Status Report

of
Common Effluent Treatment Plants

at

Pali, Rajasthan

Submitted in Reference to

Hon'ble National Green Tribunal (NGT), New Delhi order dated October 18, 2019

In the Matter of

Original Application No. 32/2014 (THC) (CWP No. 9503/2012) (M.A. No. 921/2018)

Kisan Paryavaran Sangaharsh Samiti, Jaipur
Vs
State of Rajasthan & Ors.

Submitted by
Dr. Ajit Pratap Singh,
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BITS Pilani-333031

27 November 2019

Contents of Main Report

1. Order of Hon'ble NGT dated 18.10.2019:

Hon'ble National Green Tribunal (NGT) in O.A No. 32 (THC) of 2014/ (CWP No. 9503/2012)/(M.A. No. 921/2018)) in the matter of Kisan Paryavaran Sangharsh Samiti Vs. State of Rajasthan & Ors, ordered on 18.10.2019 that Dr. Ajit Pratap Singh, Professor and Dean, Birla Institute of Technology and Science, Pilani, to visit Pali as Court Commissioner and was directed to report the present status of CETP at the ground level in comparison to the one on the earlier visit. The copy of the order is attached in **Annexure S-1**.

2. Issues of concern:

i. River Bandi is polluted due to discharge of industrial effluents and sewage disposal of Pali town.

ii. Polluted water flowing in River Bandi is a constant threat for health of villagers and to the agriculture.

iii. Installed CETPs not achieving zero liquid discharge (ZLD) and effluents still being discharged into River Bandi. However, the Learned Counsel for respondent no. 5 submits that CETP is functioning and all discharges are within the prescribed parameters.

3. Findings (Background) of earlier visit reports:

Hon'ble National Green Tribunal (NGT) in O.A No. 32 (THC) of 2014/ (CWP No. 9503/2012)/(M.A. No. 921/2018)) in the matter of Kisan Paryavaran Sangharsh Samiti Vs. State of Rajasthan & Ors, ordered on 21.12.2018 that team of Scientists to visit Pali, its industrial areas and river Bandi as well as Nehda Dam and Common Effluent Treatment Plants (CETPs). A report was

submitted by the team of Scientists/ Commissioners in compliance of order dated 21.12.2018 issued by Hon'ble NGT new Delhi relating to; River Bandi and Common Effluent Treatment Plants (CETPs) at Pali, Rajasthan on 16th January 2019.

The Hon'ble National Green Tribunal appointed Prof. Ajit Pratap Singh Professor and Dean, Birla Institute of Technology and Science, Pilani, Rajasthan as Court Commissioner and directed to visit and report the present status of CETP at the ground level in comparison to the one on the earlier visit.

The Commissioner first had initial meeting with Mr. Amit Sharma, R.O., Pali to review present status of industries and different treatment facilities (including operational status of CETPs, ETPs, etc.) located in the area and status of river Bandi. A Report submitted by the Committee on 16.01.2019 to the Hon'ble Tribunal has been considered as a base reference document in compliance with the order dated 21.12.2018 [1].

Prof. Ajit Pratap Singh inspected various sites in Pali along Bandi river during 10-11 November 2019. Apart from the common treatment facilities of industrial and municipal wastewater, different sites of Bandi river have also been inspected randomly as a sample and observations made at these sites have been provided in the present report. Prof. Singh also made surprise visit of the site on 21.11.2019 to understand the correct status/functioning of CETP-6 at Pali.

The main observations of earlier visits of commissioners/Committee are summarized as follows:

a. CETP:
    i. None of the CETPs is meeting the standards.
    ii. No standards are given for CETP-2 and sending its

effluent to CETP-6.

iii. CETP-2 has poor maintenance.

iv. No standards prescribed to CETP-3 and sending effluent to CETP-6.

v. CETP-4 has also not been given standards for disposal to CETP-6. But, as per consent, effluent is consented for disposal into river.

vi. CETP-6 is disposing non-compliant quality of treated effluent into river. Facilities to recover water and supplying to the industries, is not complied.

b. The River Bandi and its Rejuvenation:

i. The River Bandi is not having its natural flow but, it is only carrying industrial wastewater as well as domestic sewage.

ii. Water quality is "not-fit" for any use.

iii. The River water has been deteriorated to the worst quality. It has been reported that upstream location of river at Hemawas reservoir indicate pH 8.22, BOD 1.13 mg/l, COD 28 mg/l and TDS 470 mg/l against the downstream location of river at Nehda Dam with pH 7.9 to 8.61, BOD 9.9 to 44 mg/l, COD 94 to 313 mg/l and dissolved solids 4008 to 6624 mg/l.

c. The Ground Water:

i. Industries are using ground water supplied by tankers through private parties.

ii. There is no regulation on supply of such ground water by private parties to the industries.

iii. Granting permission by CGWB to industries and those being done by private parties through tankers is not clear on permissions and many applications are pending with

CGWB.

d. Sewage Treatment and its utilisation:
   i. The treated sewage (at secondary level) of 7.5 MLD plant is presently disposed into River Bandi.
   ii. M/S Pali Zila Dugdh Utpadak Sahakari Sangh Ltd. is sending its effluent to this STP for treatment.
   iii. The STP of 15 MLD located in the same premises is under construction and targeted for completion before March, 2019.
   iv. The 7.5 MLD plant is not receiving full sewage due to incomplete sewer line works and connections.

e. Environmental Compensation:
   i. Team could not get authentic official records on damages to agriculture, loss of ground water quality and health. Committee suggested that State Department of Agriculture and Health should provide information on status of agricultural loss, ground water conditions and health due to pollution by textile units.

4. Task performed by the Commissioner:

Based on earlier evidences and past reporting and orders of Hon'ble Tribunal, the Commissioner performed following tasks:

i. Inspection of CETP units 1, 2, 3, 4, 5 and 6 and STP at Pali
ii. Field visit at some sites along River Bandi and Nehda Dam
iii. Interaction with villagers and farmers.

5. Visit Schedule and coverage:

i. The Commissioner met R.O., Pali and had initial meeting to review present status of industries and different treatment

facilities (including operational status of CETPs, ETPs etc.) located in Pali and carried out inspections on 10th and 11th November, 2019.

ii. RSPCB has been asked to take samples from CETPs, and few sites at the River during the time of inspection. pH of samples of water were also checked using pH strips.

iii. Collected samples have been analyzed by RSPCB.

iv. A surprise inspection of CEPT-6 was also done on 21.11.2019 by the Commissioner.

6. Observations:

Observations made by Court Commissioner during a visit on 10-11th November 2019 are given below:

6.1 Common Effluent Treatment Plants (CETPs) at Pali, Rajasthan:

6.1.1 CETP-1:

Abandoned and not in use. Now, the effluent is being treated in CETP-2 which exists in the same premise. In fact, collection tank of CETP-1 is presently being utilized for holding of effluent only, which is gradually transferred to CETP-2. **There is no change in the status of CETP-1 i.e. it is still non-operative**.

6.1.2 CETP-2:

i. This CETP is meant for receiving effluent from 282 textile units of Mandia road industrial area, Pali.

ii. Consent to operate under Water Act, 1974 was issued vide letter dated 19.06.2017 and is valid up to 31.03.2022 with the condition to send effluent to CETP-6 for further treatment (Attached in earlier report as Annexure R-4, page 2950-2953 submitted on 16th January 2019). However, Authorization under H.W. (M, H &TBM) Rules, 2016, for Collection, Generation, Reception, Storage of Chemical Sludge (Cat-34.3) @ 10 TPD, issued vide letter dated 07/07/2015 and was valid up to 31/07/2019.

iii. Installed capacity of CETP is 8.40 million litres per day (MLD).

iv. The CETP-2 is based upon primary (Physico-chemical) and secondary (biological) treatment technology. It consists of Conduit Termination Pit (Outside Premises of CETP-2) → Mechanical Screen → Intake sump → Raw Water Transfer Pumps → Tilted Plate Separator (Out of Circuit) → Equalization Tank (equipped with Acid Addition facility) → Chemical Dosing and Flash Mixer → Primary Clari-Flocculator → Aeration Tank → Secondary Clarifier → Treated Waste Water Collection Tank. For handling of Sludge, Sludge Holding Tank, Sludge Thickener and 03 no. of Centrifuge Machines (02 Working+01 stand by) have also been provided.

v. The technical data of CETP was already provided in Annexure R-3, page 2946-2949 of earlier report submitted on 16th January 2019. However, some changes have been observed during the present inspection held on 10-11th November 2019 as compared to previous visit on 12-13th January 2019, which are described below:

The management has changed the treatment lineup of CETP and has now

- removed oxy-boosters installed in equalization tanks & aeration Tanks.
- removed 10 no. of Chemical Dosing and Flash Mixing tanks from site and using old flash mixture.
- removed Pressure Sand Filters (06 No.) → Activated Carbon Filters (06 No.) from site.
- additional oil & Grease removal system and 12 no. of tube settlers (capacity 25 KL each) which were being installed earlier, now have been dismantled.

It was intimated by the representative of CETP that all these non-operating/removed equipments were belonging to the firm engaged for O & M of this CETP. As the contract of that firm has now been discontinued therefore they have removed their equipments from the site. Further, non-operational Oxy-boosters installed with equalization tank & aeration tank shall also be removed. The plant is now being operated with the components & utilities originally supplied by the erector of plant.

vi. The treated effluent from this CETP is fed to CETP 6.

vii. Upkeep of this plant is not satisfactory with respect to maintenance of machinery and spillages as shown in **Fig.1**.

viii. Samples from inlet and outlet of CETP-2 have been collected for analysis. At the time of inspection, following observations were made:

- The pH of influent at CETP-2 was found as 8.5. as shown in **Fig. 2(a).**
- Measured Inlet flow = 162.5518 m^3/hour or about 3.90

MLD as shown in **(Fig. 2(b)).** (Note: the permitted operated capacity of CETP-2 has been prescribed as maximum up to 5.4 MLD by the state pollution control board against its designed capacity of 8.4 MLD). It is surprising how the plant is running underflow at the time of inspection, especially when 282 textile units are to be served from Mandia road industrial area, Pali.

- Though the provision of an electromagnetic meter has been provided after the equalization tank (in transfer line to flash mixer section), it was initially non-functional and was installed recently just few days before the inspection visit of Commissioner. It is to be noted that the flowmeter is required to be installed at the inlet point of conveyance influent system (before Conduit Termination Pit) rather than providing it after the equalization tank (in transfer line to flash mixer section). Also, flow and effluent quality data are not being monitored through SCADA system at CETP-2 which is the violation of condition no. 16 stipulated in CTO order no. 2017-2018/PLG/1025 dated 19/06/2017.
- In the absence of metering arrangements at inlet of Conduit Termination Pit of CETP-2, actual quantum of influent cannot be assessed /recorded accurately. Thus, it is difficult to ensure whether plant is running within the prescribed flow capacity as given in the CTO or not.
- There is no recording of effluent flow at the outlet of CETP-2. No flow meter exists at the outlet which is violation of condition no. 7 stipulated in CTO order no. 2017-2018/PLG/1025 dated 19/06/2017. It is very essential that the flow at the outlet of CETP-2 be measured

accurately with proper flowmeter to ensure that the same flow is being discharged into the inlet of CETP-6 especially when both CETPs are located far away and not in the same premise.

- Scrapper of oil & grease trap was non-functional.
- CETP-2 is non-complying with respect to input parameter quality parameters such as pH (=11.1), total suspended solids (848 mg/L). Similarly, as per RSPCB test results of samples, lead concentration was found 1.08 mg/L at the outlet of CETP-2 which is also non-complying. The pH of effluent (treated) from CETP was found as 8.5 using pH strip. The samples taken from inlet and outlet of CETP-2 were tested by Rajasthan State Pollution Control Board, Head Office, Central laboratory, Jaipur which is given in **Annexure S3**.
- Log book of operation, electric meter/water meters'/chemicals consumption etc. are not maintained properly. From the examinations of the produced log book, it has been inferred that artificial data have been created with instant entry in the log book. Consumptions of chemicals and utilities are not recorded. Observations made at the plant is clear indicator of poor O & M of CETP-2.
- CETP-2 is non-compliance with respect to conditions numbers 16, 17, and 18 stipulated in the CTO order no. 2017-2018/PLG/1025 dated 19/06/2017 (Attached as Annexure R-4, page 2950-2953 of earlier report submitted on 16th January 2019).
- Records of generation and disposed sludge are not being maintained in the prescribed format for the last six

months. Even similar observation was made recently by R.O., Pali in his submission to the Member Secretary, RSPCB through his letter RPCB/RO/Pali/CETP-2 (Vol-II)/2069 dated 31/10/2019.

- Filter Press has not been provided for dewatering of sludge.
- The Programmable Logic Controller (PLC) based chemical dosing facilities have not been provided. During inspection related operations are being performed manually by unskilled labor in an un- scientific manner. In the absence of any surveillance and automated system, usage of appropriate chemicals with optimum dose for treatment cannot be ascertained.
- Condition of secondary treatment units was clearly revealing that biological treatment is very poor and failed.
- Neither run hour meters are provided nor any log book is maintained for operation of influent/effluent handling pumps installed with different units of CETP. In absence of same, regulated operation of CETP may not be ascertained.
- Records related with routine engineering maintenance are not being maintained.
- Besides the request, CETP operators have failed to submit records related with purchase of water treatment chemicals, source of procurement, quality of chemicals etc. used in the process on regular basis.
- Though CETP-2 is physically present, it is essentially being used as a pumping station to receive the wastewater from industries and pump the same to CETP-6 without any effective treatment.

- It is essential that quantity and quality of wastewater (both untreated influent and treated effluent) at CETP-2 should be monitored with an effective surveillance fully automated system round the clock as well as through random checks rather than having a few observations under controlled & known conditions. Also, it would be better if the report of test samples given by the RSPCB laboratory be audited randomly by any authentic and reliable third party research laboratory.

ix. The present status of CETP-2 does not comply the stipulated conditions of treatment in general and with respect to condition no. 2, 4, 7, 10, 11, 13, 15, 17, 18, 19 & 20 of CTO order no. 2017-2018/PLG/1025 dated 19/06/2017 specifically.

x. Due to above deficiencies and observations made, it is inferred that CETP-2 is non-complying with respect to various conditions stipulated in the CTO.

6.1.3 CETP-3:

i. The consent granted to this plant is valid till 31.03.2022 for installed capacity is 9.080 million litres per day (MLD). (Attached in earlier report as Annexure R-6, page 2959-2960 submitted on 16th January 2019).

ii. Though the plant has been planned to cater the need of 62 units located in RIICO industrial area and Mahavir Udyog Nagar, **it is not in the operation for the last six months or so**.

iii. As per the order dated 26.5.2017 of Hon`ble NGT in the matter of MA No.1117/2016 in Original Application No.32/2014, CETP-3 must be operated effectively and after

primary treatment, the effluent from CETP-3 to be fed into CETP-6 for final treatment. As CETP-3 is nonfunctional, it is the violation of order of Hon`ble NGT. It raises a big question about the effective functioning of CETP-6 in transparent and fair manner as loading conditions of CETP-6 is bound to get overloaded in the absence of non-working of CETP-3 as one of the primary treatment units.

iv. The present status of CETP-3 is **non-operative**.

6.1.4 CETP-4:

i. This plant is presently operational without any formal CTO letter because consent to operate under Water Act, 1974 was issued vide letter dated 26.11.2015 and the same was valid **up to 30.09.2018.** Agency has applied for renewal of consent to operate vide online application dated 30.06.2018. This application is under consideration with Head office, RSPCB. Similarly, consent to operate issued under Air Act, 1981 vide letter dated 26.11.2015 is also expired on 31.08.2018. A copy of expired CTO was submitted in the earlier report dated 16.01.2019 by the team of Scientists (as Annexure R-8, page 2966-2971. **CETP-4 still needs to get consent to operate**.

ii. This CETP has an installed capacity of 12.0 MLD to cater need of 215 industries located in Punayata industrial area. There is no change in Technical Data and Design of plant and is same as submitted in earlier report as Annexure R-7, page 2961-2965 on 16th January 2019.

iii. This CETP is based upon physico-chemical, secondary biological treatment technology.

iv. The treated effluent from this plant also goes to CETP-6 for further treatment.

v. Following measurements have been made at site of CETP-4:

- The pH of influent at CETP-4 was found as 9.0 as shown in **Fig. 3(a).**
- Measured Inlet flow = 156.682 m^3/hour or 3.76 MLD as shown in **Fig. 3(b)**. (Note: the permitted operated capacity of CETP-4 has been prescribed as maximum up to 3.89 MLD by the state pollution control board against its designed capacity of 12.0 MLD).
- Though the provision of an electromagnetic meter has been provided after the equalization tank (in transfer line to flash mixer section), it was initially non-functional and was installed recently just few days before the inspection visit of Commissioner. It is to be noted that the flowmeter is required to be installed at the inlet point of conveyance influent system (before Conduit Termination Pit) rather than providing it after the equalization tank (in transfer line to flash mixer section). Also, flow and effluent quality data are not being monitored through SCADA system at CETP-4.
- The pH of effluent of CETP-4 was found as about 9.0, as shown in **Fig. 3(c)**.
- No correlation could be established between effluent discharged from CETP-4 into CETP-6 and influent received at CETP-6 from CETP-4 due to lack of appropriate flowmeters at proper location though there exists a flowmeter at the outlet of CETP-4. It is very essential that the flow coming from the outlet of CETP-4 be measured accurately at the inlet of CETP-6 with proper flowmeter to

ensure that the same flow is being discharged into the inlet of CETP-6 especially when flexible pipes are being used and both CETPs are located far away and not in the same premise. There is no proper layout of piping systems/signage at the plant which ascertain whether these pipes are coming from a particular treatment unit (e.g. CETP-2, CETP-4 etc.) or coming directly from industrial units.

- Aeration system in equalization tanks has not been found effective at the time of inspection as shown in **Fig. 4**.
- Sludge drain facility has not been provided in equalization tanks.
- In the absence of metering arrangements at appropriate location in inlet of Conduit Termination Pit of CETP-4, actual quantum of influent could not be assessed /recorded accurately. Thus, it is difficult to ensure whether plant is running within the prescribed flow capacity as given in the CTO or not.
- Log book of operation, electric meter/ water meters'/chemicals consumption etc. are not maintained properly. From the examinations of the produced log book, it has been inferred that artificial data have been created with instant entry in the log book. Analysis of treated water quality is clear indicator of poor O & M of CETP.
- Records of generation and disposed sludge are not being maintained in the prescribed format for the last six months. Even R.O., Pali has also submitted recently similar findings to the Member Secretary, RSPCB through his letter RPCB/RO/Pali/CETP-4 (Vol-II)/2066 recently on 31/10/2019.

- Filter Press has not been provided for dewatering of sludge.
- The Programmable Logic Controller (PLC) based chemical dosing facilities have not been provided. During inspection related operations are being performed manually by unskilled labor in an un- scientific manner. In the absence of any surveillance and automated system, usage of appropriate chemicals with optimum dose for treatment cannot be ascertained.
- Condition of secondary treatment units was clearly revealing that biological treatment is very poor and failed.
- Record of Total Suspended Solids (inlet and outlet) and sludge drains etc. are not being maintained for primary clari-flocculator. It is essential that agency maintain and monitor such data to improve efficiency of treatment process.
- Controlling parameters like dissolved Oxygen (D.O.) & Mixed Liquor Suspended Solids etc. are not monitored in the aeration tank. It is essential that these parameters be monitored continuously to ascertain effectiveness of biological treatment process.
- Record of sludge drains was not being maintained for secondary clarifier. In the absence of such monitoring efficiency of clarification at secondary (biological sludge) treatment could not be established.
- Performance of centrifuge was poor. Sludge (in Slurry form) was being filled in tractor trolley.
- Neither run hour meters are provided nor any log book is maintained for operation of influent/effluent handling pumps installed with different units of CETP.

- Bulk quantity of sludge was stored in shaded storage area. Sludge is also stored in open space as shades provided for storage of sludge are not of sufficient capacity. Also, sludge was stored for long time (over the years) in open lagoons (180 ft × 120 ft × 4.5 ft & 190 ft × 120 ft × 4.5 ft) in the premises of CETP-4 in an objectionable manner. This may be potential hazards for groundwater contamination due to leachate especially in the rainy seasons as shown in **Fig. 5**.
- General house keeping all around sludge storage area was very poor. Even the yard site and other area were becoming greenish due to spillage of sludge. The dried sludge was becoming air born with movement of vehicles.
- Records of sludge generation and disposal are not being maintained in prescribed FORM-3 in HWMR-2016.
- Examination of past data revealed that disposal of sludge is almost equal to daily generation and, if a large quantity of hazardous sludge is stored in yard and lying in open lagoon over the years, it clearly indicates that sludge is not being disposed at same rate as it is being generated. It is clear indication of violation of Rule 8 of the HWMR 2016, if large quantity of sludge is continuously being stored in the yard since long.
- Referring to quantity of sludge stored in yard and on basis of details of sludge disposal it was concluded that final disposal of sludge, to SLF or for Co-processing, is not being done as per provisions of Rule 8 of the Hazardous and Other Waste (Management and Transboundary Movement) Rules 2016.
- Accumulated (Stored) sludge in the yard may become a

cause of severe environmental degradation & water pollution in that vicinity.

- Online treated effluent quality monitoring analyzers were not in operation as shown in **Fig. 6.**
- During the inspection, RSPCB officials also told that they do not find chemical dosing at the CETP for treatment at the time of their inspection.
- Routine maintenance of the plant is very poor **(Fig. 7 and Fig. 8)**. Records related with routine engineering maintenance are not being maintained.
- CETP operators have failed to submit records related with purchase of water treatment chemicals, source of procurement, quality of chemicals etc. used in the process on regular basis.
- Though CETP-4 is physically present, it is essentially being used as a pumping station to receive the wastewater from industries and pump the same to CETP-6 without any effective treatment.
- CETP should be operated and maintained by a professional agency, the selection of which should be done as per the guidelines mentioned under point no 1, 4 & 7 of Part A and point no 4, 6, 9, 10, 12, 14, 15, 16, 18, 19 & 20 of Part B of the "Guidelines for O & M Agency for Operation and Maintenance of the CETPs, for SPV and for the Member Units connected with the CETPs".
- CETP-4 is non-complying with respect to water quality parameters. The samples taken from inlet and outlet of CETP-4 were tested by Rajasthan State Pollution Control Board, Head Office, Central laboratory, Jaipur which is given in **Annexure S4**.

- It is essential that quantity and quality of wastewater (both untreated influent and treated effluent) at CETP-4 should be monitored with an effective surveillance fully automated system round the clock as well as through random checks in composite manner rather than having a few observations under controlled & known conditions.

vi. This plant is 'non-complying' with respect to;

- Not meeting the standards (condition given in the consent attached as Annexure R-8, page 2966-2971 of earlier report submitted on 16th January 2019). In fact, at present this CETP is operating without valid consent of State Board as the consent granted was expired on 30.09.2018.
- Not utilizing effluent with high rate transpiration system (HRTS) as specified under condition 8 of the consent.
- Upgradation of CETP for ZLD and tertiary system (condition 20 and 21 of the consent).
- In addition, CETP-4 is not complying with the condition no. 9, 10, 11, 16, 22, 24 & 25 of the consent.

6.1.5 CETP-5: Not completed and works halted.

6.1.6 CETP-6:

i. Consent to operate under section 25/26 of Water Act, 1974 and under section 21 of Air Act, 1981 was re-issued vide letter dated 27.02.2019 and is valid up to 31.01.2023 with the condition of zero liquid discharge with scientific arrangement for disposal of RO rejects to achieve the status of ZLD **(Annexure S-2)**. Work for installation of Zero Liquid Discharge (ZLD) facility has not been started yet. As per the

revised CTO dated 27.02.2019, CETP trust has been asked to achieve the status of ZLD within 18 months (upto the extended deadline of 31.08.2020). It may be noted that as per the earlier CTO issued dated 23.03.2015, CETP trust, Pali was asked to install Reverse Osmosis (R.O.) Plant of adequate capacity supported with scientific arrangement for disposal of RO rejects to achieve the status of ZLD within 10 months to ensure compliance of E.C. conditions and consent conditions, which was not fulfilled till date and the earlier time frame given for installing ZLD system was expired in January 2016 (Annexure R-11, page 2978-2983 of earlier report submitted to Hon. NGT on 16.01.2019) [1].

ii. This CETP is meant to treat the waste water being received from CETP 2, 3 (non-functional at the time of inspection on 10.11.2019) and 4 with a total installed capacity of 12.0 MLD **(Fig. 9)**. (Details of Textiles and their connection to CETP are given in Annexure R-9 (page 2972) and Technical data of CETP-6 is given in Annexure R-10 (page 2973-2977) of earlier report submitted to Hon. NGT on 16.01.2019).

iii. The CETP-6 is based upon physico-chemical, secondary biological treatment technology followed by Tertiary treatment facility. Tertiary treatment facility is comprised of Pressure Sand Filters and Activated carbon columns only. **(At the time of surprise inspection on 21.11.2019, Pressure Sand Filters and Activated carbon columns were non-operational)**.

iv. As per consent granted to CETP-6; no waste water is to be disposed and it should be based on ZLD **(Annexure S-2)**. However, it has been found that effluent wastewater from CETP-6 is being discharged and getting stored in a pool of

temporary arrangement of earthen walls constructed on the bed of river Bandi itself as shown in **Fig. 10**. As this storage facility is temporary and non-engineered construction in the form of cess pool (Dhora), the possibilities of seepage of stored effluent from earthen pool into the river cannot be denied, in addition to its seepage into the groundwater. This is vulnerable to contaminate other fresh water resources including Bandi river especially when it has been accumulating highly contaminated treated effluent as can be observed in sampling test results conducted by RSPCB on 11.11.2019 given in **Annexure in S-9**.

An image accessed on 20.11.2019 through USGS Earth Explorer portal provided by NASA and data received from LandSat-8 for aerial images of the Bandi River indicates that about 107650 m^2 area is submerged due to such storage of industrial effluents as shown in **Fig. 11**.

vii. Following observations were made at site of CETP-6:

- The pH of influent at CETP-6 was found as 9, shown in **Fig. 12(a)**.
- Neither run hour meters are provided nor any log book is maintained for operation of influent/effluent handling pumps installed with different units of CETP.
- The electromagnetic meter provision has been made after the equalization tank (in transfer line to flash mixer section), which is not appropriate location for capturing inflow of the plant. It should be installed at the inlet point of conveyance influent system (before Conduit Termination Pit or receiving inlet sump). Also, it is not being monitored through SCADA system at CETP-6. At the

time of inspection on 10.11.2019, initially flow meter was not working efficiently and therefore the actual flow could not be measured. (After some efforts, flow meter was corrected and measured Inlet flow = 427 m^3/hour or 10.25 MLD **(Fig. 12(b))**. Similar order of magnitude of flow is being recorded by the flowmeter at all the time irrespective of quantity of inflow into the inlet sump, even at the time of surprise visit as discussed in section 6.1.6.1 !. (Note: the permitted operated capacity of CETP-6 has been prescribed as maximum up to 7.5 MLD from all the units as directed by the state pollution control board against its designed capacity of 12.0 MLD in condition no. 15 of revised CTO **(Annexure S-2).**

- No correlation could be established between effluent coming from CETP-2, CETP-3 & CETP-4 into CETP-6 due to lack of appropriate flowmeters at proper location. It is very essential that the flow coming from the outlets of CETP-2, CETP-3 & CETP-4 be measured accurately at the inlet of CETP-6 with proper flowmeter to ensure that the same flow is being discharged into the inlet of CETP-6 especially when flexible pipes are being used and both CETPs are located far away and not in the same premise. There is no proper layout of piping systems/signage at the plant, which can ascertain whether these pipes are coming from a particular treatment unit (e.g. CETP-2, CETP-4 etc.) or coming directly from the industrial units.
- Online effluent quality monitoring system is not being operated and maintained. Also, for exact metering of discharge water, outlet meter is to be installed into the discharge line of ACF & PSF section.

- The pH of effluent of CETP-6 was found as 7.5 during inspection on 10.11.2019.
- Log book of operation, electric meter/ water meters'/chemicals consumption etc. are not maintained properly. Log book was found with incomplete entries.
- The Programmable Logic Controller (PLC) based chemical dosing facilities have not been provided. During inspection, related operations are being performed manually by unskilled labor in an un- scientific manner as shown in **Fig. 13**.
- Record of Total Suspended Solids (inlet and outlet) and sludge drains etc. are not being maintained for primary clari-flocculator. In the absence of such monitoring efficiency of clarification of primary (chemical sludge) effective treatment could not be ascertained.
- As per technical design of this CETP, clarified water tank has not been provided before SBR.
- Two SBR were in line and aeration was done. However, controlling parameters like dissolved Oxygen (D.O.) & Suspended Solids etc. are not monitored. In absence of such monitoring efficiency of biological treatment could not be established.
- Designed/Original PLC based operation of SBR is not in use. Different operations of SBR section are controlled manually.
- Records of regular back washing of tertiary treatment units as well as replacement of sand filter media and activated carbon columns is not being maintained.
- Record of replacement of filter media is not available with CETP operator. It was reported that the media was

replaced long back. Further, the result of treated effluent is clear indicator of poor efficiency of ACF & MGF.

- Sludge generation from CETP-6 unit is about 700 MT/month. Examination of the past data revealed that disposal of sludge is almost equal to daily generation. However, about 6750 MT sludge has been found stored at common sludge yard of CETPs at time of inspection, which is a clear indication that generation and disposal data provided in the record is not authentic. It was told that even more than 10000 MT of sludge have been stored in similar manner for a very long time, which is violation of provisions of Haz. Waste (M, H & TBM) Rules 2016. The Management of CETPs does not has any action-plan for the lifting & disposal of the stored sludge in prescribed time frame under H & OW (M &TM) Rules, 2016.
- Records of generation and disposed sludge are not being maintained in prescribed format.
- Filter Press has not been provided for dewatering of sludge (**Fig. 14**).
- Bulk quantity of sludge was stored in shaded storage area. Sludge is also stored in open space as shades provided for storage of sludge are not of sufficient capacity, shown in **Fig. 15**.
- General house keeping all around sludge storage area was very poor. Even the yard site and other areas were becoming greenish due to spillage of sludge. The dried sludge was becoming air born with movement of vehicles.
- Accumulated (Stored) sludge in the yard would become a cause of severe environmental degradation & water pollution in that vicinity.

- Referring to quantity of sludge stored in yard and on basis of details of sludge disposal, it can be concluded that final disposal of sludge, to TSLF or for Co-processing, is not being done as per provisions of Rule 8 of the Hazardous and Other Waste (Management and Transboundary Movement) Rules 2016.

v. As per R.O., Pali, CETP authorities are not maintaining and sharing complete record of effluent treated, chemicals consumed, energy consumption, records of sludge disposal and disposal etc. They do not share such data on monthly basis which is violation of point no. 10 & 16 stipulated in the CTO order dated 27/02/2019.

- The quality of treated effluent is not within the prescribed standards limit. For example, concentration of Chloride is 2560 mg/L and Fluoride is 3.78 mg/L which are non-complying to the standards **(Annexure S-5).**
- Quality should be monitored with an effective surveillance fully automated system round the clock as well as through random checks rather than having a few observations under controlled & known conditions as is routinely done by RSPCB. Also, it would be better if the report of test samples given by the RSPCB laboratory be audited randomly by any authentic and reliable third party research laboratory.
- Observations made by the RSPCB in last few months reveal that quality of treated effluent from CETP-6 is not complying with respect to other parameters as well.
- For example, a sample collected from the final outlet (outside) of CETP-6 on 13/09/2019 by RSPCB shows that observed values of COD, BOD, Chloride and Fluoride were

1072 mg/L, 103 mg/L, 2050 mg/L and 2.27 mg/L against the prescribed limit of 250 mg/L, 20 mg/L, 1000 mg/L and 2.0 mg/L respectively **(Annexure S-6).**

- It has also been noted that quality of effluent at the outlet of CETP-6 located inside the premise of CETP-6 is significantly different than that of the same effluent coming through a pipe at the outlet of CETP-6 located outside of the premise **(Annexure S-7).** Also, there is a significant variation in results of test samples conducted by the laboratory of RSPCB over the months starting from 16.10.2018 to 10.11.2019 of some of the important parameters (such as COD) at the final outlet of CETP-6. The detailed analysis report on the basis of test conducted by RSPCB from 16.10.2018 to 10.11.2019 is enclosed at **Annexure-S8**. Such variation in observations have insisted the Commissioner to conduct **a surprise visit of CETP-6** (the most critical treatment unit of CETP) to carry out further investigation to understand about such differences.
- Also, online treated effluent quality monitoring analyzers were not in operation as shown in **Fig. 16**.
- The working different treatment units at CETP-6 has been found poor. Also, Routine maintenance of the plant is very poor **(Fig. 17 to Fig. 23)**. Records related with routine engineering maintenance are not being maintained properly.
- A lot of noise pollution occurs if D.G. sets are functioning. Intense noise was observed from compressor house. Acoustic enclosure for control noise level has not been provided.

6.1.6.1 Surprise Visit of CEPT-6

i. As mentioned above, the test results of samples taken from CETP-6 at the inspection on 10-11th November, 2019 was not convincing, Commissioner planned to have a surprise visit of CETP-6 on 21.11.2019. Observations were made at inlet, just after secondary clarifier (ACF & PSF units), outlet of CETP-6 and all necessary critical locations.

ii. Just after arrival at the plant, all incoming pipes coming to the inlet sump were running full of flow, shown in **(Fig. 24)**. However, just within 5 minutes, inlet flow from one of the pipes was stopped and flow was reduced in other pipes. It is felt that it was done intentionally to reduce the inflow. The flow meter reading was observed as 420 m^3/hr. Surprisingly there was no variation observed in the flow meter during this time. Probably it is because it is placed at the wrong location to capture inlet flow or flowmeter might not be working accurately or it might have been calibrated to show a particular fixed range of flow only. It may be recalled that flowmeter was recording similar range of flow of (about 427 m^3/hr) during the inspection on 10.11.2019 when there was low inlet flow observed as compared to that during the surprise visit on 21.11.2019. The difference in water level in inlet sump can be seen on both inspection dates as placed at **Fig. 25**.

iii. One additional flexible pipe line discharging raw influent into inlet sump has also been observed during the surprise visit as shown in **(Fig. 25)**, which was not there during a visit on 10-11th November 2019. On enquiry, it was told that it is laid down from Punayata Industrial Area to inlet sump of CETP-6 to carry the industrial wastewater influent

directly to CETP-6 without pretreatment in CETP-4, which is violation of the order of Hon'ble NGT Dated 26/05/2017.

iv. Samples were taken at inlet, just after secondary clarifier (ACF & PSF units) and at the outlet of CETP-6. Few critical parameters were tested in the Laboratory by the Commissioner. The results were quite alarming as shown in Table 1. The analysis report of treated wastewater of CETP collected at the final outlet of CETP-6 indicates that six important parameters out of eight, which were tested, are exceeded much beyond the prescribed limit of design parameters. These are COD with observed value of 940 mg/L against the prescribed limit of 250 mg/L; Chloride value of 3757 mg/L against the prescribed limit of 1000 mg/L; Total Suspended solids (TSS) value of 155 mg/L against the prescribed limit of 100 mg/L; Oil and grease value of 30 mg/L against the prescribed limit of 10 mg/L. BOD_3 (at 27 ^{0}C) value of 320 mg/L against the prescribed BOD limit of 20 mg/L; The values of other parameters were found to be pH = 8.0 (within limit); Total Dissolved Solids = 11140 mg/L, Total Hardness = 280 mg/L. The detailed analysis report is given in Table 1.

Table 1: Test results of samples taken during surprise visit on 21.11.2019

Sample	pH	T.D.S. (mg/L)	Total Hardness (mg/L)	CL (mg/L)	COD (mg/L)	BOD_3 (at 27 ^{0}C) (mg/L)	TSS (mg/L)	Oil & Grease (mg/L)
Influent of CETP	9.7	9100	220	3651	4351	2360	380	460
At the outlet of Secondary Clarifier before Pressure Filter (Holding Tank)	9.0	10000	280	4076	1364	472	80	60
At the final outlet inside CETP Premise	8.0	11140	280	3757	940	320	155	30

v. Immediately, observations were made at the outlet to get effluent flow data. It was further surprising to note that the flow meter reading of outflow which was observed as 124 m^3/hr reduced to 111 m^3/hr which was further reduced to 92 m^3/hr within 3-4 minutes. The color of effluent at the outlet was also changed very dramatically from dark green to pale yellow within 3-4 minutes as shown in **Fig. 26**. At the time of surprise inspection, the sudden change in outlet flow and its colour from dark green to pale yellow within 3 to 4 minutes shows that-

- The outlet treated effluent flow was possibly diverted and some clear water of same TDS might be introduced.
- The flow was possibly reduced by sludge decanting from secondary clarifier to reduce the surface over flow rate.

- Chances of introduction of any bleaching agent (Like sodium hypochlorite etc.) in the outlet pipe at the time of inspection may not be ruled out.
- As stated earlier, the sludge generation is out of limit so probably, a part of the sludge might be recirculated to raw water or equalization tank or somewhere in the process of flow through pipes, which might be one of the reason of high COD at the outlet.
- The BOD is also too high at the inlet of CETP-6, hence reduction is not as per the stipulated limits. The main cause of BOD might be that some waste water stream be fed directly to the pipe/stream coming from primary CETPs (CETP-4 or CETP-2).
- As the treated water has high COD in the test samples taken during the surprise visit as shown in Table 1, it shows that the chemical treatment is ineffective. Probably only pH correction might have been done at the site using some acid. The parameter reduction is only due to settling of the sludge in the clarifiers etc. PSF/ACF are initially non-operative at the time of sudden inspection and were operated partially after some time, it was not clear whether they were in line or NOT. There is no pressure gauge/flow monitoring device available in PSF/ACF, which is essential in order to keep regular watch of working conditions of tertiary treatment units (basically it is only primary unit of tertiary treatment). Also at the time of sudden inspection, effluent at the outlet was having typical smell which was disappeared within 3-4 minutes at the time of inspection itself probably due to reduction in flow as stated earlier.

vi. Above observations clearly shows that CETP-6 is 'non-complying' with respect to;

- Not meeting the effluent standards and several other conditions given in the consent.
- As per the technical data of CETP-6 provided at Annexure R-10 (page 2973-2977 of earlier report submitted to Hon. NGT on 16.01.2019). It is inferred that though this CETP-6 is designed based on raw water characteristics with BOD 700-1000 mg/L; COD 3000-3500 mg/L, Oil and grease 100 mg/L, the actual average values of these parameters at the inlet sump during the surprise visit has been found as 2360 mg/L (BOD); 4351 mg/L (COD); 460 mg/L (Oil & Grease) respectively (Table 1). These values are much higher than the designed values of parameters which clearly shows that the flow coming from CETP-2 and CETP-4 to inlet sump of CETP-6 is not complying the standards. Not only CETP-2 & CETP-4 are non-compliance with respect to their effluent (outlet) meeting requirement standards but also CETP-6 does not meet its input design parameters. CETP-3 was also found non-functional at the time of inspection.
- Similarly, CETP-6 does not meet its effluent design parameters standards as explained under item no. (iv) mentioned above (Table 1). It clearly indicates that the all CETPs are not complying with the standards.

6.2 River Bandi (Jodhpur by-pass)

i. Initially, the status of river Bandi was observed from the site located at NH-62 Jodhpur by-pass bridge (upstream location of the river in Pali town) where

ditches/pools in river bed were seen. Channelization work was going on to separate out effluent of industrial wastewater with natural river flow **(Fig. 27)**. From the By-pass Bridge, ponding of industrial treated effluents were observed in large area.

ii. It has been found that effluent wastewater from CETP-6 is being discharged and getting stored in the pools (4 Nos.) of temporary arrangement of earthen walls (Dhora) construction on the bed of river Bandi itself as shown in **Fig. 11 and Fig. 28**. As this storage facility is spread in the area of about 107650 m^2 as shown in **Fig. 11** without any lining, the possibilities of leakage and seepage of stored effluent from earthen pool into the river cannot be denied, in addition to its seepage into the groundwater. This is vulnerable to contamination of fresh water resources especially when it accumulates highly contaminated treated effluent as can be observed in sampling test results conducted by RSPCB on 11.11.2019 given in **Annexure in S-9**.

Interestingly, the concentration of some of the parameters of the sample taken from the Cess Pool (located at back side of plot no. 18, PIA Pali) is of similar order of magnitude as was measured by the commissioner for a sample taken at the final outlet of CETP-6 (within the premise) on 21.11.2019 during his surprise visit as given in Table 2!

Table 2: Test results of two samples

Quality parameters	Measured values for a sample taken at the final outlet of CETP-6 (within the Premise) by the Commissioner on 21.11.2019	Test results of samples taken on 11.11.2019 from Cess Pool located in the bed of Bandi river where CETP-6 treated effluent is being stored (as per the test report given by H.O. lab RPCB)
pH	8.0	8.43
T.D.S. (mg/L)	11140	11838
CL (mg/L)	3757	2760
COD (mg/L)	940	1759
BOD_3 (at 27° C) (mg/L)	320	321
TSS (mg/L)	155	164
Oil & Grease (mg/L)	30	6

iii. Just u/s of these cess pools (Dhora), there is a confluence of River Bandi with RIICO drain. At the time of inspection, flow of river at u/s of confluence was found as about 75.0 MLD whereas RIICO drain has a discharge of 40.00 MLD. The D/S of confluence was about 115 MLD. As can be seen in **Fig. 29**, u/s of confluence of river is less polluted and even algae growth can be seen. However, algae growth cannot be seen d/s of the confluence which itself is an indicator that quality of water at d/s of confluence of RIICO drain has been deteriorated after mixing of wastewater received from RIICO drain just after the confluence point.

iv. During the site visit, many villagers and the farmers gathered and were requesting for not allowing untreated wastewater of RIICO drain into the river as

it is spoiling the available fresh water stored at d/S reaches of river Bandi coming from Hemawas Dam including water stored at Nehda dam. They interacted and expressed their anguish due to industrial pollution in the river. They were also in the opinion that if RIICO drain discharges untreated wastewater into the river, channelization work **(Fig. 27)** being done in the river to separate river flow will not be effective. In fact, the flows in the river during rainy season which is unable to remove the pollutants completely and instead these pollutants are carried down-stream up to Nehda reservoir and into the ground water affecting the people throughout the year. The natural river flow allows for a reasonable self-purification potential against the organic waste but the heavy industrial pollution with high salinity has a deleterious effect on the biological degradation of the organic waste as well.

v. Industrial pollution effects can also be seen at the inspection site of river Bandi at **Jawadia - Giradara Puliya**, where green coloured effluent with foam formation was flowing as shown in **Fig. 30** and **Fig. 31**. Extent of industrial pollution can be seen very well both in the river water and adjacent soil which has deteriorated productivity of agricultural land in nearby areas. Samples taken from this site on 11.11.2019 were tested by RSPCB, the results of which are placed at **Annexure-S10**.

vi. At **Jaitpura-Gadhwara Puliya**, dark greenish coloured water and soil can be seen very clearly which may be due to reaction of reactive dyes. **(Fig. 32 & Fig. 33).** Samples taken from this site on 11.11.2019 were tested by RSPCB, the results of which are placed at **Annexure-S11**.

6.3 The Nehda Dam:

Presently upstream of Nehda dam is full of water. At his location, village Pradhans along with villagers gathered and expressed their views on damaging effects of effluents stored on dam site. Villagers main concern is that it should not be polluted due to mixing of industrial wastewater. Otherwise, they will not be able to utilize this water for irrigation. They informed on health effects and degradation of soil in agricultural fields. All along the river banks, there was deposition of green colour sludge which is a clear indication of industrial effluents flowing into the river.

The results of water quality monitoring at Nehda dam provided by RSPCB is placed at **Annexure S-12**. The water quality at Nehda dam indicate; Chemical Oxygen Demand (COD) value of 81.0 mg/L, Bio-Chemical Oxygen Demand (BOD) of 11.0 mg/L, fixed dissolved solids value of 1592 mg/L, Electrical conductivity value of 3880 mico-mho/cm^2. At the Downstream of Nehda dam, effect of pollution can be observed through accumulated sludge and polluted water in different pockets which can be seen in **Fig. 34** & **Fig. 35**.

7. Additional Suggestions to improve performance of CETPs

A team of scientists including this Commissioner has already placed their findings before Hon'ble Tribunal along with some suggestions to improve the performance of CETPs through a report dated 16.01.2019 (page 2925-2930). As no change has been observed in the status of functioning of CETPs during this inspection and no visible efforts have been made by CETP trust to improve performance of CETPs, those suggestions are still applicable in improving efficiencies of all CETPs. In addition to those suggestions, a few more are suggested as below:

i. Hon'ble Tribunal vide its order dated 31.01.2019 directed to stipulate zero liquid discharge for CETP-6 with reference to river Bandi and to ensure that the treated effluent is supplied to the Member Units. RSPCB was directed to ensure that no industrial and sewage effluent is discharged into the river (even treated) and instead, it should be utilized by the industries. Unfortunately, treated or untreated effluent goes to river Bandi directly or indirectly and/or percolating to the groundwater and contaminating resources of fresh water.

ii. If sis out of total eight parameters tested by the Commissioner during his surprise visit on 21.11.2019, have alarming values, much beyond the permissible one, in the effluent of CETP-6 at the outlet, we have to go miles before achieving any success. It is not the problems of performance of non-living CETPs infrastructure alone but such problems are associated with somewhere else.

iii. Upgradation of all CETPs to treat the waste water up to reusable levels can also be achieved by adopting modern reliable technology like Electro-plasma technology, forward

osmosis technology, MVR technology etc. However, selection of any such technology to be weighted before adopting it. Though there exist several advanced technologies including the conventional one, one should be ready to solve the problem with determination and correct approach as 'where there is a will, there is a way to go miles'. It is unfortunate that CETP trust, Pali was asked to install Reverse Osmosis (R.O.) Plant of adequate capacity supported with scientific arrangement for disposal of RO rejects to achieve the status of ZLD by January 2016 to ensure compliance of E.C. conditions issued in 2011 and consent conditions on 23.03.2015, which was not fulfilled till date. The deadline to achieve the status of ZLD has now been extended in the revised CTO upto 31.08.2020.

8. Concluding observations with reference to performance of CETPs:

None of the CETPs is meeting the standards. These plants are 'non-complying' with respect to designed influent and effluent characteristics as described in section **6.0**.

a. Not meeting the standards with respect to some parameters such as BOD, COD, Oil & Grease, Chloride etc.
b. The consent granted to CETP-2 for Collection, Generation, Reception, Storage of Chemical Sludge (Cat-34.3) @ 10 TPD was valid up to 31/07/2019.
c. CETP-4 is presently operational without any formal CTO letter because consent to operate under Water Act, 1974 was issued vide letter dated 26.11.2015 and the same was valid **up to 30.09.2018.** Agency has applied for

renewal of consent to operate vide online application dated 30.06.2018.

d. Plantation in the CETP premises was not found adequate.
e. Untreated wastewater discharged from RIICO drain has been contaminating Bandi river. RSPCB should ensure that no industrial and sewage effluent is discharged into the river (even treated) and instead, it should be utilized by the industries as directed by the Hon'ble Tribunal vide its order dated 31.01.2019.
f. Six out of total eight parameters tested by the Commissioner during his surprise visit on 21.11.2019, have alarming values, much beyond the permissible one, in the effluent of CETP-6 at the outlet. Trade effluent after treatment by the CETPs do not meet the prescribed standards as was noticed during the surprise visit on 21st November 2019 .
g. In fact, all the CETP units have been found as prolonged noncompliance of consent conditions. These plants are 'non-complying' with respect to designed influent and effluent characteristics, and Operation and Maintenance issues, such as chemical's consumption, energy usage, handling, disposal and management of sludge, acoustic for D.G. sets etc. as described in section 6.
h. The electromagnetic meter provision has been made after the equalization tank (in transfer line to flash mixer section), which is not appropriate location for capturing inflow of the plant. It has to be installed at the inlet point of conveyance influent system (before Conduit Termination Pit or receiving inlet sump).
i. The present tertiary treatment available at CETP-6 and

provision of PSF & ACF at the plant is eyewash.

j. SCADA online monitoring system in any of the CETPs are non-functional.

k. As per the earlier CTO issued dated 23.03.2015, CETP trust, Pali was asked to install Reverse Osmosis (R.O.) Plant of adequate capacity supported with scientific arrangement for disposal of RO rejects to achieve the status of ZLD within 10 months to ensure compliance of E.C. conditions and consent conditions, which was not fulfilled and the earlier time frame given for installing ZLD system was expired in January 2016. The deadline to achieve the status of ZLD has been extended in the revised CTO upto 31.08.2020.

l. As per consent granted to CETP-6; no waste water is to be disposed and it should be based on ZLD. However, it has been found that effluent wastewater from CETP-6 is being discharged and getting stored in a pool of temporary arrangement of earthen walls (Dhora) constructed on the bed of river Bandi itself. The accumulated effluent received from the outlet of CETP-6 at Cess Pool (Dhora) is highly contaminated and has non-compliant quality as discussed in Table 2. The temporary and non-engineered structure of such kind would be vulnerable to both groundwater contamination and river Bandi due to seepage of stored effluent.

m. The Programmable Logic Controller (PLC) based chemical dosing facilities have not been provided at any of the CETPs. During inspection related operations are being performed manually by unskilled labor in an un-scientific manner. In the absence of any surveillance and

automated system, usage of appropriate chemicals with optimum dose for treatment cannot be ascertained.

n. Neither run hour meters are provided nor are any log book is maintained for operation of influent/effluent handling pumps installed with different units of CETP.

o. Accumulated (Stored) sludge in the yard has become a cause of severe environmental degradation & water pollution in the vicinity.

p. General house keeping all around sludge storage area was very poor. Even the yard site and other area were becoming greenish due to spillage of sludge. The dried sludge was becoming air born with movement of vehicles.

q. Examination of past data revealed that disposal of sludge is almost equal to daily generation and, if a large quantity of hazardous sludge is stored in yard and lying in open lagoon over the years, it clearly indicates that sludge is not being disposed at same rate as it is being generated. Sludge generation from CETP-6 unit is about 700 MT/month. Examination of the past data revealed that disposal of sludge is almost equal to daily generation. However, about 6750 MT sludge has been found stored at common sludge yard of CETPs at time of inspection, which is a clear indication that generation and disposal data provided in the record is not authentic. The Management of CETPs does not has any action-plan for the lifting & disposal of the stored sludge in prescribed time frame under H & OW (M &TM) Rules, 2016.

r. There is no pressure gauge/flow monitoring device available in PSF/ACF, which is essential in order to keep regular watch of working conditions of tertiary treatment

units.

s. There is no proper layout of piping systems/signage at the plant, indicating details of inflows/outflows carrying out by the piping system. It is not clear whether some of these pipes are coming from a particular treatment unit (e.g. CETP-2, CETP-4 etc.) or coming directly from the industrial areas.

9. Suggestive Action Plans for Industrial Pollution Control

In addition to the suggestions made by a team of scientists including this Commissioner in the report dated 16.01.2019 placed before Hon'ble Tribunal, a few more suggestions are given below:

i. CETP trust should submit an action plan to achieve the status of ZLD within the prescribed deadline to Honorable NGT within two weeks. For this purpose, a District Level committee consisting of RSPCB and RIICO under the chairmanship of District Collector may be constituted to monitor the compliance of execution of such Action Plan as well as ground level checking. Such committee should report the progress to Honorable NGT on monthly basis.

ii. It is essential that quantity and quality of wastewater (both untreated influent and treated effluent) at CETPs be monitored with an effective fully automated surveillance system round the clock as well as through random checks in composite manner rather than having a few observations under controlled & known conditions. RSPCB should monitor regularly river water quality and quantity at critical locations to apply mass balance of selected stretches so that illegal

disposal of industrial wastewater into river can be monitored. Also, it would be better if the report of test samples given by the RSPCB laboratory be audited randomly by any authentic and reliable third party research laboratory.

iii. It is also necessary that RSPCB must conduct frequent surprise checks (at least weekly) to verify influent and effluent characteristics along with their flow observations at each unit level of the plant (i.e. primary, secondary, tertiary, units etc.). All data pertaining to frequent surprise checks must be recorded and made available in RSPCB office at Pali which can be verified by concerned agencies wherever needed.

iv. There should be regular inspection and maintenance schedule of closed pipeline carrying effluent to CETPs. Usage of flexible pipes for carrying wastewater within different treatment units of CETP to be prohibited to avoid any misuse for discharging the sludge and untreated wastewater. Only permanent closed conduit (piping) system be allowed to carry discharge. Pipelines carrying industrial effluent from industries to CETPs should also be audited for hazard prevention with safety. Routine checks should be done by duly accredited agency. The pipeline route should be marked and well displayed for public and maintenance purposes.

v. CETP Trust should ensure proper layout indicating designed piping systems/signage at the plant to demonstrate how and what inflows/outflows are being received/discharged by the plants.

vi. The electromagnetic meter provision which has been made after the equalization tank (in transfer line to flash mixer section) is not appropriate location for capturing inflow of the plant. It has to be installed at the inlet point of conveyance

influent system (before Conduit Termination Pit or receiving inlet sump).

vii. The present tertiary treatment available at CETP-6 and provision of PSF & ACF at the plant is eyewash. It must be ensured that PSF & ACF media used in in the process be replaced at proper frequency.

viii. SCADA online monitoring system in any of the CETPs are non-functional. Installation of on line effluent quantity and quality monitoring equipment, connected with servers of RPCB & CPCB, for continuous real time monitoring should be ensured. All such installed arrangements be kept in operation all the time to perform real time monitoring of quantity and quality of effluent received at various CETPs, transferred to CETP-VI and treated through it.

ix. Sludge should be disposed at proper frequency at dedicated TSDF site. Examination of the past data revealed that disposal of sludge is almost equal to daily generation. However, about 6750 MT sludge has been found stored at the common sludge yard of CETPs at the time of inspection. CETP trust should ensure that all 6750 MT of sludge be disposed to the TSDF site within a week. The Management of CETPs should also have a proper action-plan to improve handling and disposal process of sludge within the premise of CETP as well as its disposal to the TSDF sites as per guidelines under H & OW (M &TM) Rules, 2016.

x. There should also be proper monitoring plan on continuous basis to ensure that all the member industries not only have installed PTPs but also they use them efficiently before discharging their effluent into CETP pipeline for further treatment.

xi. IP camera/PTZ camera, with access to RSPCB, should be installed for keeping round the clock vigilance of all CETPs. Up-gradation of SCADA system of all member units should be ensured with on line monitoring of TSS & pH facility.

xii. Proper skilled manpower is to be hired at all the CETPs for its operation, maintenance and monitoring.

xiii. Not allowing industrial (even treated) and sewage disposal into River Bandi. To monitor this, CCTVs be installed at strategic locations and monitored by District Collector and Regional Office of RSPCB.

xiv. It is suggested that remote monitoring studies should be performed by RSPCB HQ at least once in fortnight to know ground reality of industrial clusters without human interference.

xv. Manually operated effluent flow control valves (member units to Conduit line) of all member units should be replaced with centrally controlled automatic valves.

xvi. Utilization of spent chemicals/acid for effluent treatment and pH correction should be stopped.

xvii. Issue related with Operation and Maintenance of CETPs: Generally, CETPs & STPs are non-compliant because of poor operation and maintenance. The agency operating the CETP plays a vital role behind its performance. At present these agencies are finalized by local Trust/ Special Purpose Vehicle (S.P.V.) comprising representatives of member industries. It has been observed that such agencies are neither technically competent nor they deploy qualified and competent manpower for such important assignments related with environment conservation and livelihood of people. Generally, the labour supply agencies/contractors are being engaged for this work

and therefore the plants are being operated without any technical & academic control. This is resulting intangible and severe damage to human health, vegetation and surrounding environment. In such situation the State Government should come forward with a concrete plan for operation of all CETPs up to the prescribed norms so that technically competent, experienced and responsible agencies can only execute the tasks. There may be a centralized process of awarding contract for O & M of all CETPs & STPs in the State and tendering process for O & M for common facilities like CETPs, STPs should be conducted under strict supervision of a committee of experts (from academic field, finance experts, technical experts & administrators) constituted by the State Government. This committee should dispense its monitoring role till awards of contract to competent agency. The scope of such contract must be defined with proper roles for each of the stakeholders (viz., Operating agency, CETP trust/ S.P.V./ member units, State Government, Coordination Committee etc.).

xviii. Promotion of new technologies recently developed for recovery of water from trade effluent streams: Upgradation of all CETPs to treat the waste water up to reusable levels can also be achieved by adopting modern reliable technology like Electro-plasma technology, forward osmosis technology, MVR technology etc. However, selection of any such technology to be weighted before adopting it. Looking to critical scenario of water pollution in western Rajasthan, the State Government as well as the State Pollution Control Board may come forward for promotion of new technologies after a thorough investigation. State Pollution Control Board should encourage

to adopt advanced technology after conducting proper performance evaluation through experts.

xix. Replacement of Procion Printing (printing using reactive dyes) by Pigment Printing: In Pali cluster most of the textile industries are carrying out Procion Printing. In this process reactive dyes are used and after dying Silicate washing process is done for fixation of dyes on the cloths. This process needs huge quantity of water besides complex nature effluent is generated due to presence of Silica. Treatment of such effluent may require specialized treatment for achieving the norms of effluent discharge/recycling of treated effluent. Recently, the trend of Pigment Printing has increased due to market demand. The Pigment Printing does not need washing for finishing of print. Therefore, such change in printing process may contribute a lot for control of existing problem of water pollution in western Rajasthan. An in-house experimentation on raw effluent through a series of tests on characterization of dye suspensions as well as on optimization of coagulation-flocculation process is necessary to improve performance of the CETPs. Better understanding of the influent characteristics of dye can facilitate a better treatment as per the load on influent.

xx. The cess pool constructed on the river bed with earthen walls to store treated effluent of CETP-6 itself indicates that trade effluent do not meet the prescribed standards. The accumulated effluent received from the outlet of CETP-6 at this site is highly contaminated and has non-compliant quality as discussed in Table 2. The temporary and non-engineered structure of such kind would be vulnerable to both groundwater contamination and river Bandi due to seepage of

stored effluent. Concerned authorities should proper action to ensure that the contaminated water from the cess pool should not percolate to river stretch or groundwater.

xxi. It can also be observed from the measured values of water quality data from samples taken by RSPCB. It is the violation. Neither CPCB nor SPCB have taken any effective steps in this regard.

xxii. Due to prolonged noncompliance of consent conditions, necessary action should be taken against the Trust, SPV & operating agency. As CETP-6 is not meeting ZLD condition, and could not fulfill the prescribed norms and standards, even all CETP's of Pali may be closed with immediate effect till all EC conditioned are not complied.

Respectfully Submitted.

Ajit Pratap Singh
Court Commissioner, Hon. NGT
Professor and Dean, BITS Pilani Rajasthan

Annexure: Photographs

Fig.1 Maintenance of machinery and spillages at CETP-2 on 10-11-2019

Fig. 2(a) pH of influent at CETP-2 on 10-11-2019

Fig. 2(b) Influent flow meter at CETP-2 on 10-11-2019

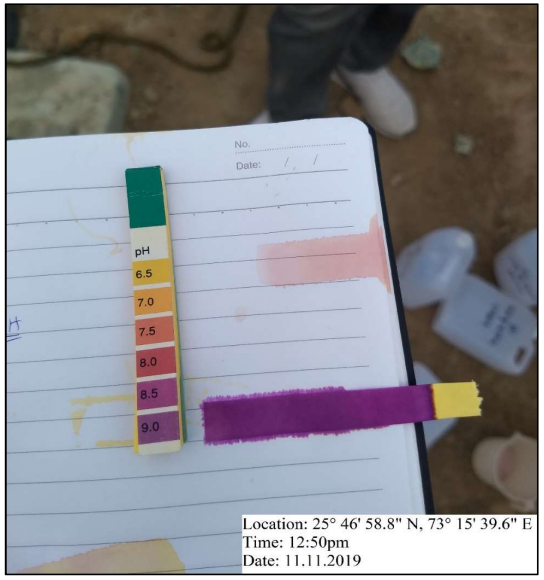

Fig. 3(a) pH of influent flow at CETP-4 on 11-11-2019

Fig. 3(b) Influent flow meter at CETP-4 on 11-11-2019

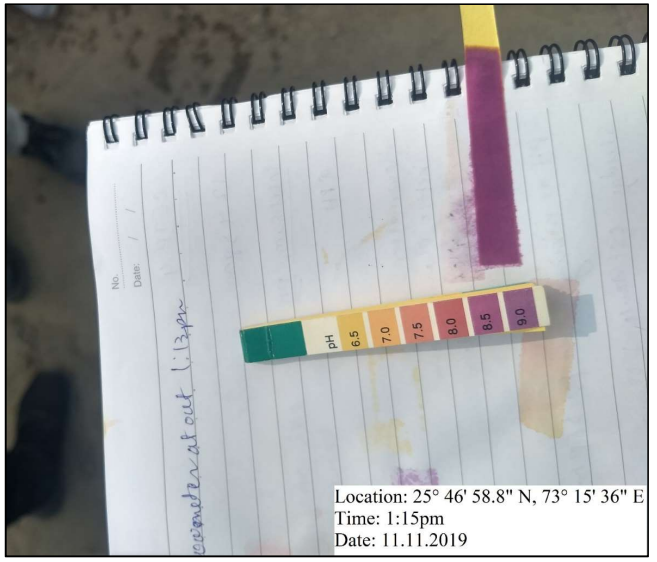

Fig. 3(c) pH of effluent flow at CETP-4 on 11-11-2019

Fig. 4 Status of aeration at CETP-4 on 11-11-2019 (non-distributed and ineffective aeration process)

Fig. 5 Status of sludge storage yard and open sludge lagoon at CETP-4 on 11-11-2019 (Old sludge dumped in lagoon in open area was being excavated at the time of inspection)

Fig. 6 Status of effluent quality analyzer at CETP-4 on 11-11-2019

Fig. 7 Status of CETP-4 on 11-11-2019

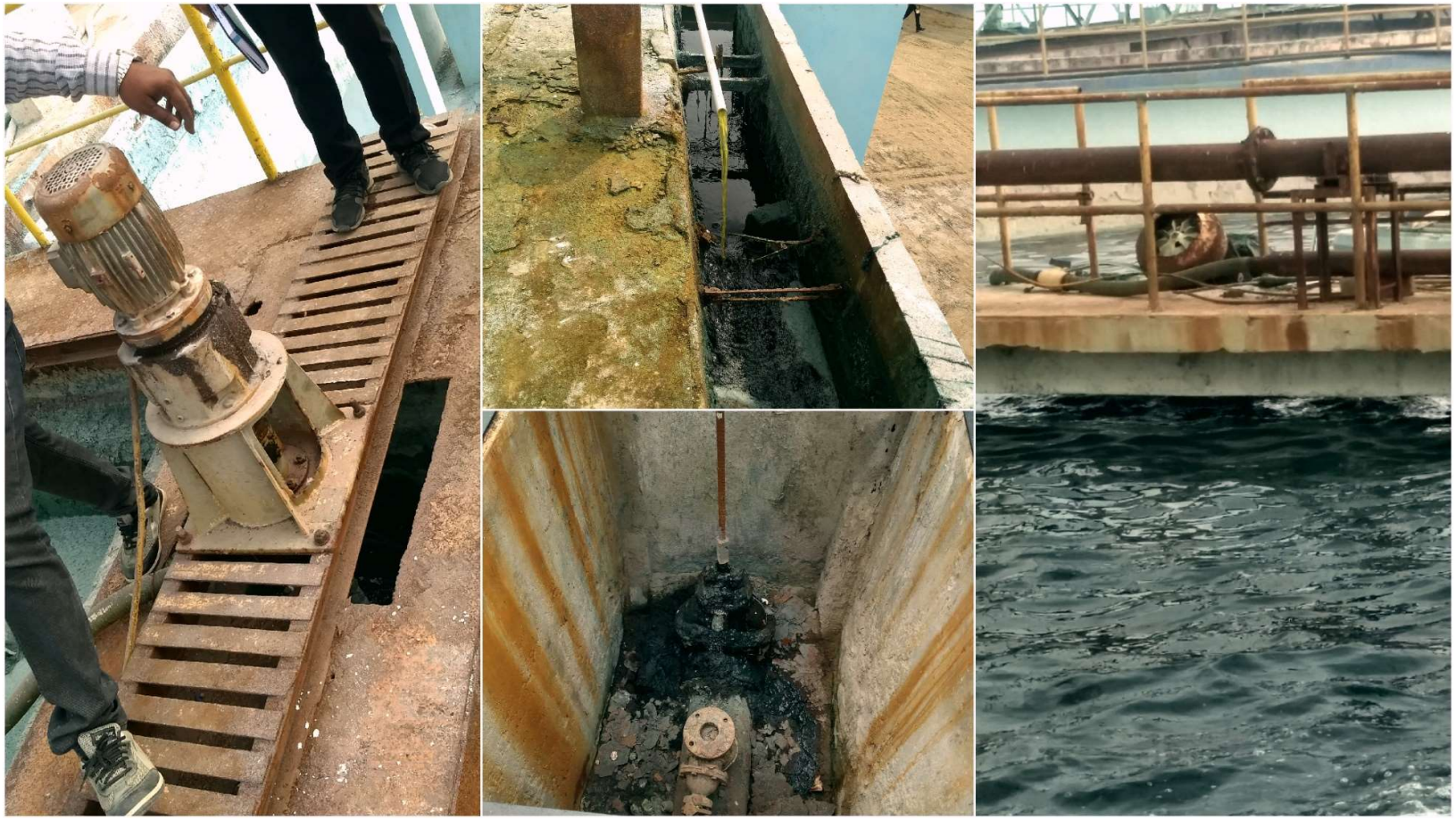

Fig. 8 Status of CETP-4 on 11-11-2019 (poor maintenance)

Fig. 9 Status of CETP-6 on 10-11-2019

Fig. 10 Status of temporary pool (Dhora) created in Bandi river-bed on u/s of Jodhpur bypass flyover on 11-11-2019

Fig. 11 Status of temporary cess pool (Dhora) created on Bandi river-bed just before u/s of Jodhpur bypass flyover taken from satellite on 20-11-2019

Fig. 12(a) pH of effluent flow at CETP-6 on 10-11-2019

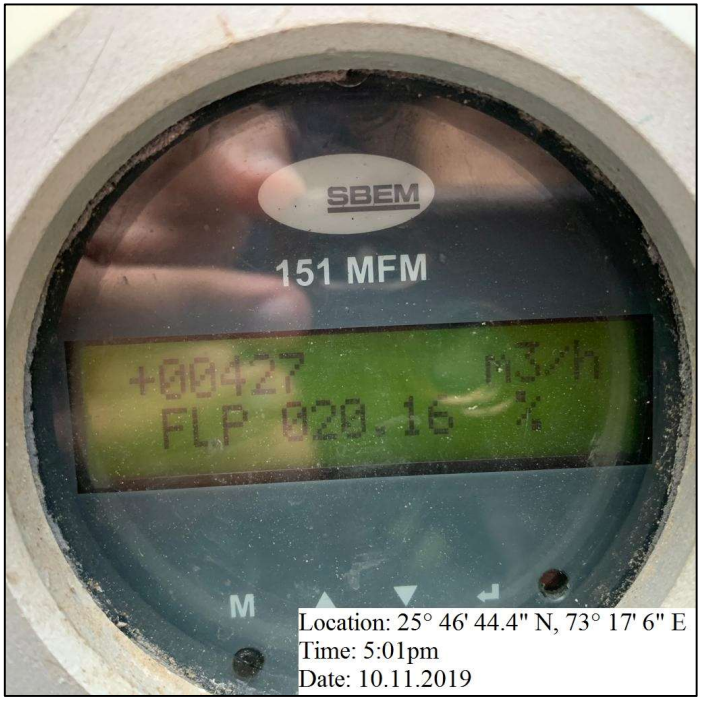

Fig. 12(b) So called Influent flow meter at CETP-6 on 10-11-2019

Fig. 13 Status of chemical dosage at CETP-6 on 10-11-2019 (poor handling with no controllers to manage quantity of dosing)

Fig. 14 Status of sludge collection at CETP-6 on 10-11-2019 (poor handling)

Fig. 15 Status of sludge storage yard at CETP-6 on 10-11-2019 (poor maintenance)

Fig. 16 Status of effluent quality analyzer at CETP-6 on 10-11-2019

Fig. 17 Status of CETP-6 on 10-11-2019 (poor maintenance)

Fig. 18 Status of grit and debris removal at CETP-6 on 10-11-2019 (poor working condition)

Fig. 19 Status of primary clarifier showing anaerobic reaction at CETP-6 on 10-11-2019 (poor conditioned)

Fig. 20 Status of premises outside CETP-6 and effluent release in river Bandi showing greenish-blue hue of treated effluent on 10-11-2019 (poor condition)

Fig. 21 Status of sludge pump house at CETP-6 on 21-11-2019 (Overflow condition above free-board at the time sudden inspection and was reduced after a few minutes)

Fig. 22 Status of sludge collection for disposal at storage yard at CETP-6 on 21-11-2019 (poor handling)

Fig. 23 Status of chemical dosage at CETP-6 on 21-11-2019 (No automated controllers to manage quantity of dosing)

Fig. 24 Status of change in influent flow at CETP-6 on 21-11-2019 within 10 Minutes when flow through pipes is reduced/closed

Fig. 25 Status of CETP-6 on 10-11-2019 and 21-11-2019

Fig. 26 Status of change in quality/color (possibilities of quality manipulation (samples collected with time gap of 2 to 3 mins)) and flow rate of effluent of CETP-6 on 21-11-2019

Fig. 27 Channelization of river stretch in the bank of Bandi river on u/s of Jodhpur bypass flyover on 11-11-2019

Fig. 28 Status of temporary pool (Dhora) created in Bandi river-bed on u/s of Jodhpur bypass flyover on 11-11-2019

Fig. 29 Status of confluence of Bandi river from d/s of Hemawas dam and RIICO drain wastewater effluent on 11-11-2019

Fig. 30 Status of river Bandi at Jawadia - Giradara Puliya on 11-11-2019

Fig. 31 Status of river Bandi at Jawadia - Giradara Puliya on 11-11-2019

Fig. 32 Status of river Bandi at Jaitpura-Gadhwara Puliya on 11-11 2019

Fig. 33 Status of river Bandi at Jaitpura-Gadhwara Puliya on 11-11-2019

Fig. 34 Status of u/s side of Nehda dam on 11-11-2019

Fig. 35 Status of d/s side of Nehda dam on 11-11-2019

Annexure: Others

Item No. 07 Court No. 2

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Original Application No.32/2014 (THC)
(CWP No. 9503/2012)
(M.A. No. 921/2018)

Kishan Paryavaran Sangaharsh Samiti, Jaipur Applicant(s)

Versus

State of Rajasthan & Ors. Respondent(s)

Date of hearing: 18.10.2019

CORAM:
HON'BLE MR. JUSTICE RAGHUVENDRA S. RATHORE, JUDICIAL MEMBER
HON'BLE DR. SATYAWAN SINGH GARBYAL, EXPERT MEMBER

For Applicant (s) Ms. Jyoti Sharma, Advocate for
Mr. Dipesh Choudhary, Advocate

For Respondent(s) Mr. Raj Kumar, Advocate
Mr. Sanyat Lodha, Advocate
Mr. Adhiraj Singh,Advocate
Mr. Vinay Kothari, Advocate
Mr. Balendu Shekhar, Advocate
Mr. Shashank Saxena, Advocate for Mr. Ardhendumauli Kr. Prasad, Advocate

ORDER

The Learned Counsel for the applicant is un-available on account of his personal reasons. Therefore, response to the affidavit filed by the respondents could not be submitted. However, we give last opportunity to the applicant to file response, if they so desire.

The Learned Counsel for respondent no.5 submits that CETP is functioning and all discharges are within the prescribed parameters.

In view of the circumstances of the case and the aforesaid submissions made by the Learned Counsels, we deem it proper to have an update report of the situation at the ground level for which we considered proper to appoint a Court Commissioner. It may be mentioned that earlier also a report had been submitted by the Commissioner. Now we would like to have a report in respect of the present status of CETP in comparison to the one on the earlier visit.

We, therefore, request Dr. Ajit Pratap Singh, Prof. BITS Pilani, Pilani District Jhunjhunu, Rajasthan to visit the site and submit a report before the next date of hearing. The State Pollution Control Board, Rajasthan shall pay the Court Commissioner honorarium of Rupees One Lakh and other expenses of logistics etc. The District Collector and the Superintendent of Police of District Pali shall take all steps necessary for safety and security of the Court Commissioner.

A copy of this order be sent to the Court Commissioner- Dr. Ajit Pratap Singh through email forthwith.

List the matter on 18th November, 2019.

Justice Raghuvendra S. Rathore, JM

Dr. Satyawan Singh Garbyal, EM

JG

Head Office (PLG)

Rajasthan State Pollution Control Board

4, Institutional Area, Jhalana Doongari, Jaipur-302 004

Phone: 0141-5159600,5159695 Fax: 0141-5159697

Revised Consent

File No : **F(Plan)/Pali(Pali)/1(1)/2015-2016/7180-7182**

Order No : **2018-2019/PLG/1072**

Date: **27/02/2019**

Unit Id : 775

M/s Pali Water Pollution Control Treatment and Research Foundation

Mandia Road Pali Marwar , Tehsil:Pali
District:Pali

Sub: **Consent to Operate** under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981**.**

Ref: Your application for Consent to Operate dated 31/01/2018 and subsequent correspondence.

Sir,

Consent to Operate under the provisions of section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 (hereinafter to be referred as the Water Act) and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, (hereinafter to be referred as the Air Act) as amended to date and rules & the orders issued thereunder **is hereby granted** for your **Common Effluent Treatment Plant (CETP)-Unit-VI plant** situated at **Punayata Road, Industrial Aera Tehsil:Pali District:Pali** , Rajasthan, subject to the following conditions:-

1 That this Consent to Operate is valid for a period from **01/02/2018** to **31/01/2023** .

2 That this Consent is granted for manufacturing / producing following products / by products or carrying out the following activities or operation/processes or providing following services with capacities given below.

Particular	Type	Quantity with Unit
CETP	Activity	12.00 MLD

3 That this consent to operate is for existing plant, process & capacity and separate consent to establish/operate is required to be taken for any addition / modification / alteration in process or change in capacity or change in fuel.

4 That the quantity of effluent generation along with mode of disposal for the treated effluent shall be as under:

Head Office (PLG)
Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Doongari, Jaipur-302 004
Phone: 0141-5159600,5159695 Fax: 0141-5159697

Revised Consent

File No : **F(Plan)/Pali(Pali)/1(1)/2015-2016/7180-7182**
Order No : **2018-2019/PLG/1072** **Date: 27/02/2019**
Unit Id : 775

Type of effluent	Max. effluent generation (KLD)	Recycled Qty of Effluent (KLD)	Disposed Qty of effluent (KLD)and mode of disposal
Trade Effluent	12000.000	12,000.000	NIL Zero Discharge with Scientific arrangement for disposal of RO rejects to achieve the status of ZLD

5 That the sources of air emmissions along with pollution control measures and the emission standards for the prescribed parameters shall be as under:

Sources of Air Emmissions	Pollution Control Measures	Prescribed	
		Parameter	Standard
DIESEL GENERATOR(1250KVA)	ACOUSTIC ENCLOSURE , ADEQUATE STACK HEIGHT	NOx (as NO2) (at 15% O2) day basis in ppmv	710 ppm
		NMHC (as C) (at 15% O2)	100mg/nm3
		PM (at 15% O2)	75mg/nm3
		CO (at 15% O2)	15Mg/NM3
		CO (at 15% O2)	150Mg/NM3

6 That the trade effluent shall be treated before disposal so as to conform the the standards prescribed vide notification no S.O. 4 (E) by Ministry of Environment & Forest dated 01.01.2016 for disposal into Inland Surface water, leading to zero liquid discharge from the CETP.

Head Office (PLG)

Rajasthan State Pollution Control Board

4, Institutional Area, Jhalana Doongari, Jaipur-302 004

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Revised Consent

File No : F(Plan)/Pali(Pali)/1(1)/2015-2016/7180-7182

Order No : 2018-2019/PLG/1072

Date: 27/02/2019

Unit Id : 775

7 **That the CETP trust, Pali shall install Reverse Osmosis (R.O.) Plant and Multi Effect Evaporator of 12 MLD capacity to achieve the status of ZLD with in 18 months(upto 31.08.2020) and ensure compliance of E.C. conditions and consent conditions, failing which your Bank Guarantee (Rs 12 Lacks) shall be forfeited, without any further notice**

8 **That The trust shall obtain all necessary permission from concern authorities (RIICO) and district administration Pali for operation of the plant.**

9 **That the CETP Trust shall issue direction to all the member units for proportionate reduction in their operations and effluent discharge so as to keep the quantity of combined effluent within the reduced operating capacity of the CETP for achieving the prescribed standards as per Environment Protection Act 1986**

10 **That the Trust will maintain complete record of the effluent treated, chemicals consumed etc. and will send monthly report to R.O. Pali.**

11 **That Trust shall comply with the provisions of Hazardous Waste (Management & Transboundary Movement) Rules, 2016 as amended time to time.**

12 **That the trust shall properly maintain the closed conduits pipeline for proper collection and conveyance of the effluent generated from the individual /member units to the CETP and keep it in proper working order so as to prevent overflow of untreated effluent through open drains.**

13 **That the project proponent shall comply with all the conditions of Environmental Clearance imposed by SEIAA, Jaipur, Rajasthan vide letter no. 09-10 dated 09/09/2011.**

14 **The stream of effluent emanating from each participant industry shall be equipped with the recording flow measuring device and sampling points, both at inlet and outlet of treatment works. The records of the measurement shall be maintained for each inlet and outlet on daily basis and the records shall be submitted to the Board & Regional Office on monthly basis.**

15 **That this consent to operate is valid for operation of one CETP-VI of 12.00 MLD capacity only at Punayata Industrial Area, Pali. For any change in number & its capacity, the unit has to seek fresh consent to Establish. That CETP shall take maximum effluent intake upto 7.5 MLD from all the units as directed my state board's letter dated 25.08.2018.**

16 **That the management of CETP shall maintain the register of the daily consumption of chemicals, energy and lime etc and the records shall be submitted to the Board & Regional Office on monthly basis.**

17 **That the unit shall not allow making any obstacles to any natural water flow i.e. natural nallah/stream carrying rain water to any water body.**

Head Office (PLG)

Rajasthan State Pollution Control Board

4, Institutional Area, Jhalana Doongari, Jaipur-302 004

Phone: 0141-5159600,5159695 Fax: 0141-5159697

Revised Consent

File No : F(Plan)/Pali(Pali)/1(1)/2015-2016/7180-7182

Order No : 2018-2019/PLG/1072

Date: 27/02/2019

Unit Id : 775

18 **That if the project cost exceeds Rs. 26.01 Crores, the unit shall take/obtain modification in consent after paying fee as applicable.**

19 **That the trust shall ensure that all the member units should not discharge waste water more than the quantity of waste water allowed by the Trust/State Board.**

20 **That this consent to operate shall be subject to compliance of any direction or order passed by Court of Law in the matter. This consent is subject to compliance of orders passed in the matter Of O.A. NO 32(Thc/2014), Kishan Paryavaran Snagharsh Samiti V/S State Of Rajasthan & Ors**

21 **That the CETP trust Pali shall ensure compliance of MoEF, GoI letter dated 13/01/2010 through which moratorium has been imposed on various industrial areas of Pali on the basis of assessment of Comprehensive Environmental Pollution Index(CEPI)**

22 **That quality of the treated effluent will be brought within prescribed standards within a period of one month.**

23 **That sludge stored at the storage yard will be expeditiously disposed either at the CTDF Balotra or to the cement industries for co-processing.**

24 **That the trust will ensure that the primary treatment plants installed by the member units are maintained and operated so as to achieve the prescribed inlet standards of CETPs.**

25 **That PH correction facility by the member units having discharge less than 50 kld will be installed as per the directions of the Hon'ble NGT**

26 **That SCADA system installed at the CETP and member unit will be properly operated and maintained**

27 **That online effluent monitoring system will be operated and maintained by the CETP Trust**

28 That this revised consent letter shall supercede the earlier consent letter no **F(Plan)/Pali(Pali)/1(1)/2015-2016/7123-7125** dated **26/02/2019**

29 That, not withstanding anything provided hereinabove, the State Board shall have power and reserves its right, as contained **under section 27(2) of the Water Act and under section 21(6) of the Air Act** to review anyone or all the conditions imposed here in above and to make such variation as it deemed fit for the purpose of **Air Act & Water Act**.

30 That the grant of this **Consent to Operate** is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with the conditions laid down in all other laws for the time-being in force, rests with the industry/ unit/ project proponent.

Head Office (PLG)

Rajasthan State Pollution Control Board

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Revised Consent

File No : **F(Plan)/Pali(Pali)/1(1)/2015-2016/7180-7182**

Order No : **2018-2019/PLG/1072**

Date: **27/02/2019**

Unit Id : 775

31 That the grant of this **Consent to Operate** shall not, in any way, adversely affect or jeopardize the legal proceeding, if any, instituted in the past or that could be instituted againt you by the State Board for violation of the provisions of the Act or the Rules made thereunder.

This **Consent to Operate** shall also be subject, besides the aforesaid specific conditions, to the general conditions given in the enclosed Annexure. The project proponent will comply with the provisions of the **Water Act and Air Act** and to such other conditions as may, from time to time , be specified, by the State Board under the provisions of the aforesaid Act(s). Please note that, non compliance of any of the above stated conditions would tantamount to revocation of **Consent to Operate** and project proponent / occupier shall be liable for legal action under the relevant provisions of the said Act(s).

This bears the approval of the competent authority.

Yours Sincerely

Group Incharge[PLG]

Copy To:-

1 Regional Officer, Regional Office, Rajasthan State Pollution Control Board, Pali requested to monitor the compliance of CTO EC conditions and orders of Honble NGT.

2 Master File.

Group Incharge[PLG]

Annexure S3_1: Inlet quality data of CETP-2 tested by RSPCB

FORM - X
RAJASTHAN STATE POLLUTION CONTROL BOARD
REPORT OF THE STATE BOARD ANALYST
(See Rule - 24)
Final Report

Report No. : **18994**
Report On : **15/11/2019**

I hereby certify that I **R K Sharma**, State Board Analyst duly appointed **under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974** received on the **12/11/2019** from **Yash Pal Meena, JSO, Pali ,RSPCB Pali** a sample of **Waste Water** of **M/S Pali Water Pollution Control Treatment and Research Foundation , Plant - , , Tehsil- Pali , District- Pali** Collected from **Waste water sample collection from inlet of CETP unit - II** Collected on **10/11/2019**. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on **15/11/2019** and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	7208
2	Zinc as Zn mg/l	0.736
3	pH	11.1
4	Total Suspended Solids mg/l	848
5	Chemical Oxygen Demand (COD) mg/l	2460
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	453
7	Oil & Grease mg/l	11
8	Copper as Cu mg/l	1.53
9	Nickel as Ni mg/l	0.1
10	Lead as Pb mg/l	0.11
11	Total Chromium as Cr mg/l	0.07
12	Iron as Fe mg/l	2.35
13	Cadmium as Cd mg/l	0.018
14	Sulphides as S mg/l	12
15	Chloride as Cl mg/l	1860
16	Sulphate as SO_4 mg/l	1478
17	Ammonical Nitrogen as N mg/l	18.5
18	Phosphate (Total) as P mg/l	Not Determined
19	Fluoride as F mg/l	4.13
20	Total Dissolved Solids mg/l	10458
21	Conductivity at 25° C µmho/cm2	11420
22	Total Kjeldahl Nitrogen (TKN) as N mg/l	20.7

The condition of the seals, fastening and container on receipt was as follows : **Intact**
Signed This On **15/11/2019**

BOARD ANALYST
Rajasthan State Pollution Control Board
Head Office (Central Laboratory)
4, Institutional Area, Jhalana Doongari, Jaipur
302 004
Phone: 0141-5159648,5159607
Fax: 0141-5159665

Annexure S3_2: Inlet Outlet quality data of CETP-2 tested by RSPCB

FORM - X

RAJASTHAN STATE POLLUTION CONTROL BOARD

REPORT OF THE STATE BOARD ANALYST

(See Rule - 24)

Final Report

Report No. : 18995

Report On : 15/11/2019

I hereby certify that I **R K Sharma**, State Board Analyst duly appointed **under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974** received on the **12/11/2019** from **Yash Pal Meena, JSO, Pali ,RSPCB Pali** a sample of **Waste Water** of **M/S Pali Water Pollution Control Treatment and Research Foundation , Plant - , , Tehsil- Pali , District- Pali** Collected from **Waste water sample collection from outlet of CETP unit- II** Collected on **10/11/2019**. The Sample was in a condition fit for analysis as reported below :-

further certify that I have analyzed the aforementioned sample on **15/11/2019** and declare the result of the analysis to be s below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	7718
2	Zinc as Zn mg/l	Not Traceable
3	pH	8.08
4	Total Suspended Solids mg/l	176
5	Chemical Oxygen Demand (COD) mg/l	1101
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	236
7	Oil & Grease mg/l	6
8	Copper as Cu mg/l	0.507
9	Nickel as Ni mg/l	0.14
10	Lead as Pb mg/l	1.06
11	Total Chromium as Cr mg/l	0.102
12	Iron as Fe mg/l	2.07
13	Cadmium as Cd mg/l	0.023
14	Sulphides as S mg/l	35.2
15	Chloride as Cl mg/l	2770
16	Sulphate as SO_4 mg/l	1244
17	Ammonical Nitrogen as N mg/l	21.8
18	Phosphate (Total) as P mg/l	Not Determined
19	Fluoride as F mg/l	2.96
20	Total Dissolved Solids mg/l	10346
21	Conductivity at 25° C µmho/cm_2	12160
22	Total Kjeldahl Nitrogen (TKN) as N mg/l	35.3

ondition of the seals, fastening and container on receipt was as follows : **Intact**

d This On **15/11/2019**

BOARD ANALYST

Rajasthan State Pollution Control Board

Head Office (Central Laboratory)

4, Institutional Area, Jhalana Doongari, Jaipur-302 004

Phone: 0141-5159648,5159607

Fax: 0141-5159665

Annexure S4_1: Inlet quality data of CETP-4 tested by RSPCB

FORM - X
RAJASTHAN STATE POLLUTION CONTROL BOARD
REPORT OF THE STATE BOARD ANALYST
(See Rule - 24)
Final Report

Report No. : 19000
Report On : 15/11/2019

I hereby certify that I R K Sharma, State Board Analyst duly appointed under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974 received on the 12/11/2019 from Deepak Ojha, JSO, Pali ,RSPCB Pali a sample of Waste Water of M/S Pali Water Pollution Control Treatment and Research Foundation , Plant - , , Tehsil- Pali , District- Pali Collected from Waste Water collection from Inlet of CETP - IV Collected on 11/11/2019. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on 15/11/2019 and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	9218
2	Zinc as Zn mg/l	1.19
3	pH	11.4
4	Total Suspended Solids mg/l	1500
5	Chemical Oxygen Demand (COD) mg/l	2709
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	528
7	Oil & Grease mg/l	9
8	Copper as Cu mg/l	1.2
9	Nickel as Ni mg/l	0.07
10	Lead as Pb mg/l	0.188
11	Total Chromium as Cr mg/l	0.07
12	Iron as Fe mg/l	7.36
13	Cadmium as Cd mg/l	0.034
14	Sulphides as S mg/l	18.4
15	Chloride as Cl mg/l	2120
16	Sulphate as SO_4 mg/l	1383
17	Ammonical Nitrogen as N mg/l	23.5
18	Phosphate (Total) as P mg/l	Not Determined
19	Fluoride as F mg/l	4.5
20	Total Dissolved Solids mg/l	12148
21	Conductivity at 25° C µmho/cm^2	13370
22	Total Kjeldahl Nitrogen (TKN) as N mg/l	28

The condition of the seals, fastening and container on receipt was as follows : Intact

Signed This On 15/11/2019

BOARD ANALYST
Rajasthan State Pollution Control Board
Head Office (Central Laboratory)
4, Institutional Area, Jhalana Doongari, Jaipur-302 004
Phone: 0141-5159648,5159607
Fax: 0141-5159665

Annexure S4_1: Outlet quality data of CETP-4 tested by RSPCB

FORM - X
RAJASTHAN STATE POLLUTION CONTROL BOARD
REPORT OF THE STATE BOARD ANALYST
(See Rule - 24)
Final Report

Report No. : 19001
Report On : 15/11/2019

I hereby certify that I **R K Sharma**, State Board Analyst duly appointed **under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974** received on the **12/11/2019** from **Deepak Ojha, JSO, Pali ,RSPCB Pali** a sample of **Waste Water of M/S Pali Water Pollution Control Treatment and Research Foundation , Plant - , , Tehsil- Pali , District- Pali** Collected from **Waste Water collection from Outlet of CETP - IV** Collected on **11/11/2019**. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on **15/11/2019** and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	9508
2	Zinc as Zn mg/l	0.05
3	pH	8.71
4	Total Suspended Solids mg/l	340
5	Chemical Oxygen Demand (COD) mg/l	1612
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	292
7	Oil & Grease mg/l	5
8	Copper as Cu mg/l	0.414
9	Nickel as Ni mg/l	0.09
10	Lead as Pb mg/l	0.148
11	Total Chromium as Cr mg/l	0.06
12	Iron as Fe mg/l	1.9
13	Cadmium as Cd mg/l	0.041
14	Sulphides as S mg/l	56.8
15	Chloride as Cl mg/l	3240
16	Sulphate as SO_4 mg/l	318
17	Ammonical Nitrogen as N mg/l	30.2
18	Phosphate (Total) as P mg/l	Not Determined
19	Fluoride as F mg/l	3.3
20	Total Dissolved Solids mg/l	13520
21	Conductivity at 25° C µmho/cm_2	15440
22	Total Kjeldahl Nitrogen (TKN) as N mg/l	36.4

The condition of the seals, fastening and container on receipt was as follows : **Intact**
Signed This On **15/11/2019**

BOARD ANALYST
Rajasthan State Pollution Control Board
Head Office (Central Laboratory)
4, Institutional Area, Jhalana Doongari, Jaipur-302 004
Phone: 0141-5159648,5159607
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Annexure S5: Outlet (within premise) quality data of CETP-6 tested by RSPCB on 10-11-19

FORM - X

RAJASTHAN STATE POLLUTION CONTROL BOARD

REPORT OF THE STATE BOARD ANALYST

(See Rule - 24)

Final Report

Report No. : 18997

Report On : 15/11/2019

I hereby certify that I R K Sharma, State Board Analyst duly appointed under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974 received on the 12/11/2019 from Yash Pal Meena, JSO, Pali ,RSPCB Pali a sample of Waste Water of M/S Pali Water Pollution Control Treatment and Research Foundation , Plant - , , Tehsil- Pali , District- Pali Collected from Waste water sample collection from Outlet of CETP unit VI Collected on 10/11/2019. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on 15/11/2019 and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	6986
2	Zinc as Zn mg/l	Not Traceable
3	pH	8.35
4	Total Suspended Solids mg/l	28
5	Chemical Oxygen Demand (COD) mg/l	124
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	18
7	Oil & Grease mg/l	Not Traceable
8	Copper as Cu mg/l	0.037
9	Nickel as Ni mg/l	0.12
10	Lead as Pb mg/l	0.009
11	Total Chromium as Cr mg/l	0.106
12	Iron as Fe mg/l	0.296
13	Cadmium as Cd mg/l	Not Traceable
14	Sulphides as S mg/l	0.8
15	Chloride as Cl mg/l	2560
16	Sulphate as SO_4 mg/l	991
17	Ammonical Nitrogen as N mg/l	3.92
18	Phosphate (Total) as P mg/l	0.1
19	Fluoride as F mg/l	3.78
20	Total Dissolved Solids mg/l	7874
21	Conductivity at 25° C µmho/cm_2	11440
22	Total Kjeldahl Nitrogen (TKN) as N mg/l	8.4

e condition of the seals, fastening and container on receipt was as follows : Intact

ned This On 15/11/2019

BOARD ANALYST

Rajasthan State Pollution Control Board

Head Office (Central Laboratory)

4, Institutional Area, Jhalana Doongari, Jaipur-302 004

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RAJASTHAN STATE POLLUTION CONTROL BOARD
REPORT OF THE STATE BOARD ANALYST
(See Rule - 24)
Final Report

Report No. : **18834**
Report On : **30/09/2019**

I hereby certify that I **R K Sharma**, State Board Analyst duly appointed **under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974** received on the **16/09/2019** from **Deepak Ojha, JSO, Pali ,RSPCB Pali** a sample of **Waste Water** of **M/S Pali Water Pollution Control Treatment and Research Foundation , Plant - , , Tehsil- Pali , District- Pali** Collected from **Final Outlet of CETP VI (outside) before confluence to River Bandi** Collected on **13/09/2019**. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on **30/09/2019** and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	5492
2	Zinc as Zn mg/l	0.034
3	pH	7.66
4	Total Suspended Solids mg/l	77
5	Chemical Oxygen Demand (COD) mg/l	1072
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	103
7	Oil & Grease mg/l	2
8	Copper as Cu mg/l	Not Traceable
9	Nickel as Ni mg/l	0.140
10	Lead as Pb mg/l	Not Traceable
11	Total Chromium as Cr mg/l	0.059
12	Iron as Fe mg/l	1.29
13	Cadmium as Cd mg/l	Not Traceable
14	Sulphides as S mg/l	17.40
15	Chloride as Cl mg/l	2050
16	Sulphate as SO_4 mg/l	303
17	Ammonical Nitrogen as N mg/l	33.60
18	Phosphate (Total) as P mg/l	2.5
19	Fluoride as F mg/l	2.27
20	Total Dissolved Solids mg/l	7722
21	Total Kjeldahl Nitrogen (TKN) as N mg/l	40.32

The condition of the seals, fastening and container on receipt was as follows : **Intact**

Signed This On **30/09/2019**

BOARD ANALYST

Rajasthan State Pollution Control Board
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Annexure S7: Outlet (within premise) quality data of CETP-6 tested by RSPCB on 13-09-19

FORM - X
RAJASTHAN STATE POLLUTION CONTROL BOARD
REPORT OF THE STATE BOARD ANALYST
(See Rule - 24)
Final Report

Report No. : **18833**
Report On : **30/09/2019**

I hereby certify that I **R K Sharma**, State Board Analyst duly appointed **under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974** received on the **16/09/2019** from **Deepak Ojha, JSO, Pali ,RSPCB Pali** a sample of **Waste Water** of **M/S Pali Water Pollution Control Treatment and Research Foundation , Plant - , , Tehsil- Pali , District- Pali** Collected from **Final Outlet of CETP VI** Collected on **13/09/2019**. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on **30/09/2019** and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	4260
2	Zinc as Zn mg/l	Not Traceable
3	pH	7.70
4	Total Suspended Solids mg/l	46
5	Chemical Oxygen Demand (COD) mg/l	232
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	34
7	Oil & Grease mg/l	1.0
8	Copper as Cu mg/l	0.010
9	Nickel as Ni mg/l	Not Traceable
10	Lead as Pb mg/l	Not Traceable
11	Total Chromium as Cr mg/l	Not Traceable
12	Iron as Fe mg/l	0.458
13	Cadmium as Cd mg/l	Not Traceable
14	Sulphides as S mg/l	3.0
15	Chloride as Cl mg/l	1560
16	Sulphate as SO_4 mg/l	575
17	Ammonical Nitrogen as N mg/l	8.40
18	Phosphate (Total) as P mg/l	1.4
19	Fluoride as F mg/l	2.49
20	Total Dissolved Solids mg/l	5252
21	Total Kjeldahl Nitrogen (TKN) as N mg/l	12.88

The condition of the seals, fastening and container on receipt was as follows : **Intact**

Signed This On **30/09/2019**

BOARD ANALYST

Rajasthan State Pollution Control Board
Head Office (Central Laboratory)
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Jaipur-302 004
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Annexure S8: Detailed Analysis report of inlet and outlet of CETP-6 tested by RSPCB from 16.1018 to 10.11.19

RAJASTHAN STATE POLLUTION CONTROL BOARD

COMPARATIVE STATEMENT

Analysis Results of CETP, Pali Unit VI

Date of Collection	Inlet effluent quality for CETP as prescribed under the Environment (Protection) Rules, 1986	16.10.2018	27.11.2018	11.12.2018	14.01.2019	17.02.2019	25.04.2019	21.05.2019	08.07.2019	05.08.2019	22.08.2019	10.11.2019	Moef & CC Notification Dated 01.01.2016 for treated effluent quality standard into inland surface water For CETP	16.10.2018	27.11.2018	11.12.2018	12.01.2019	12.02.2019	12.02.2019	17.02.2019	25.04.2019	21.05.2019	08.07.2019	05.08.2019	22.08.2019	25.08.2019	13.09.2019	28.09.2019	10.11.2019
		Inlet of Unit-VI												*Final Outlet of Unit-VI*															
pH	**5.5-9.0**	9.02	8.86	8.95	9.05	9.51	8.31	7.89	9.1	9.06	9	9	**6.0-9.0**	7.53	7.5	7.58	7.90	8.62	8.64	8.16	8.19	8.16	7.79	7.86	7.67	7.39	7.70	7.94	8.35
Total Suspended Solids mg/l	—	264	212	593	414	361	396	514	204	500	837	300	**100**	138	84	68	44	224	220	212	258	92	68	33	79	85	46	78	28
Chemical Oxygen Demand (COD) mg/l	—	1474	1364	1597	2095	1800	1553	1714	2641	2462	777	2538	**250**	714	616	837	320	1408	1624	1008	800	873	425	220	212	228	232	244	124
Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	—	312	328	390	469	435	362	290	582	534	150.0	491.0	**30**	126	156	212	74	392	456	210	196	140	124	37	28	26	34	30	18
Oil & Grease mg/l	**20**	14	12	13	16	9	7	9	17	11	8.000	16.0	**10**	4.5	2.5	2.0	1.0	5.0	6.0	4.0	3.0	4	3.5	NT	1.0	3.0	1.0	4.0	NT
Sulphides as S mg/l	—	24.0	10.8	12.6	16.4	10.2	10.6	32.0	24.2	58.0	16.000	34.4	**2.0**	7.6	3.4	4.2	6.6	14.6	15.4	6.4	5.2	11.4	13.4	NT	1.6	—	3.0	—	1
Copper as Cu mg/l	**3.0**	0.531	0.610	NT	0.260	0.571	0.424	0.601	0.892	0.047	0.167	0.618	**3.0**	0.259	0.027	NT	0.040	0.249	0.264	0.132	0.039	0.293	NT	0.031	0.009	NT	0.010	NT	0.037
Zinc mg/l	**15.0**	0.214	0.348	NT	0.247	0.961	NT	1.300	0.769	1.950	NT	0.106	**5.0**	0.128	0.156	0.247	0.586	0.401	0.139	0.336	NT	1.150	NT	0.714	NT	—	NT	—	NT
Nickel as Ni mg/l	**3.0**	0.009	0.173	0.020	0.093	0.155	0.205	0.138	0.130	NT	NT	0.140	**3.0**	NT	NT	NT	0.051	0.116	0.122	0.170	0.1	0.103	0.078	NT	NT	NT	NT	NT	0.12
Cadmium as Cd mg/l	**1.0**	NT	NT	NT	NT	0.049	0.048	0.039	NT	NT	NT	0.024	**0.05**	NT	NT	NT	NT	NT	NT	0.062	0.047	0.034	NT	NT	NT	NT	NT	NT	NT
Lead as Pb mg/l	**1.0**	0.019	NT	NT	NT	0.196	0.127	NT	0.019	0.080	NT	0.104	**0.1**	NT	NT	NT	NT	NT	NT	0.229	0.098	NT	NT	0.020	NT	NT	NT	NT	0.009
Total Chromium as Cr mg/l	**2.0**	0.18	0.03	NT	NT	0.022	0.721	0.042	0.114	0.185	NT	0	**2.0**	0.127	NT	NT	NT	NT	NT	NT	0.167	NT	NT	0.113	NT	NT	NT	NT	0.106
Iron as Fe mg/l	—	3.06	11.55	0.155	0.361	19.840	8.15	0.176	17.420	0.981	6	2	**3.0**	1.48	0.291	0.141	0.343	4.58	2.23	1.02	1.28	NT	0.298	0.818	0.025	0.018	0.458	0.034	0.296
Total Dissolve Solid mg/l	—	—	—	—	7532	—	8990	11790	12558	13356	7892	11826	—	—	—	—	6304	—	—	—	8632	11940	9064	2540	6918	6180	5252	6622	7874
Fixed Dissolve Solid mg/l	—	7320	8813	6687	6336	6	6711	8582	9468	8090	4788	8422	2100*	7801	8330	7339	5294	7982	8522	7451	7981	9546	7356	1380	5548	—	4260	—	6986
Fluoride as F [mg/l]	—	2.14	2.64	2.73	1.89	4.81	2.83	2.36	3.79	3.07	4	4	**2**	1.28	1.82	1.97	1.99	4.79	4.74	3.12	1.87	1.86	2.41	1.02	1.90	2.00	2.49	1.94	3.78
Chloride as Cl [mg/l]	—	2350	2350	2490	3410	2210	2390	2080	3660	3060	1750.0	2540	**1000**	2780	2750	3190	1940	2700	2640	2390	2550	2840	2880	636	2130	1980	1560	1880	2560
Phosphate (Total) as P [mg/l]	—	2	8	7	17	13	10	2.500	17.500	2	7	ND	**5**	1.5	4.5	3.0	1.0	2.5	3.5	7	4	1.5	6.5	NT	4.0	2.2	1.4	2.8	0.1
Ammonical Nitrogen as N [mg/l]	—	13.0	17.5	20.0	24.0	18.0	12.5	40.0	26.0	37.0	33	24.6	**50**	6.5	8.5	11.0	9.0	12.5	15.0	9.5	5.5	19.0	7.5	1.1	10.1	12.0	8.4	16.0	3.92
Total Kjeldahl Nitrogen (TKN) as N [mg/l]	—	27	36	39	39	32	28	50	29.2	40.3	34.7	26.3	**50**	13	19	24	26	22.4	24.6	18	13	27	16.8	1.68	11	18	13	20	8.40
Sulphate as SO_4 [mg/l]	—	1143	1056	926	1451	1324	1117	1045	750	977	1014	1382	1000	982	949	847	945	1314	1150	1101	1064	695	923	377	1064	844	575	864	991

NT : Not Traceable

Note: Bold characters indicate values exceeding the prescribed standards.

Annexure S9: Water Quality parameters results of Cess Pool (Dhora) tested by RSPCB on 11-11-19

FORM - X
RAJASTHAN STATE POLLUTION CONTROL BOARD
REPORT OF THE STATE BOARD ANALYST
(See Rule - 24)

Final Report

Report No. : **19005**
Report On : **15/11/2019**

I hereby certify that I **R K Sharma**, State Board Analyst duly appointed **under sub Section(3) of Section 53 of th Water (Prevention & Control of Pollution) Act, 1974** received on the **12/11/2019** from **Deepak Ojha, JSO, Pal ,RSPCB Pali** a sample of **Waste Water of Bandi River , Pali** Collected from **Bandi River Cess Pool Back side plo no. 18, PIA, Pali** Collected on **11/11/2019**. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on **15/11/2019** and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	8598
2	Zinc as Zn mg/l	0.051
3	pH	8.43
4	Total Suspended Solids mg/l	164
5	Chemical Oxygen Demand (COD) mg/l	1759
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	321
7	Oil & Grease mg/l	6
8	Copper as Cu mg/l	0.453
9	Nickel as Ni mg/l	0.15
10	Lead as Pb mg/l	0.453
11	Total Chromium as Cr mg/l	0.116
12	Iron as Fe mg/l	1.27
13	Cadmium as Cd mg/l	0.052
14	Sulphides as S mg/l	24
15	Chloride as Cl mg/l	2760
16	Sulphate as SO_4 mg/l	457
17	Ammonical Nitrogen as N mg/l	17.4
18	Phosphate (Total) as P mg/l	Not Determined
19	Fluoride as F mg/l	3.42
20	Total Dissolved Solids mg/l	11838
21	Conductivity at 25° C µmho/cm2	13470
22	Total Kjeldahl Nitrogen (TKN) as N mg/l	21.3

The condition of the seals, fastening and container on receipt was as follows : **Intact**
Signed This On **15/11/2019**

BOARD ANALYST
Rajasthan State Pollution Control Board
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Annexure S10 Water Quality parameters results of Jawadiya- Giradadra Puliya tested by RSPCB on 11-11-19

FORM - X

RAJASTHAN STATE POLLUTION CONTROL BOARD

REPORT OF THE STATE BOARD ANALYST

(See Rule - 24)

Final Report

Report No. : **19002**

Report On : **15/11/2019**

I hereby certify that I **R K Sharma**, State Board Analyst duly appointed **under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974** received on the **12/11/2019** from **Deepak Ojha, JSO, Pali ,RSPCB Pali** a sample of **Waste Water** of **Near Girdara to Jabariya Road Puliya , Village-Jabariya, Panchayat-Girdara , Tehsil-Rohit, District-Pali** Collected from **collection from D/s of Bandi River Puliya leading to Nehda dam** Collected on **11/11/2019**. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on **15/11/2019** and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	1686
2	Zinc as Zn mg/l	Not Traceable
3	pH	8.23
4	Total Suspended Solids mg/l	82
5	Chemical Oxygen Demand (COD) mg/l	163
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	25
7	Oil & Grease mg/l	Not Traceable
8	Copper as Cu mg/l	0.024
9	Nickel as Ni mg/l	Not Traceable
10	Lead as Pb mg/l	Not Traceable
11	Total Chromium as Cr mg/l	Not Traceable
12	Iron as Fe mg/l	0.551
13	Cadmium as Cd mg/l	Not Traceable
14	Sulphides as S mg/l	Not Traceable
15	Chloride as Cl mg/l	780
16	Sulphate as SO_4 mg/l	333
17	Ammonical Nitrogen as N mg/l	9.52
18	Phosphate (Total) as P mg/l	0.5
19	Fluoride as F mg/l	1.85
20	Total Dissolved Solids mg/l	2818
21	Conductivity at 25° C µmho/cm_2	3770
22	Total Kjeldahl Nitrogen (TKN) as N mg/l	10.1

The condition of the seals, fastening and container on receipt was as follows : **Intact**

Signed This On **15/11/2019**

BOARD ANALYST

Rajasthan State Pollution Control Board

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Annexure S11 Water Quality parameters results of Jaitpura- Gadhwara Puliya tested by RSPCB on 11-11-19

FORM - X

RAJASTHAN STATE POLLUTION CONTROL BOARD

REPORT OF THE STATE BOARD ANALYST

(See Rule - 24)

Final Report

Report No. : 19003

Report On : 15/11/2019

I hereby certify that I R K Sharma, State Board Analyst duly appointed under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974 received on the 12/11/2019 from Deepak Ojha, JSO, Pali ,RSPCB Pali a sample of Waste Water of Bandi River , Gadwara-Jaitpur Puliya , District-Pali Collected from collection from D/s of Bandi River Puliya leading to Nehda dam Collected on 11/11/2019. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on 15/11/2019 and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Fixed Dissolved Solids mg/l	2880
2	Zinc as Zn mg/l	Not Traceable
3	pH	8.43
4	Total Suspended Solids mg/l	12
5	Chemical Oxygen Demand (COD) mg/l	86
6	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	13
7	Oil & Grease mg/l	Not Traceable
8	Copper as Cu mg/l	Not Traceable
9	Nickel as Ni mg/l	Not Traceable
10	Lead as Pb mg/l	Not Traceable
11	Total Chromium as Cr mg/l	Not Traceable
12	Iron as Fe mg/l	0.209
13	Cadmium as Cd mg/l	Not Traceable
14	Sulphides as S mg/l	Not Traceable
15	Chloride as Cl mg/l	1060
16	Sulphate as SO_4 mg/l	504
17	Ammonical Nitrogen as N mg/l	5.6
18	Phosphate (Total) as P mg/l	0.5
19	Fluoride as F mg/l	1.82
20	Total Dissolved Solids mg/l	3688
21	Conductivity at 25° C µmho/cm_2	4850
22	Total Kjeldahl Nitrogen (TKN) as N mg/l	6.7

The condition of the seals, fastening and container on receipt was as follows : Intact

Signed This On 15/11/2019

BOARD ANALYST

Rajasthan State Pollution Control Board

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Annexure S12 Water Quality parameters results at Nehda Dam tested by RSPCB on 11-11-19

FORM - X

RAJASTHAN STATE POLLUTION CONTROL BOARD

REPORT OF THE STATE BOARD ANALYST

(See Rule - 24)

Final Report

Report No. : 19004

Report On : 15/11/2019

I hereby certify that I **R K Sharma**, State Board Analyst duly appointed **under sub Section(3) of Section 53 of the Water (Prevention & Control of Pollution) Act, 1974** received on the **12/11/2019** from **Deepak Ojha, JSO, Pali RSPCB Pali** a sample of **Water of Nehda Dam , Pali , District Pali** Collected from **collection from Nehda dam** collected on **11/11/2019**. The Sample was in a condition fit for analysis as reported below :-

I further certify that I have analyzed the aforementioned sample on **15/11/2019** and declare the result of the analysis to be as below :-

S. No.	Parameters	Result
1	Ammonical Nitrogen as N mg/l	Not Traceable
2	Fixed Dissolved Solids mg/l	1592
3	Sulphides as S mg/l	Not Traceable
4	pH	8.55
5	Total Suspended Solids mg/l	39
6	Chemical Oxygen Demand (COD) mg/l	81
7	Bio-Chemical Oxygen Demand (BOD) (3days at 27° C) mg/l	11
8	Oil & Grease mg/l	Not Traceable
9	Copper as Cu mg/l	Not Traceable
10	Zinc as Zn mg/l	Not Traceable
11	Nickel as Ni mg/l	Not Traceable
12	Lead as Pb mg/l	Not Traceable
13	Total Chromium as Cr mg/l	Not Traceable
14	Iron as Fe mg/l	0.323
15	Cadmium as Cd mg/l	0.01
16	Chloride as Cl mg/l	860
17	Sulphate as SO_4 mg/l	391
18	Phosphate (Total) as P mg/l	0.1
19	Fluoride as F mg/l	1.41
20	Total Dissolved Solids mg/l	2578
21	Conductivity at 25° C µmho/cm2	3880
22	Total Kjeldahl Nitrogen (TKN) as N mg/l	Not Traceable

The condition of the seals, fastening and container on receipt was as follows : **Intact**

Signed This On **15/11/2019**

BOARD ANALYST

Rajasthan State Pollution Control Board

Head Office (Central Laboratory)

4, Institutional Area, Jhalana Doongari, Jaipur

302 004

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Acknowledgements

Commissioner is thankful to all concerned who have been associated with the given tasks directly or indirectly during data collection and inspection of the sites. He is also thankful to following individuals and agencies/organizations.

Mr. P K Goel, Chairman, RSPCB, Jaipur
Smt. Shailaja Deval, Member Secretary, RSPCB, Jaipur
Mr. V. K. Singhal, CEE & OIC (Planning & CETP), RSPCB, Jaipur
Sh. Dinesh Chand Jain, District Collector, Pali
District Administration Barmer and SDM, Pali
Mr. Amit Sharma, EE and R.O., RSPCB, Pali
Sh. Deepak Ojha, JSO, RSPCB, Pali
Sh. Yashpal Meena, JSO, RSPCB, Pali
Mr. Mahaveer Singh Rajpurohit, Petitioner
Officials of CETP Pali
Dr. Makrand Wagale, BITS Pilani
Villagers and Social Activists working in nearby areas of Pali.

References

1. **Singh, A. P.,** Gupta A. B. and Akolkar, A.B. (2019) Status of River Bandi and Common Effluent Treatment Plants (CETPs) at Pali, Rajasthan as members of High-Powered Committee of Scientists/ Commissioners in compliance of order of Hon'ble National Green Tribunal (NGT), New Delhi dated 21.12.2018, (In the Matter of Original Application No. 32(THC) of 2014 (M.A. No.921/2018 & CWP No. 9503/2012), Kisan Paryavaran Sangaharsh Samiti, Jaipur Vs State of Rajasthan & Others), 16 January 2019, pp. 2919-3064.

Date: 27.11.2019

To
Registrar General
Principal Bench,
National Green Tribunal
Faridkot House, Copernicus Marg,
New Delhi - 110 001

Subject: Submission of Status Report in compliance of the order dated 18.10.2019 passed in O.A.No. 32/2014 (THC) (CWP No. 9503/2012) (M.A. No. 921/2018) Kishan Paryavaran Sangaharsh Samiti, Jaipur Versus State of Rajasthan & Ors. by Hon'ble National Green Tribunal, Principal Bench, New Delhi

Sir,

The undersigned was appointed as Court Commissioner vide above captioned order passed by the Hon'ble National Green Tribunal, Principal Bench, New Delhi. In compliance thereof, the undersigned inspected CETPs Pali and some sites along river Bandi during 10-11th November 2019 and 21st November 2019 to prepare status report on CETP Pali.

Please find herewith the soft copy of the status report on above subject matter. Kindly let me know if you need any further assistance.

Thanking You,

Kind Regards,

Sincerely Yours

Ajit Pratap Singh
Court Commissioner, Hon. NGT
Professor and Dean, BITS Pilani Rajasthan