOD-45.13 mg/l, Zinc-42.85 mg/l and Iron-27.92 mg/l) and 28.10.2021 (Zn-7.57 mg/l).

[107] Trade effluent is liquid waste that comes from industrial process.

[108] Total 20 MLD (Five MLD each).

The four modules in operation were receiving about 15-16 MLD of trade effluent. During the period 2018-19 to 2022-23, WBPCB inspected the Complex 49 times. Further, a joint inspection of CLC was also carried out by Audit with officials of KMDA (July 2023). Based on these inspections, the following was noticed:

- WBPCB carried out water quality analysis of CETP outlets 49 times during 2018-19 to 2022-23. During this analysis it was noticed that the discharge effluent standards for pollutants like Chloride and TDS regularly exceeded permissible limits, while other pollutants such as Ammonical Nitrogen, BOD, COD, TDS, TSS and Total Chromium exceeded the Design/ MoEF&CC discharge standard limits by 35, 34, 13, 41, 16 and 5 times, respectively. Details of this analysis are as shown in **Chart 5.6** below**.**

Chart 5.6: Treated Effluent exceeding the discharge norms

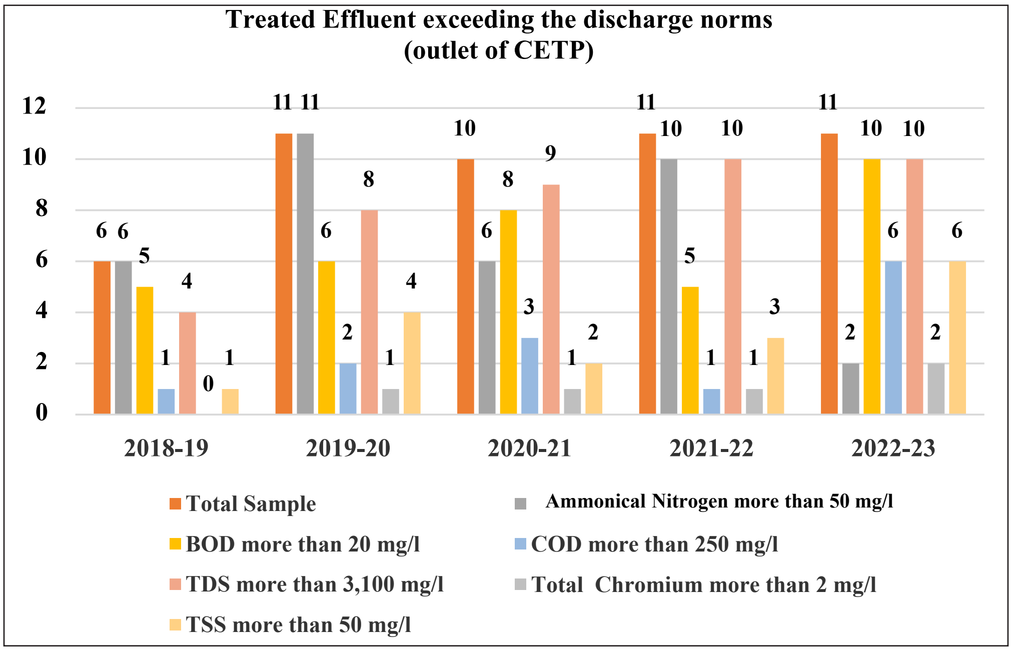

Figure 5.1: Storm water drain 3 carrying untreated effluent and falling into the drainage canal

All the three canals within the Complex were heavily contaminated due to unauthorised discharge of tannery effluent, bypassing the CETP. On perusal of WBPCB records it was seen that the Board had not monitored the water quality in the storm water canals regularly. Seven water quality test reports[109] of storm water canals for the period from May 2018 to July 2019 were found on record which showed that the levels for parameters like Sulphide, Total Chromium, TSS, COD exceeded the treated effluent

[109] 15 May 2018, 23 August 2018, 29 November 2018, 21 February 2019, 02 May 2019, 18 June 2019 and 31 July 2019.

discharge levels of the CETP outlet on all the seven counts[110]. This indicated that the effluents from the tanneries were being discharged directly into the canals, bypassing the CETP. Thus, CLC tanneries were discharging untreated effluents directly into canals, which were ultimately flowing into the *Vidyadhari* river causing environmental pollution.

The Joint Inspection of the CLC (July 2023) also revealed that tannery effluent was flooding the internal roads and abutting vacant plots due to leakage and overflow, and ultimately accumulating in vacant areas of the complex.

Figure 5.2: Flooding of tannery effluent due to leakage/overflow

Figure 5.3: Undisposed sludge of CETP

Water quality tests of the CLC's CETP Module (V-VIII), was also done by CPCB (in November 2023), in the presence of officials of WBPCB and Audit. These tests revealed that the CETP of the Complex was non-compliant with environmental norms as the effluent had a BOD load of 80 mg/l against an acceptable standard of 20 mg/l and COD was 276 mg/l against 250 mg/l.

From the above it is evident that the leather industry discharged effluents laced with chromium compounds and sulphides into water bodies. The International Agency for Research on Cancer under WHO had recognised chromium compounds as human carcinogens. Since the storm water canal opens into the *Vidyadhari* River, the effluents were getting widely dispersed, causing immense risk to human and aquatic health.

110

Parameter	CETP outlet range	Canal water range
Sulphide	0	38.84-151.04
Total Chromium	0.26-0.36	5.4-37.52
TSS	4-79	79-1,407
COD	66.03-237.83	391.32-11,924.17

In reply, WBPCB stated (March 2024) that no untreated sewage from the tanneries was being directly discharged. They also stated that untreated sewage mixed with the process effluent generated from tannery units were being sent to CETP for final treatment.

However, from the water quality tests done (November 2023) by CPCB and the joint inspection by Audit, it was seen that there was no proper treatment of the tannery effluents and the canals continued to be heavily contaminated.

Recommendation 10:
WBPCB needs to enforce, through consent management, treatment of all industrial effluents, with special emphasis on installation of CETPs in clusters for the unorganised small industries.

5.2.5 Implementation of Comprehensive Environmental Pollution Index Action Plan

In order to assess the impact of industrial clusters on the environment, CPCB uses a Comprehensive Environmental Pollution Index (CEPI) comprising parameters for Water Environment, Air Environment and Land Environment. Industrial clusters with aggregated CEPI score of 70 and above are generally considered by MoEF&CC as critically polluted Cluster.

MoEF&CC issued a Memorandum dated 13 January 2010 imposing a moratorium on setting up of new industries and expansion of existing industries, requiring Environmental Clearance, in Critically Polluted Areas (CPAs). In West Bengal three industrial towns *viz*. *Haldia*, *Howrah* and *Asansol* were identified as CPAs, and thus the moratorium extended to all the three places.

To improve the environment quality, WBPCB initiated a series of time bound action plans from 2010 onwards. The CPCB conducted monitoring in the CPAs during February-April 2013 and re-assessed the CEPI scores. In view of the reassessment, MoEF&CC lifted (September 2013) the moratorium subject to the conditions that.

(i) The concerned SPCB shall ensure compliance with approved action plans for the CPAs,

(ii) SPCB shall review quarterly, the implementation of the action plans and report to CPCB and,

(iii) SPCB, through third party, will undertake an annual monitoring of CPA for computing CEPI.

In this context, Audit observed that compliance reports related to the CEPI action plan for the above three CPAs were available only for the year 2014 and reports for subsequent years were not found.

Subsequently, CPCB, as per the order of the NGT[111], undertook a project for monitoring environmental qualities during 2017-18 of around 100 Polluted

[111] OA No. 1038/2018 dated 13.12.2018

Industrial Areas (PIAs) throughout the country, which includes all the above three CPAs, one Severely Polluting Area (SPA) - *Durgapur* and one additional site (*Bandel)* in the State. Accordingly, action plans were prepared (June 2019) for each of the five PIAs based on the WBPCB's monitoring of environmental qualities.

In context of the above action by WBPCB, Audit observed the following:

5.2.5.1 Implementation of Action Plans in Haldia CPA

According to the Action Plan for *Haldia* CPA, prepared by WBPCB, a total amount of ₹ 720.98 crore was estimated for execution of various environmental improvement activities to be carried out by large industries in Haldia by Haldia Development Authority (HDA) and *Haldia* Municipality by December 2023. The Action Plan *inter alia* included storm water management, which was to be undertaken by HDA, *Haldia* Municipality and the Irrigation and Waterways Department. Based on audit analysis (upto September 2023) of the implementation of the Action Plan, the following points, as shown in **Table 5.4** were observed.

Table 5.4: Present status of action plan of *Haldia* CPA

Action point	Responsible Agencies	Details of Action points	Audit observation
Storm Water Management	HDA, *Haldia* Municipality and Irrigation and Waterways Department	1. Construction of drains along with road from *Adani Wilmar Ltd.* to *Azad Hind Nagar* areas.	Constructed but yet to be linked with the main drain along with HPL link road to *Mansatala* Canal. As a result, untreated effluent, was getting discharged into low-lying open land.
		2. Construction of 4 km long drain along with HPL link road to *Mansatala* Canal.	The scheme could not be executed till date. Estimate amounting to ₹15.10 crore for the work[112] was prepared by the HDA and sent (December 2019) to the Member Secretary, WBPCB for approval of the project, but the same was not approved as of October 2023 by WBPCB.
		3. De-silting of *Mansatala* green belt, *Horekhali*, *Bhagyabantapur*, *Chunamara* and *Atafala* Canals and repairing of lock-gates and sluice gates of the respective canals.	Letters had been issued by WBPCB (2019 and 2020) to Irrigation and Waterways Department (I&WD) for de-silting of the Canals, but the same was not executed. I&WD carried out a preliminary survey in March 2022 for de-silting of the canals with a total approximate cost of ₹ 9.80 crore but work had not started as of March 2024.

During the joint field inspection of *Mansatala* Canal and HPL Link Road with the officials of the WBPCB in December 2023, Audit observed that the work related to the storm water management as envisaged in the Action Plan was yet to be implemented as shown in **Figure 5.4**. Further, untreated effluent, filled with white scum and foul odour, was getting discharged into a low-lying open land along the HPL road as shown in the **Figure 5.5**.

[112] 'Construction of RCC surface drain from Adani Wilmar Industrial Unit to Manasatala Canal along HPL Link Road'.

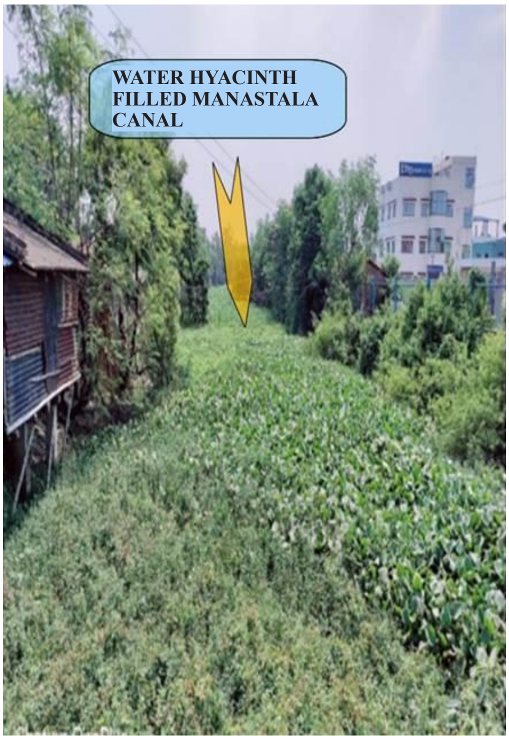

Figure 5.4: Mansatala green belt was found to be filled with aquatic weeds such as water hyacinth, hydrophytes

Figure 5.5: Effluent from the industries was discharging into a low lying open land along HPL Link Road

5.2.5.2 Implementation of Action Plans in Howrah CPA

CPCB considered two major industrial clusters of Howrah viz. *Jalan* Industrial Complex and *Bamungachi* Industrial Cluster as CPA. As per records, a total of 486 red category industries were operating from these two industrial clusters. *Barjora Khal*, a drainage channel of about 10.35 km maintained by Irrigation and Waterways Department (I&WD) of Government of West Bengal, drains industrial effluent from *Jalan* Industrial complex, *Sankrail* Industrial Complex, Food Park and Poly Park. Keeping in view the environmental load bearing capacity of the sensitive area, WBPCB had delineated (2015), *inter alia*, the following actionable measures in **Table 5.5**.

Table 5.5: Action points for *Howrah* CPA

Sl. No.	Action points	Responsible stake holders
1	Installation of Central Effluent Treatment Plant (CETP) at Jalan Industrial Complex.	Industry Association, Industry, WBPCB and MoEF on cost sharing basis.
2	Development of proper drainage facility in Jalan Industrial Complex.	Industry Association, Industry.
3	Embankment and desilting of effluent carrying canal at Jalan Industrial Complex.	Industry Association, Industry.
4	Development of proper drainage facility *Bamungachi* area.	*Howrah* Municipal Corporation and *Bally* Municipality.

Audit observed that the work of de-siltation of *Barjora Khal* was not taken up (as of March 2024) though a DPR for this work at an estimated cost of ₹ 7.07 crore was prepared by I&WD (September 2023).

Joint physical inspection of selected industries, in July 2023, revealed that CETP was not installed at the *Jalan* Industrial Complex, and the industrial effluent was drained through *Barjora Khal (Sarenga Khal)*. Regular water quality analysis for the *Barjora Khal* was not being done by WBPCB and thus, compliance with environmental standards could not be ensured as discussed in Paragraph no. 3.4.1.3(i).

In reply, the Department stated (March 2024) that majority of the action points involving various stakeholders, had been successfully implemented by WBPCB and overall environmental quality of these areas has improved.

However, the Department did not provide any supportive documents regarding improvement of environmental quality and implementation of the Action Plan.

5.2.6 Water Pollution of Kana Damodar River

The NGT's Principal Bench, *New Delhi*, in OA 735/2022, while hearing a petition over pollution of water in *Rajapur* Canal, *Janai* basin canal which ultimately pollutes ***Kana Damodar* River** (a tributary of River *Hooghly*), ordered (January 2023) the constitution of a Joint Committee comprising State PCB, District Magistrate, *Howrah* and CPCB who shall inspect the site and submit its report along with observation and recommendations for remedial action, within two months. The committee submitted its report to NGT in August 2023. The observations of the Committee *inter-alia* included the following:

- The water samples collected from different places during the inspection did not comply with the bathing standards prescribed by the CPCB.
- At the point of collection of water samples from *Janai* basin canal, the water quality was observed to be exceptionally poor with no DO, a high BOD (92.5 mg/l) and very high level of TC (2.3 lakh MPN/100 ml) level.

Consequently, four dyeing/colouring units[113] were identified by WBPCB in the *Kalachara* area of *Hooghly* districts as being responsible for polluting the canals. Three out of four industries were inspected (November 2023) jointly by Audit with officials of WBPCB and it was observed that these industries were not complying with environmental norms. **Despite these violations, WBPCB did not take adequate steps to control untreated discharge into water bodies even though the industries were continuously violating environment norms during 2018-23. Joint site inspection of the canal showed coloured discharge from the industries into *Janai* Canal (Figure 5.6).**

[113] (i) M/s Paul fabrics, (ii) M/s Kohinoor Sarees Pvt Ltd., (iii) M/s Uday Industries Ltd., (iv) M/s Sarat Industries.

Figure 5.6:Janai canal in front of the above industries

Table 5.6: The lapses of the units and action taken by WBPCB during 2018-23 and post NGT order in May 2023

Sl No.	Industry	Inspection and Test samples	Action taken by WBPCB	Audit observation (Joint Physical verifications)
1	**M/s Paul fabrics**	WBPCB inspected the unit six[114] times during 2018-23 against the stipulated **eight** times. Four water quality test reports were made available, and it was observed that on all the four occasions[115] the effluent was non-compliant with the discharge standards.	Show Cause Notice was issued in November 2018. A Closure order was issued (May 2023) in consequence to the NGT case for non-compliance.	• ETP was not working properly and was in poor condition. • Stagnant effluent was found outside the boundary. • Effluent was being discharged into drains bypassing the sand filter. • The suspension of closure order was affected (August 2023) without ensuring compliance status of the unit.

[114] 07.03.2019, 03.06.2019, 14.06.2022, 28.07.2022, 13.04.2023 and 23.06.2023.

[115] 28.9.2018 (TSS-3040.00 mg/l, COD-1619.00 mg/l, BOD-300.00 mg/l), 03.06.2019 (BOD-214.83 mg/l, COD-635.67 mg/l, O&G-1.90 mg/l, Phenols-1.16 mg/l, TSS-112.00 mg/l), 14.07.2022 (BOD-106.90 mg/l, SAR-334.68, TDS-9,706.00 mg/l &TSS-472.00 mg/l) and 28.07.2022 (BOD-66.70 mg/l, SAR-491.71, TDS-9,816.00 mg/l).

Sl No.	Industry	Inspection and Test samples	Action taken by WBPCB	Audit observation (Joint Physical verifications)
2	**M/s Kohinoor Sarees**	WBPCB inspected the unit six[116] times during 2018-23, against the stipulated **eight** times. Three[117] test results of the effluent were made available, all of which were non-compliant.	Show cause notice was issued on 24 May 2022 by WBPCB. A Closure order was issued on 18 May 2023 to the unit which was suspended (04 August 2023) after levying a penalty of ₹ 50,000 and enforcing a bank guarantee of ₹ 2.00 lakh.	• The ETP was not running at the time of inspection. • The drain in front of the main gate of the unit was found to contain coloured liquid waste. • The suspension of closure order was done without ensuring compliance with discharge norms.
3	**M/s Sarat Industries**	WBPCB conducted four inspections[118] during 2018-23 against the stipulated **eight** times. The unit was non-compliant in three[119] test cases.	Closure order for Sarat industries was issued on 07 February 2020 by WBPCB due to non-compliance which was suspended in March 2020 by WBPCB.	• It was observed that no inspections were done during 2020-22 till January 2023. • A show-cause notice was issued on 31 March 2023, for non-compliance to environmental norms and unit was asked to upgrade the ETP.